Nuiqsut Comprehensive Plan 2022 - 2042
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Nuiqsut
Comprehensive Plan

Adopted by the North Slope Borough on December 6, 2022

North Slope Borough Assembly Ordinance #75-06-76
North Slope Borough Planning Commission Resolution #2022-12
City of Nuiqsut Resolution #22-15
Kuukpik Corporation Resolution #2022-26

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William A. Tracey, Vice President (Atqasuk & Point Lay)
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Acronyms

°F  degrees Fahrenheit
A&F  North Slope Borough Administration and Finance Department
AAAQS  Alaska Ambient Air Quality Standards
ADEC  Alaska Department of Environmental Conservation
ADHD  Attention Deficit Hyperactivity Disorder
AEA  Alaska Energy Authority
AEWC  Alaska Eskimo Whaling Commission
AFN  Alaska Federation of Natives
AHFC  Alaska Housing Finance Corporation
Alpine  Colville River Unit
ANILCA  Alaska National Interest Lands Conservation Act
ANCSA  Alaska Native Claims Settlement Act
ANWR  Arctic National Wildlife Refuge
AOI  Area of Influence
AS  Alaska Statute
ASNA  Arctic Slope Native Association
ASRC  Arctic Slope Regional Corporation
ASTAC  Arctic Slope Telephone Association
ASTAR  Arctic Strategic Transportation & Resources Project
ATV  All-terrain vehicle
AWIC  Arctic Women in Crisis
BIA  Bureau of Indian Affairs
BLM  Bureau of Land Management
BP  British Petroleum
CAH  Central Arctic Herd
CCRHC  Cold Climate Housing Research Center
CD  Colville Delta
CEMP  Community Emergency Management Plan
CIP  Capital Improvement Program
CIPM  North Slope Borough Capital Improvement Program Management Department
CLRD  Lower Respiratory Disease
COPD  Chronic Obstructive Pulmonary Disease
CPAI  ConocoPhillips Alaska, Inc.
CPI  Consumer Price Index
CWA  Clean Water Act
CWAT  Community Winter Access Trail
CY  Cubic yards
D.A.R.E  Drug Abuse Resistance Education
DCCED  Alaska Department of Commerce, Community, and Economic Development
DEW Line  Distant Early Warning Line
DNR  Alaska Department of Natural Resources
DOD  Department of Defense
Acronyms (continued)

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Nuiqsagmiut Naasaglugu Sivunniugutaaqt Ikuñalaan Tallimaagliaq malgukipiaq malgutun qinaqqivlugu nunaaqqiatulu isumalaagatufiungich iñuñjava qanuglivi niqiukkutinjillli isumaluitufiunju nunaqquata panmpañ suli sitkiumatixinjillli sivunmun.

Ilagivlugulu (1979) iñuñhagutaiqilgiaq sissamik piqtañiulut uniuni maqpiqiaaqtigit Niuqsamjui Paisanjich, tapisluglu Nuiqsagmiut Naasaglugu sivunniugutat (2042) uallarrisaqglugich atanqixissimmannigsraq maqpiqaaq nunaqqiitaq atannauranjiini nuli iñuñvinji nunaqqukitik savaañat ikunjan iñuñiunatu uniuni suli pigiraksratiq suti nunaqqiqiqaquinjinilu, state minlu federal-kavamminlu uqrsiqirillli suli allat kanqulutu kanqixissimmatiaqavqglugich qanuq Nuiqsagmiut akiusuitigraniñjili.

Nuiqsagmiut iñuñjisa ilauñjarut sivunnuqmatu suli ilisissiqsimmqakglugich pivuksrakunlu, ilisimmaranjinnilu suli iluuumugqutijterrinni.ni qanunut suqpaqutialajjich qanunut aqirujntitqchaglugich qanunut Inñupiaquniquñput suqpaqutilañjali uñnaqqiqani. Nunaqjimm iñuñvinji yugananjarut aullatitiqglugich iluuumuqutuñqaniq pigiraksranjanki sivunnuqgamik qanunut iñayuwitqsaq panmpañ suli taimmuñjali

Taimna sivunniq aqortuqtuglugijic inuqajqutanqic nunaqññuqaktiuqtiluqajjic nunaqañqimulu suli avantañilu iñuñiagviñanin inillaimatin taimmuñaglaan. Suqpaqurut tikkaqutut qanunut ikayuututailaajjich iñuñvinji

Kilikiututa

Nuiqsagmiut Naasaglugu Sivunniugutaat Ikuñalaan Tallimaagliaq malgukipiaq malgutun qinaqqivlugu nunaaqqiatulu isumalaagatufiungich iñuñjava qanuglivi niqiukkutinjillli isumaluitufiunju nunaqquata panmpañ suli sitkiumatixinjillli sivunmun.

Ilagivlugulu (1979) iñuñhagutaiqilgiaq sissamik piqtañiulut uniuni maqpiqiaaqtigit Niuqsamjui Paisanjich, tapisluglu Nuiqsagmiut Naasaglugu sivunniugutat (2042) uallarrisaqglugich atanqixissimmannigsraq maqpiqaaq nunaqqiitaq atannauranjiini nuli iñuñvinji nunaqqukitik savaañat ikunjan iñuñiunatu uniuni suli pigiraksratiq suti nunaqqiqiqaquinjinilu, state minlu federal-kavamminlu uqrsiqirillli suli allat kanqulutu kanqixissimmatiaqavqglugich qanuq Nuiqsagmiut akiusuitigraniñjili.

Nuiqsagmiut iñuñjisa ilauñjarut sivunnuqmatu suli ilisissiqsimmqakglugich pivuksrakunlu, ilisimmaranjinnilu suli iluuumugqutijterrinni.ni qanunut suqpaqutialajjich qanunut aqirujntitqchaglugich qanunut Inñupiaquniquñput suqpaqutilañjali uñnaqqiqani. Nunaqjimm iñuñvinji yugananjarut aullatitiqglugich iluuumuqutuñqaniq pigiraksranjanki sivunnuqgamik qanunut iñayuwitqsaq panmpañ suli taimmuñjali

Taimna sivunniq aqortuqtuglugijic inuqajqutanqic nunaqññuqaktiuqtiluqajjic nunaqañqimulu suli avantañilu iñuñiagviñanin inillaimatin taimmuñaglaan. Suqpaqurut tikkaqutut qanunut ikayuututailaajjich iñuñvinji

qunaqñlluataglugic iniqpanqillju suli savaktinjich ikayuuirut qanuq uqrsrmik ikummatiglagsqmsiqliu, aqpsiguqulutqilu suli iligülluantagniqsanqilli suli iñuñiaqngsanqilli suli savaktiuttulatikan ikuyuirlarut sayaqinjnikunlu piaqquutixalunlu, ilisaurrinicqullu, iglusranjilu aimaagvikxsavasaanik nutaaniq suli illuqagenqinjinili ilgul ataramik; suli Nuiqsagmiut iñuñiaqviqita errusia nauraittigeluli nqiruqcinjilli nqisraqvigisuruqanqiji suli qaunagininiñju nunaqranjali. Aglinmuktuaq uqrsiqirit avattaani nunaqqiitqini suli avultili suli qarratitqtnqiniq suli silaput tipiglukslvglugulu tammart tamtkua aktiugai Nuiqsagmiut.


Tapuvat Naaqaaglugic
Sivunniųguń

Taimna nəaqaaglugu sivunniųguń tapuriruq quilitatausitīn avgutiniq uqausigainińaranq, manirivlutik ilisimmaragsranqiniq suli aullarritigsranqiniq tamatkua akturranq och Nuiqsagmiullu avataanilu.

1

Aullaqisaaąńun

Aullaqisaaąńunmi unįn uqausiginranqį ittuq pisaagivlutik suli pitquarat maliƣuqagafsraq SharedPointer naasaaglugu sivunniųguń suli tapkua sivuani sivunniuqajaranq, suli taputivlugu maliƣuqagakranq Paisanq−min aullatiniagaich suli qanqun nuna atuguuliańa suli sulluunaiqtiiańalu. Malgũnunq aullarinjisa tusaqsqunińaranq kasimmavkütinanq sullinaiaqtiiańanq, qimilguainińanq NSB Planning Department minlu suli aqquțunaińanq NSB Assemblymin. Uqaagiuțigińagaat suņątaińinnińuq, suņāińinnińińuq, piviksranqinińińuq suli sivuuqasaaqąńtilu taputıńagaic aasii inillaľutiq manņuľuľufutin qanunun uqausiginranqanq nalunaiqsaņaranq inna, aasii qiiŋiaq piɾaƙiɾisi aŋat nalunaiqsaņarunq Nuiqsagmiuq piqpiqikanjilu suli Iŋupiaguniqpullu suli niǐŋukkutińinnińińuq tapțińaraq avgun atașińi suli tuglińit ukua.

Ińunjqh Nuiqsutgın qipiqniqut qanqun ilulŉikuniq nunaqqíqitik itqagaluqaat kutchiqiŋpkakkaat suņątaińunq qituńaŋqinińuq, suli qumiglugu İŋuqipagun ipquпуli ilisiimmatıńuq ańunianikunuq niquisarıkunuq.

Qaunraqsraurugut ińuniaŋqvińpıniqińuq suli ińuniaŋqvińınuq irrusia qaunagigluq immaqtiŋiń tuapkuq kiņunjiiqtiiktn akatchilaćhquuł;

Nunjiŋišałlaqulaq suksraunqiqxlianq chuálłu aasii ińuniaŋqvińi quluamulun aasii ińuniaŋqtiquluaq isiŋatiaqtaqtuul Nuiqsagmiq quviasuurnünq quyatiqqtqut niŋquaŋqianqamik nutaqqaptińińun qaŋiŋtsiŋnaiŋqikput attuamavlugiç savalguñiñiŋ iŋkałuutuʁuŋ ińunıñiŋun aŋkuトルuŋluq idiqiŋtqunuq iluakun ińuniaŋqiq, piyaqutiałlaaqańińuq suli maniksuuriqpańįqعقوqta nunaaqqıńpınını.

Qaŋiŋqsiƫtqagq aššaŋq̥išałuq aiššaŋq̥išałuq maninniianikun tunulli.simpsamglugıq ᵃnnaqpița tawŋ̣iŋq̣iŋıŋq̣ińińuq suli salummaraquńun savakțitlullu naagq̣ savawinįńlu nunaaqpița savaanallasiqglugıq suli anuŋuunapakaglugıq piviksretlıqglugıq savakțitlul.

Piŋuqutiaľłuquruqut piŋaqtiŋįnįlųqglugıq naviańițuqchaninglu, salummaruaniq glu aksiŋqanjițuqchaninli aiššaŋq̣išałuq atisılvıqglugıq quuțun. Maninnuŋuğa naagq̣ manińkku tłuqlułul, suakiaŋ ińuiıt inuuluuta-qgumat.

Avaŋnuñ sauqatigikłuq sivunnuųgguuruqut suli qimmaqsaatiklułtu tikiniuraglugıq tikisagəvət nunaaqpița attuamavlugıq Nuiqsut Paisanq̣ İŋuqipaguniqpitγun aullatıγaqtγut suniń sauqatigqrapqtińun nunaaqpițıńuq suli savattiqtińu.
Piraksriusaaglu atausimik naagga qavsinik ullaksraqallaanaqtuq asasi qanukiaq savaaginairtialaana, sughusisaqtni ullaqtrakullu innailiyuminaqtuq qanukiaq savaagigayaqapparrun taamnaguuq qaanijisit chuminagniagaat nunaqqim iñuñinnin naagga atannaurajinniin, NSB gaukfnij, savaktiijnillu, NSB atannauranij, savaagisram, pipkagnisrananiglu suilin managnisrananiglu allallu kanññraat. Inugiaqtaut ullaqtrakullu nunaqqim qaunatiqiigmaqiga aullaqisaqtninallu ikayuqtsiugninniullu allat anuniniin.

1. Atautchikun atisivfutin nunaqpitut aqisugnaqhutqut tigusinoñalasiyuluglu aasiiin aglinmuktuqaqisivvuni aqisugnaqtuq amixañalasiyulivuni aglaa āqanuo nunaqtuk qaunniqivvulu nunaqpitut ɨnɨnuñoqwigvukput sulin ɨnmunapikput. Aasiiin nunaqpitut aqisugnaqtuq itiláaqsqariq akunaptun itiláaqsqariq Nuuqsanun itqauummalu savaasqiqiqqitgsqaurugut avanmun suuiaq qaunniqilaniagikput nunaqpigwiguqivvuklu sulin ɨnuñiiqwigvukput sulin aqisugnaqtaqagiravullu.


5. Iqlulautasrusnik, aqaniqsiqiriq akunaptun uqiqmat uqiqmatuq itiláaqsqariq Nuuqsañqmiut.


7. Ivaqgiglu aninissuutauginaqtniun nokamaptiñnuqnuq sulun nunaqqipta ikuqetigiikitfitu uqiqmat uqiqmatuq itiláaqsqarapiluq aqaniqsiqiriq akunaptun uqiqmat uqiqmatuq itiláaqsqariq Nuuqsañqmiut.
Inillaaniŋaruallu, Kavammaptiglu, Piraŋausivulu


Iñuŋiña Nuiqsam qiksısıuugaiĉh piragaunijich kiriuniŋiŋsaŋlu suli nunaraqt attuuvaluglun Inupiagunipta piŋfiṕiuglun. Iñupiaqtivut ukuniŋa piŋpiqisuuugaiĉh qitunγagiñiñlu, savutaq̂tnu, Iñupiaallagniñiñu aŋgiñiñiñu anayuniglu uyugniglu suli nigipkiunaatuqaptut suli ỉi̲n̲is̲m̲m̲at̲a̲a̲t̲ nigrutiniglu suli qiksısıutaqtaqaptut iñuuniiqvium irrusianik imilautakunlu, salumaruaq silakput, suli niqsaagniŋput allakanik nigrutiniglu.
Nuiqsatmiut


### Nuiqsam Agiŋmuktuqtuaq Inuni 1980 min – 2022 mun

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<tr>
<td>NSB Census</td>
<td>208</td>
<td>354</td>
<td>433</td>
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<td>U.S. Census</td>
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</table>

2022 State-certified population of Nuiqsut

Nunaaqqiguuq aglímuŋqutuq innatun 0.76% tun 1998 min. Aglímuŋqulapalunaruq taamana qulit malunjuni ukiuni, innatun 1.97% 2010 min.

### Qitiqqanaguuq

ukiuttutilaam inuinnatun ittuq inuunaq tallimat ukiuni nukaqlilinit inuinnaqatausítun 1998 mi, aasiin tuqqaulnaaqatuq inuinnaq tallimat malguni ukiuqaqtausítun 2015 mi.

24 Median Age in 2019

### Allŋuqtuq Iñuunj Nuiqsam 1993 min – 2019 mun

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<tr>
<td>20%</td>
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<td>1%</td>
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<table>
<thead>
<tr>
<th>Inupiut</th>
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<tbody>
<tr>
<td></td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

### Average Household Size in 2019

4.3

### Projected Population in 2040 under a Modest Growth Scenario (0.5%)

534

Innatus 1% aglímuŋktuarq iniutiglinaaŋiñaq qisiqat 593 iñuut tiktuŋqiugu 2040 ukiuq, aasiin aglímuŋktuarqiniŋquq innatun ukiuni, aglaan aqunarnuq qanugitälaagmarun qulit ukiuni.

Page xvii

Aimmaaəvıkstatigun


Uunanauvva pirraksraipiallaktuq aimmaaəvgvivut inilliiualpiallaktuq. Nunaqpanmin allaujętchuguttaq qavsit qituŋnaqjiiq iuunaiaqqtut atausimi aimmaaəvgviŋmi innatun 3.4% tun iniiuiuliunarut aasiin State of Alaskam innatun 6.4% tun aq̣aalan Nuiqsqgmiut innatun 33% tun iniiuiʃlīpaallarar qutqiŋniŋsvaaurq North Slope nunaaqiiqni. Iniiqniŋniq alaŋnuʃatchuq qulit ukiun, κisiamniq qiltun (10) aimmaaəvgviktiʃialluingredientuq 2010 mi.

Aimmaaəvgvivchaʃrraniq pijaqtuqgʊraʃpaalaʃktuq 2014 mi TNHA nuluniqʃinnuqaiq pijasukipiaq tallimattu pijasutun 68 aimmaaəvgviʃchaʃliruŋsraurut aq̣aalan qunmuktuallararq sisamakipiatun (80) aimmaaəvgviktiʃasrariŋu 2020 弩μγμnaasiin aq̣linmuʃkuqtuqtsuʃli sisamakipiaq qulinquəgtialtuq (89).

Maninnagvikunlu, Illuaqτtuatigun, ṭlisaaurriŋunlu


Nuiqsam ikayuqtiʃsiuʃvugvait maʃliqniq Health Aide- qaaʃtuq illuaqʃuʃtuq Community Health Aide Program- mi, illinallaʃtuq qaaʃgiɾisgugunүq ikayuqnuq̣ miq̣ niʃuʃjaŋgman naaŋ aŋniʃna. Iuunaiaqti suli kiʃuʃiʃqiʃiɾuq ʃsiiqtaʃqallagurut pirqqagasaʃuguŋ. Aasiiin qanugriʃtauqaniniq maʃiʃguuq illuaqtuq NSB


Nuiqsut Trapper Miŋuaqtauviatg̣uq uʃŋaʃlataaurugḷu savaaʃ sıɾuʃtaʃiŋa tanaɾuʃq NSBSD smma guq talḷmaʃkiɾiap magu̩kiɾiap akiʃma aτaʃutun (156) miŋuaqtaʃtut kiihɾ̣g̣aɾtiiɾ̣m-ʃni. Qulitmaʃgutun (12th) ilʃaʃtuq. Inug̣aʃkiʃnuʃarutg̣uq iuʃnuʃq ukiuʃni uʃiːni uʃiːniʃsaʃgigaiq iniiuʃliqpatik suli pʃiʃq̣tauʃgʊraɾuʃ savaaʃq̣uʃkaʃmaŋiʃgïʃsrmiiŋ, aniiʃyaʃpuyaʃamik savaaʃvsrmiiŋ, savilniʃqiniŋiniq suli inigraʃranqiiq siʃliq̣siṛiʃmik suli tʃuʃq̣viʃsraʃvaʃmaʃ. Suq̣paʊrauʃq unna nunaqpiʃtiŋnuʃlu suli miŋuaqtaʃtuqtaʃnaʃni qutuʃq̣tauʃvugvuk.
10

Nunam Attugñinallu Qanuglu


ataññiqsimaniggaat sunik sutilaaññillu savaaqiagjsranjikññi tulmaani. Suli allagiit kanññullu pigivlugiç qaaññaniittuat aksugnaqtuat savaaqiagjsranjiiqput avatanni Nuiqsam. Ññupiiallu sanna nunanañtiññiç inmiut taamaani aasii qaunnaginiiç siglîñaq suivaqlugu. Taama avgun maniriruq qanututin aptαιiallagascarññiç qanuq anñalâññiniç nunakput suli uqqaqtaqtaugstiañillançiq avanmun qanuq atugniaqiallana nuñaktik suli nalunasilluggiç ilançiq sivunniiñqutiniññun atakkii piaqtaqtsraupaillaktuq aimmaaqviksraniq.

11

Savaaqlíigviit


Nuiqsagmiññguñ quññq inññfluññîggiññq ñuññagigvluññuq aqunñiniññakunlu suli illuuqúgqtsramiññik inñuuniñqiññi irriññiñquññiññiññikan suli avanmun kavamapta ilisimmapaqtqtaugstiañillagiq pisigîlûqîgiguñ niqñruñgviññuq, silaqqpuññuq qanuññilaññiññi suli nalauñññaruññik autaaññunmiq palaññaqsaasaglugiç Nuiqsagmiññ qanuñú maqúñchiñviaqgh Inuuniñqulluktut nalain
Summary

The Nuiqsut Comprehensive Plan 2042 is a vision for the community and reflects the voice of the many residents who shared their hopes and concerns about the community today and into the future. Along with the 1979 document Nuiqsut Heritage: A Cultural Plan (also known as the Paisanjich) and its addendums, the Nuiqsut Comprehensive Plan 2042 is the guiding document for community leaders and residents to shape the village over the next twenty years and is a vital resource for regional, state, and federal governments, industry, and other organizations and institutions to better understand the values and needs of the community.

The residents of Nuiqsut were integral to the planning process and they contributed their time, knowledge and emotional testimony to emphasize those things that were important to the community and their Inupiaq culture. Community input and guidance were essential to ensure that the contents of this plan illustrate what’s important to the community today and into the future. It is a living document developed with a focus on community input to guide the community’s decision-making in both the near- and long-term.

This plan addresses topics that affect how the community and surrounding environment develops for decades to come. The topic areas focus on what is important to the residents: well-maintained infrastructure that services the needs of the community such as natural gas distribution, road maintenance and extensions; efficient services including health care, education, and housing; continued protections of Nuiqsut’s surrounding environment to safeguard the plants and animals that residents depend upon; and the traditional and cultural values of residents. Expanding industrial development adjacent to the community and the repercussions of that development is the most critical issue for residents.

This is the community’s first adopted comprehensive plan. The first draft was developed in 2010 but was never carried to adoption. Then in 2015, the planning process was re-engaged and was very close to adoption but paused due to community concerns about updating the 1979 Paisanjich first prior to adopting the community’s comprehensive plan.

In 2020, The 1979 Paisanjich was updated and consists of two addendums: a 2018 Ethnographic Addendum and a 2020 Land Management Addendum. The two addendums attached to the original 1979 Paisanjich offer an integral resource to the community and those working with the community. The Paisanjich was used as foundational document in developing this comprehensive plan.
Contents of the Comprehensive Plan

Introduction

The introductory chapter contains a discussion on the purpose and legal basis for comprehensive planning as well as an overview of past planning efforts, including an outline of the Paisanich that community residents use for guidance and land use and development. There were two public meetings and two leadership meetings held during the development of this plan before it was reviewed by the North Slope Borough (NSB) Planning Department and adopted by the NSB Assembly. The discussion, organized into strengths, weaknesses, opportunities, and threats are included and form the foundation of the detailed discussion that follows. The vision statement is a statement that focuses on Nuiqsut’s values, sense of identity, and aspirations, is included in Chapter 1 and below.

As residents of Nuiqsut, we continue to seek a healthy community where residents value our strong family ties and embrace our traditional Inupiat culture, knowledge, and subsistence activities.

We are stewards of the environment, relentlessly advocating for the protection of the waters and lands of our ancestors from degradation, depletion, destruction, and pollution so that the ecosystem is healthy and all who live in and visit Nuiqsut will continue to enjoy its abundant natural resources.

We pass on the traditional knowledge of our land and subsistence resources and activities to our younger generations while embracing compatible modern technologies and contemporary knowledge to aid our residents in maintaining a healthy, safe, and affordable community. We promote a diverse economy by supporting local businesses and clean industries that provide residents ample employment opportunities that are flexible enough to support seasonal subsistence activities.

We strive to provide enough safe, sanitary, and affordable housing for all ages and income levels, along with quality infrastructure and convenient and reliable community facilities to ensure a high quality of life for all residents.

We approach community-wide decision-making with cooperation and patience achieve collective goals for the community using the Nuiqsut Paisanich Cultural Heritage as a guide for development in the village and the region.
GOALS, OBJECTIVES, AND STRATEGIES

Turning a comprehensive plan’s vision statement and goals into implementable actions are critical to effective long-range planning. In this plan, each goal is accompanied by one or more objectives that suggests how the community might achieve the intent and substance of its goal. Each objective is followed by one or more strategies that describe how the action could be implemented. Implementing strategies may establish how a specific course of action could be accomplished by village residents, village leadership, NSB Administration and staff, NSB legislators, development permitting and funding agencies, and/or other entities. For many of the strategies, the community is responsible for initiation and seeking assistance from other entities.

8. Collectively coordinate natural resource development and associated land uses to protect the natural environment and subsistence lands. As natural resource development continues in the Arctic and extends closer to Nuiqsut, it is important to work collaboratively to ensure the protection of the natural environment and subsistence lands and resources.

9. Preserve, protect, and maintain Iñupiaq traditions, cultural activities, and subsistence harvests. Subsistence is a way of life for most Nuiqsut residents. It is critical that both traditional knowledge and natural resources are protected for current and future generations. Hunting, fishing, and gathering, understanding of the land, air, and waters, being part of cultural activities and events, and language use and preservation are all part of the Iñupiaq way of life.

10. Maintain, protect, and expand community facilities and infrastructure. Nuiqsut has a significant infrastructure network, including a gravel road network, piped water and sewer wastewater systems, electric power, and an airport runway. It is important to maintain this infrastructure and expand when needed for resident quality of life.

11. Support housing quality, variety, and affordability. There is a severe housing shortage in Nuiqsut, with multiple generations of families living in overcrowded conditions. Many homes need weatherization improvements, basic home repairs, and air quality assessments to ensure healthy living conditions.

12. Maintain and expand community services to provide improved care for residents. To facilitate both physical and social well-being, space for activities and social gatherings is needed. Quality social services, health care services, and community preparedness are essential to the overall wellbeing of the community.

13. Develop a strong and resilient local economy. It is important to both prepare students to become community leaders and offer educational opportunities that train community youth for employment as well as foster leadership and civic mindedness.

14. Seek meaningful intergovernmental and community cooperation and resident participation in decision-making for betterment of all village residents. Village leadership seeks to work collaboratively to improve the quality of life for all residents. The purpose of this goal and its associated objectives is to facilitate opportunities within the village for meaningful public engagement and leadership cooperation together for the future of the community.
This chapter includes an overview of history of Nuiqsut, where the Iñupiat and their ancestors have inhabited the lands and waters for thousands of years. The Colville River Delta has been home to the Kuukpikmiut since time immemorial, thriving on a subsistence way of life in an environment that offers a bounty of plants and animals. The historic trek of 27 families in 1973 to resettle the Kuukpikmiut ancestral homeland is a pivotal event in the history of the region.

Nuiqsut’s local government is comprised of the City of Nuiqsut and Native Village of Nuiqsut, a Tribal government. The North Slope Borough, the regional government, provides many of the public services in Nuiqsut, including water and wastewater service, trash pick-up and disposal, road development and maintenance, and managing and maintaining the airport. Nuiqsut is represented in the NSB government through a representative on the Planning Commission and the Assembly. The village Native corporation, Kuukpik Corporation also plays a large role in addressing the needs of the community.

The residents of Nuiqsut honor cultural ties to ancestors and the land through traditional Iñupiaq values. The Iñupiat highly regard family, work ethic, the Iñupiaq language, drumming and dancing, and sharing food and knowledge of animals with a deep respect for the environment as it provides fresh water, clean air, and subsistence foods.

Clockwise from top left, photos courtesy of ASRC, George Sielak, ASRC, ASRC
This chapter provides the information on age, race, and population growth for the people of the Colville River Delta. Although the Kuukpikmiut have lived in this region since time immemorial, it was not until the 1940s that the U.S. included the village (recorded as the Colville River) in the Decennial Census. The community was absent from the census for the ensuing forty years. In 1980, after Nuiqsut was resettled by 27 families, that the community was recorded as Nuiqsut with a population of 208 people.

The North Slope Borough conducts its own census on a regular schedule, about every five to seven years. The survey includes more than a population count, it also includes questions for residents on subsistence and food sharing, food insecurity, health, family composition, voting, training, income, and language use. It is an important tool for matching programs to needs for the borough community and provided the foundation for this chapter.

The community has experienced an annual growth rate of 0.76% since 1998. It has increased at a much greater rate over the last twelve years, at 1.97% since 2010.

The median age has been in the 20s for the last twenty-five years, ranging from the youngest, 21, in 1998, to the oldest, 27, in 2015.

The average household size is the largest it’s been since 1998 when it was 3.62 people. It was at its smallest in 2010 at 3 people per household.

A 1% growth rate would increase the population to 593 by 2040 and would be in line with the growth rate over the last twenty years, but low when compared within the last decade.
Nuiqsut is located on Alaska’s Arctic Coastal Plain near the Colville River Delta, north of the Brooks Range, and just miles from the Beaufort Sea coast. This remote community experiences long cold winters with frequent storms and high winds followed by short and mild summers. Temperatures are well below freezing for much of the year. The Arctic ecosystem is in distress from global climate change. Lands and waters in the area are changing rapidly in response to warming air and water temperatures.

Many residents are concerned the air quality in and around Nuiqsut, primarily due to the nearby oil and gas industry. There is a monitoring program in Nuiqsut that is managed by ConocoPhillips Alaska. Residents have stated a desire for measuring additional pollutants and transparency in the results.

This chapter also includes information on the Colville River’s fish habitat, permafrost thaw, erosion, subsidence, plant communities, tundra fires, invasive species, land mammals, and migratory birds.

Subsistence is an integral part of the Iñupiaq traditional culture. The community is located near both the Colville River and the Beaufort Sea, both of which are central to hunting, fishing, and whaling subsistence activities by residents. The Paisaŋich provides in-depth information of both the nutritional and spiritual importance of subsistence activities to residents of Nuiqsut.

The region that residents travel for subsistence activities is called the Area of Influence (AOI). The Nuiqsut Area of Influence covers over 33,000 square miles, from as far away as Kaktovik and Anaktuvuk Pass, offshore past Cross Island, and east to Utqiaġvik and Atqasuk. The AOI is not static; it changes over time as migratory patterns and access changes. Nor is it meant to be inclusive; some hunters may travel further than these boundaries for subsistence activities.

Subsistence activities are vulnerable to climate change disruptions from climate change, noise, and other oil and gas industry activities.

Public facilities provide the backbone to life in any community. The North Slope Borough is responsible for providing many of the essential services in the community like water and wastewater service, solid waste disposal, most road maintenance, snow plowing, and power generation and heating. The City of Nuiqsut also has some public facility responsibilities, including managing the post office, childcare services, the cemetery, and recreational needs.

Like many communities, Nuiqsut has aging infrastructure coupled with high maintenance costs. Maintaining, expanding, and investing in infrastructure in the Arctic is expensive and transportation for goods and services requires patience. This chapter examines the community’s public facilities and identifies near and long-term capital needs, examines the resident subsidies provided by the NSB, and discusses the North Slope Borough’s annual capital funding process.
There are significant housing needs across the North Slope and Nuiqsut is no exception. Most in Nuiqsut are single family, built in the 1980s, and are, on average, just under 1,200 square feet. After forty years, many of these homes are facing deferred maintenance issues, especially given the harsh Arctic conditions and the lack of tradespeople and readily available housing maintenance materials.

The most pressing housing issue is that of overcrowding. While the national rate of housing overcrowding is 3.4 percent and the State of Alaska rate is 6.4 percent, Nuiqsut is experiencing 33 percent overcrowding, the highest of any community in the North Slope. The rate of overcrowding has essentially remained unchanged over the last ten or so years, with only ten homes being built since 2010.

The need for new housing is substantial. In 2014, Taqiguqmiullu Nunamiullu Housing Authority estimated a need for 68 homes; that need has jumped to 80 homes in 2020 and is expected to be at least 89 homes by 2040.

The economy in Nuiqsut is like many rural Alaska communities – it is comprised of both a cash economy, primary though wages and and Native corporation dividends; subsistence also makes a contribution to the local economy through providing food and clothing through hunting. As the village most directly impacted by oil and gas development, the oil and gas industry also plays a role in the local economy though employment at ConocoPhillips Alaska’s Alpine Development Project or through work for industry through the regional or village Native corporations.

Nuiqsut has a health clinic staffed by two health aides that are part of the Community Health Aide Program (CHAP), designed to provide quality health services in rural areas. Traveling doctors and dentists visit the village regularly. During a health self-assessment that is part of the NSB Economic Profile and Census Report, 39 percent of residents report to be in Very Good/Excellent health; 22 percent report being in Fair/Poor health. A healthy environment is as important as healthy personal habits. Many residents are concerned about the health effects of the industry activities on the air quality, especially for elderly and children.

Nuiqsut Trapper School is operated by the NSB School District and has approximately 156 in kindergarten through twelfth grade. Enrollment is at its highest level in twenty years; there are concerns about space limitations and the need for additional space for Career Technical Education, larger shop and welding areas, an office for a permanent school counselor, and storage space. Important for both the community and students is the need for additional recreational space.
There are many land interests in and near Nuiqsut. The community is just inside the National Petroleum Reserve – Alaska, which spans nearly 23 million acres, most of which is located to the west of Nuiqsut. The NPR-A is managed by the Bureau of Land Management. To the east is land owned and managed by the State of Alaska, including Prudhoe Bay, the largest oil field in North America and the terminus of the Dalton Highway. The federal and state governments, as well as the NSB all regulate activity and development in the region. Additionally, both the regional Native corporation, Arctic Slope Regional Corporation, and the village Native corporation, Kuukpik Corporation, own subsurface and surface rights to development in and around Nuiqsut. Native restricted land and Native allotments add to the land management complexity in the region. This chapter provides a robust background on the land management and also discusses issues with current land use and identifies areas planned for much needed housing development.

The Iñupiat of the North Slope have been aware of the presence of oil in the Nuiqsut region long before contact with Westerners. Today, the network of oil and gas exploration on the North Slope is extending in all directions – eastward, potentially into the Alaska National Wildlife Refuge, further westward into the National Petroleum Reserve – Alaska (NPR-A), and to the south along the Dalton Highway. The revenue from the oil and gas development supports the NSB government. Development also provides revenue to the regional and village corporations, both directly and indirectly. Especially in Nuiqsut, the closest community to oil and gas development, industry and the culture of the Iñupiat people and the subsistence resources they depend upon are at odds. This chapter provides insight into the oil and gas development on the North Slope, including the history of exploration and development, local concerns, environmental impacts, and funding.

The decades-long exploration into resource deposits in the region led to establishing the NPR-A and eventually, federal lease sales during the early 1980s. Under the statehood act, Alaska was authorized to select 100 million acres of federal land to develop; the state selected land in the Prudhoe Bay region, hopeful for oil and gas discoveries. Meanwhile, the U.S. Congress passed the Alaska Native Claims Settlement Act (ANCSA) in 1971, finally giving a voice in oil and gas development on lands that they have lived on for thousands of years.

Due to these land management decisions decades ago, today Nuiqsut is nearly surrounded by industry development. Residents are in a constant battle for protecting subsistence rights, access, and the health of the environment; the need for industry and government to consistently share information; the effect on animal habitats, water, and air quality; receiving a fair share of the funding derived from industry to mitigate effects of its presence; and the effect on the residents’ culture and traditions from outside influences.
Introduction

The Nuiqsut community and the North Slope Borough (NSB), launched the Nuiqsut Comprehensive Plan update in the spring of 2021. It was a village-wide community engagement effort to update the draft 2015 Nuiqsut Comprehensive Plan. The community, with assistance from NSB staff and consultants, undertook a future visioning process and Strengths, Weaknesses, Opportunities, and Threats workshops as initial steps in updating the comprehensive plan. These efforts engaged leadership at the City of Nuiqsut, Native Village of Nuiqsut, and Kuukpik Corporation as well as the community residents to develop a shared understanding of the community today and to anchor the planning process that address key issues for the future. This comprehensive plan is a statement of what the community of Nuiqsut wants to become. It is a set of goals, objectives, and implementing strategies designed to achieve a community-wide vision.

Located along the banks of a Colville River tributary that drains into the Beaufort Sea, this tightly-knit community of 492 mostly Iñupiaq residents is a traditional Alaska Iñupiaq village whose ancestors have traveled to and hunted in since time immemorial. The residents participate in the traditional activities of their ancestors: dancing and drumming and sharing food and knowledge of animals. Nuiqsut is located in Alaska’s Arctic; it is a harsh and isolated environment that remains below freezing for an average of 297 days of the year while the ground is covered with snow for about eight months of the year – from late September until May. The extreme cold and remote location presents logistical challenges for the community, from transportation for construction materials, food and household supplies, and personal travel, to building on permafrost, an endless search for gravel, and the essential need for both primary and back-up reliable heating sources.

Nuiqsut is the closest village to oil and gas facilities and exploration activities and is the most directly impacted by oil and gas activities of all North Slope communities. When the area was resettled in 1973, the road system of the fledgling Prudhoe Bay oil field was more than 50 miles away. Today, the community connects to Prudhoe Bay and the larger Alaska road network through restricted use and seasonal ice roads that weave across the tundra connecting oil and

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gas facilities to the Spine Road that ends near Deadhorse. To the north, Nuiqsut is also connected by eight miles of road to the Colville River Unit (Alpine). Other oil and gas developments nearly surround the community with Greater Mooses Tooth Oil & Gas Development (GMT) to the west and the Umiat prospect to the south.

1.1. Purpose of a Comprehensive Plan

The Nuiqsut Comprehensive Plan is a long-range document intended to guide the development of Nuiqsut and its Area of Influence (shown in Map 3) over the next twenty years and beyond. The plan is a coordinated approach to community planning that is intended to guide decision making for preservation, investment, and development of future community resources and infrastructure. Community residents, landowners, public officials, and government staff among others participate in this long-range planning process.

While the Iñupiat have always faced change, oil and gas development and impacts from climate change pose the most recent challenges. This comprehensive plan is intended to assist the community in charting its future as it takes advantage of new opportunities and creates solutions to current and future challenges. Residents can use this plan to advocate for projects and measures that would improve community infrastructure and enhance quality of life. This comprehensive plan is a statement of what the community is like today and what the residents want it to become in the future. It contains goals, objectives, and implementing strategies to achieve a community-wide vision.

Upon adoption, the Nuiqsut Comprehensive Plan, along with the Nuiqsut: A Cultural Heritage (Paisanich) and its addendums, become the primary land use policy documents for Nuiqsut and provide guidance on a variety of long-range planning and land management issues that are critical to the future of the community. This plan also contains a vision statement for the future as well as goals, objectives, and strategies to implement that vision.

This comprehensive plan provides background information about the community which can be referenced when making community development or land use decisions and when seeking outside funding. Specifically, the plan is intended to:

- Guide growth and development of the community;
- Characterize current strengths, weaknesses, opportunities, and threats to the community;
- Describe what the community residents’ want for the future;
- Provide anticipated capital needs over a 20-year planning horizon;
- Provide the foundation for development proposal comments, land use planning and regulation, investments in infrastructure, and land use policy decisions.

Although this plan has a 20-year planning horizon, conditions, issues, and priorities will undoubtedly change over this period. Regular review and revision of the plan ensures that the goals and strategies respond to changing circumstances and needs within the village and its Area of Influence. To remain current and useful, this plan should be reviewed every two years for potential updates and revisions. Future plan revisions should monitor growth, evaluate
development and related programs, and measure how well the plan is meeting the community’s goals, objectives, and implementing strategies.

The NSB uses comprehensive plans when evaluating land use proposals or actions specific to a community, including approval of subdivisions, changes to zoning districts, borough permitting, and capital improvement recommendations. The borough will also use this plan to help guide the location, timing, and scale of community development and infrastructure investments. It is also used to plan for community needs based on trends and population projections and to consider the protection of important environmental and cultural resources. It may also be used to develop mitigation measures as conditions of permit approval.

Federal and state agencies and potential project funders are encouraged to use the plan to understand community values, needs, and priorities for investment. Some funders may only provide project financing if it is included or consistent with policies of an adopted community plan.

Private landowners, developers, and Native corporations may use this plan to help guide development decisions and investment choices. Community data, maps, and policies will help these entities design projects compatible with community values and needs to meet local expectations.

Nuiqsut residents can use this plan to advocate for a better future that is consistent with local needs and resources. Infrastructure and level of service planning with population trends also help citizens stretch available funding for more efficient and effective government service. A primary interest for the future development of Nuiqsut is to ensure the traditional way of life through the protection of marine and wildlife habitats and subsistence rights.

Ultimately, this plan seeks to conserve valued resources and uses and encourages development that meets the needs of the present population without compromising options for future generations.

1.2. Basis for Comprehensive Planning

Title 29 of the Alaska Statutes provides the authority for comprehensive planning in Alaska. The North Slope Borough is responsible for planning, platting, land use regulations, and development of a borough-wide comprehensive plan. Alaska Statute and the NSB Municipal Code (NSBMC) state that “The comprehensive plan is a compilation of policy statements, goals, standards, and maps for guiding the physical, social, and economic development, both private and public, of the first or second class borough and may include but is not limited to the following:

1) statements of policies, goals, and standards;
2) a land use plan;
3) a community facilities plan;
4) a transportation plan; and
5) recommendations for implementation of the comprehensive plan” (AS §29.40.030 and NSBMC §2.12.170).

The NSBMC also calls for the Planning Commission to consider amendments to the comprehensive plan from time to time (§19.30.050), undertake an overall review of the plan at least once every two years (§2.12.170),
and review and report to the Assembly the location, design, construction, demolition, or disposition of any public building, facility, collector or arterial street, park, greenbelt, playground or other public facility based on the comprehensive plan and the capital improvements program (§19.30.050).

The NSB Department of Planning and Community Services (NSB Planning) implements land use planning and regulation for the borough. Its goals include updating, maintaining, and implementing the North Slope Borough Areawide Comprehensive Plan, village comprehensive plans, as well as empowering community-level decision-making in social, economic, and development issues. Through the Community Planning and Development Division, NSB Planning also facilitates the annual capital project request process and develops the NSB Six-Year Capital Improvement Plan that outlines anticipated capital needs over the current year and the next five years.

Although the comprehensive plan’s foundation is state and borough statues and is developed using NSB funding, this comprehensive plan reflects the needs, desires, and goals of Nuiqsut residents. The community’s voice is documented here as a resource for residents to determine the future of their community. It is with this plan that the community acknowledges the needs of the community and asks for those needs.

### 1.3. Past Planning Efforts

**Nuiqsut Background for Planning.** Prepared by Alaska Consultants in 1983, the Nuiqsut Background for Planning functioned much like both a comprehensive plan and a capital plan. It included information on the economy and population, land use, community facilities, and transportation. Detailed facility information and current and future capital needs are contained within this historical document as well.

**2005 Areawide Comprehensive Plan Community Profile.** Prior to developing individual comprehensive plans for each NSB community, the 2005 NSB Areawide Comprehensive Plan included community profiles for each village. The profiles provided background information on each community, including the economy, subsistence, income, housing, infrastructure, and land ownership and land use. They also included community issues that were gathered at a community meeting in 2004. Many issues were similar to the issues the community has voiced more recently, including overcrowding and the need for more housing, protecting subsistence use areas, the need for job training and providing local employment, and a lack of water and wastewater connections to all homes. There have been improvements over the years, however; the cost of power has dropped significantly since the community has been able to utilize natural gas from Alpine and the 1979 Nuiqsut Heritage: A Cultural Plan (Paisaŋich) has been updated with Addendums to reflect more recent circumstances.

**2015 Draft Nuiqsut Comprehensive Plan.** The North Slope Borough began developing comprehensive plans for its communities in 2010. That initial effort was put on hold until 2015 when a draft Nuiqsut Comprehensive Plan was developed. The plan was not adopted; instead, the community expressed interest in updating the Paisaŋich so that it could provide guidance to the comprehensive plan.
Nuiqsut Heritage: A Cultural Plan. During the late 1970s, the NSB Planning Department sponsored development a cultural plan entitled Nuiqsut Heritage: A Cultural Plan, also known as the Paisanjich.³ In the late 1970s, Nuiqsut was a small village of approximately 150 Iñupiat residents who had resettled the area just half a decade earlier. The Paisanjich was developed to assist in protecting the traditional way of life in the face of rapid changes converging on the community. Now, over 40 years later, this village of nearly 500 residents continues to face many unique challenges, demonstrating stability and adaptability over the years.

Addendums to the Paisanjich begin in 2018 with the development of an Ethnographic Addendum. It was commissioned by the City of Nuiqsut to reaffirm the community’s cultural ties to the land and to document both continuity and change since the original Paisanjich was published. Funded the NSB Planning & Community Services Department, the 2020 Land Management Addendum was also developed to document changing conditions since 1979. Both addendums were approved by the IHLC Commission in April 2021 in Resolution 2021-01.

The Ethnography Addendum’s purpose of this update is to reaffirm the community of Nuiqsut’s cultural ties to their land and to document both continuity and change since the Paisanjich was published in 1979. It was not intended as a replacement to the original document. The Paisanjich 2018 Ethnography Addendum notes that the Nuiqsut Traditional Land Use Inventory (TLUI) lists a hundred major settlements and camps that stretch along the coast that follow major drainages inland. In 1977, archeologists inspected and documented 14 of these sites dating from the early 1900s which include sod homes, ice cellars, quarries, graves, warehouses, dog holes, tent rings, refuse piles, and hunting, fishing, trapping, and gathering and food preparation artifacts. These sites provide insight into the history of the People of the Lower Colville River,⁴ the Kuukpikmiut before European contact and through subsequent periods of early exploration, commercial whaling, trading,

“Iñupiat culture is a human manifestation of the land and sea that sustain it. The places that were important long ago continue to be important today, and in these places essentially the same things continue to happen.”

- 1979 Paisanjich


trapping, reindeer herding, and post-World War II military construction. The TLUI is maintained by the NSB and continuously updated as information about traditional, historic and archaeological sites become available.

The Ethnography Addendum also includes a discussion of the community’s cultural landscape, including cultural traditions and land use, circulation, ancestral places, and natural features. It further discusses the forces of change that are converging on the community both that were identified by the original writers of the Paisanich and those that have emerged more recently. Specifically, the original Paisanich discussed the degradation of the environment and ancestral places, decreased resource availability, reduced opportunities to hunt and fish due to regulations, increasing social problems, the loss of privacy, and a general feeling of powerlessness over the nature and pace of future development, all of which are still concerns today. More recent issues raised by the Paisanich Addendum are climate change and its impacts on the landscape, biological and cultural resources, and the people who use those resources and increased marine, air, and terrestrial travel in the region, negatively affecting subsistence activities.

The 2020 Land Management Addendum includes several sections: Objectives that describe the overarching purpose of the Paisanich; Local Initiatives that the community can implement themselves with or without outside partners; Policies that bridge the three leadership entities; and issues that are important to the community that should be addressed in the near term, known as Critical Matters.

The Objectives in the 2020 Land Management Addendum reflect those in the original 1979 Paisanich with one exception. A new objective was added – to portray a unified and consistent vision for the present and future of Nuiqsut, written in full below. The objectives of the Paisanich are:

1) Portray a unified and consistent vision for the present and future of Nuiqsut and its area of influence on behalf of Nuiqsut residents to local, state, and federal governments as well as the oil and gas industry, environmental groups, science research community, and others.

2) Seek preservation of traditional activities to ensure retention and transition of cultural values to future generations.
3) To the greatest extent possible, influence the pace, magnitude, and direction of change to promote stable and beneficial socioeconomic conditions in the village.

4) Seek preservation of the natural environment and wild resources from adverse effects of industrial activities.

5) Confirm the importance of historical, cultural, subsistence resources and values of the village as major conditions in land use planning, development, and operations.

6) Adapt imposed land ownership and jurisdiction to the traditional law of free access and use by the homeland people.

7) Affirm that the village of Nuiqsut and the Kuukpikmiut will continue to access the traditional cultural landscape and live a lifestyle consistent with Inupiat values and subsistence culture long after industry has gone.

The Local Initiatives are strategies that the community itself can implement for its own benefit and to influence its cultural landscape:

1) Maintain consolidated village-centered powers of government, landownership, and administration to protect the village proper and its near environs.

2) Strengthen existing cooperative agreements and administrative techniques and devise new ones that lead to strong village participation in the management of lands and seas beyond direct village control.

3) Continue to seek application of existing regulatory authority, such as North Slope Borough zoning ordinances and state and federal laws, that:
   a. Improve Nuiqsut’s socioeconomic conditions;
   b. Monitor and control environmental pollution and degradation;
   c. Protect natural and cultural resources and values; and
   d. Recognize and respect traditional land use rights and privileges.

4) Seek new authorities and strengthen existing ones that increase the village’s influence on plans and decisions at regional, state, and federal levels.

5) Seek both mitigation measures and impact funding commensurate with industrial effects on the community as well as funding opportunities for local representative entities that benefit the village and its residents.

6) Maintain the role of the cultural coordinator to serve as a communications liaison between the village and outside interests.

7) Require unbiased, fact based, and verifiable science be used in approval processes for new industry planning and development and promote the industry’s use of best management practices in all aspects of their operations.

The Paisanich’s Policies are intended to bridge the divide amongst local leadership entities with diverse missions that serve the interests of, in many cases, duplicate constituents.

1) Municipal service responsibilities and development projects should be based on appropriate technology, and they should be sequenced and seasonally adjusted so that individuals and families have plenty of time for subsistence and other traditional activities.
2) The benefits of proposed capital improvements should be weighed against social, economic, and cultural costs.

3) Corporate business decisions should consider the social and cultural needs of all residents as well as the need for revenue.

4) Profit-making activities should consider potential harm to the lands and waters that comprise the near physical, biological, and cultural resources base of the village.

5) To demonstrate a strong, deliberate, and persuasive voice for residents’ interests, the Iñupiaq values of Paaqjaktautaieeiq (Avoidance of Conflict) and Paammaagiñiq (Cooperation) guide the Tri-lateral and other current and future locally-based entities in identifying the best option(s) or position(s) for the community when interacting with external organizations and interests whenever possible.

6) Employ the use of technology to monitor and protect the environment and wild resources of the region.

The Land Management Addendum identifies nine Critical Matters, issues that Nuiqsut’s management program (administered by the City of Nuiqsut, Native Village of Nuiqsut, and/or Kuukpik Corporation) consider of the utmost importance.

1) Seek Protection standards for land and other resources within the vicinity for the community today and for future generations.

2) Ensure Emergency Preparedness to successfully handle emergency situations in the community and the region.

3) Water Supply protection from nearby oil and gas and related development is crucial for the health and well-being of the community.

4) Joint Land Use Planning with the community, borough, state, and federal governments would ensure that the rural subsistence nature of the community and region is not compromised.

5) Subsistence Access must be maintained, including the Colville River, its tributaries, and overland routes.

6) The need for Climate Change Mitigation and Preparation is due to dramatic changes in temperature, weather patterns, and melting permafrost that are altering ecosystems affecting plants and animals and their habitats, thereby affecting subsistence activities.

7) Assessing Health Impacts and Monitoring effects of air quality, noise pollution, excessive vibrations and other effects resulting from oil and gas development is important for residents’ well-being.

8) Study of Alternative Energy is needed to determine its viability to offset the high cost of energy on the North Slope.

9) Post Industry planning for the eventual departure of industry from the Nuiqsut region.
1.4. Planning Process and Public Involvement

The comprehensive planning process is designed to be transparent and inclusive. The steps for developing this plan are illustrated in Figure 1. It is critical in the development of the Nuiqsut Comprehensive Plan that the residents have abundant and meaningful opportunities to participate, contribute, and review the draft plan. The following public participation tools are used in order to obtain input:

- Public notices posted throughout the village providing notification on meeting dates and locations;
- Meeting and other announcements made on the North Slope Comprehensive Planning Facebook page;
- VHF announcements;
- Provision of informational material during meetings, including maps and comprehensive planning background, and process handouts;
- A community workshop, including an introduction to comprehensive planning and a Strengths, Weaknesses, Opportunities, and Threats (SWOT) exercise was held on May 20, 2021;
- On May 21, 2021, a leadership meeting was held with the City of Nuiqsut, Native Village of Nuiqsut, and Kuukpik Corporation to introduce the comprehensive plan update process and hold a SWOT exercise;
- Participation in numerous City of Nuiqsut Council meetings, Kuukpik Corporation Board meetings, and Native Village of Nuiqsut Tribal Council meetings;
- Participation in Tri-lateral meetings;

![Figure 1: Planning Process Flowchart](image-url)
On May 4, 2022, leadership and community meetings were held to present the public review draft plan and gain additional feedback.

Collaboratively, Nuiqsut residents, village leadership, North Slope Borough Planning Department staff, other NSB employees that provide services in the village, and the Comprehensive Planning Stakeholder Committee representative for Nuiqsut developed this plan. Local village leadership includes the Mayor and City Council members, the Native Village of Nuiqsut Tribal Council President and Council members, the President and Board members of the Kuukpik Corporation, and the NSB Planning Commissioner and Alternate Commissioner representing Nuiqsut.

1.5. Strengths, Weaknesses, Opportunities, Threats Workshop

A SWOT exercise guides a community in identifying its strengths and weaknesses as well as opportunities and threats, which assists with both strategic planning and decision-making. The SWOT exercise is also used to develop the community Vision Statement and provides guidance in developing the goals, objectives, and implementing strategies found in Chapter 2.

The following pages contain the results of the May 20, 2021 community SWOT exercise that was held in Nuiqsut and with community leadership on May 21, 2021. The vision statement from the draft 2015 Nuiqsut Comprehensive Plan and information provided during the SWOT exercise provided the basis for the Vision Statement in Section 1.6 in this chapter.
COMMUNITY STRENGTHS

Community and Family Unity
- Unity of residents to work together to thrive as a community
- Leadership abilities and dedication by residents to participate in governance and protection of the health of residents and the environment
- Families strengthens the family bond and emotional wellbeing
- The enduring family tree—each person knowing who they are in relation to other extended family members and valuing that connection
- Community gatherings
- Community interest and advocating to improve education and building

Subsistence & Traditional Knowledge
- Year-round, seasonal variable availability of subsistence resources of fish, whale, moose, caribou, seals, water fowl, and berries
- Community commitment to the protection of subsistence hunting and lifestyle now and for generations to come
- Traditional diet
- Elder knowledge and the sharing of that knowledge with youth
- Whaling as a community effort
- Historical knowledge
- Subsistence support

Environment
- Studies and survey information
- Native Village of Nuiqsut Air quality report
- Recognizing the community’s commitment to protecting the environment and natural resources around us

Public Facilities & Community Services
- Natural gas-generated electricity/inexpensive energy
- Committed water & sewer employees
- Running water
- Access Road
- City support for whaling freezers
- Police services, areas of improvement
- Health clinics and utilizing nearby services from other entities during emergencies

Education & Training
- Committed teaching staff and principal
- Sunday school for kids
- Community’s support for GED
- Training for boards and councils
- Ability to be able to train our local people in emergency services
Employment

- Job opportunities in the oil & gas industry for motivated people whose subsistence duties do not conflict with industry work schedules
- Community members strengths and knowledge gained from the jobs with entities
- Industry/NSB Job fairs
- Industry
- Coordinating with industry and building relationships to support calendars
- Good neighbor policy with the oil industry
- NSB Mitigation Fund Advisory Committee
COMMUNITY WEAKNESSES

Subsistence & Traditional Knowledge
- Restricted access to traditional hunting grounds by nearby industry
- Facilitating technology transfer of traditional knowledge
- Helicopter activity, airboats and vehicle traffic within the subsistence area “spooks” the caribou and alters their migration patterns away from the village
- Work with oil industry on placement of ramps for subsistence hunting in the correct areas to prevent flooding and other issues
- Communication between elders and youth needs improvement

Public Facilities & Community Services
- No city bus
- No washeteria
- Power outages
- Dust, we need to water roads
- Tundra is showing on the dump road
- No boat dock
- Lack of heaters for water and sewer freeze-ups
- Power plant upgrade is causing problems
- Need for road and boat dock maintenance
- Need gravel for public and private use, particularly for repair of damage due to road subsidence and driveway wear
- Culvert was moved from 2nd Avenue and there is now deep standing water; all roads need hydrology assessments
- Daycare center is not operational and has staffing difficulties, needs to be run locally and facilitate parents
- Post office is too small to accommodate the amount of incoming mail
- Working/current proposed center is small/increase age range to meet village needs, no adequate outdoor play yard
- Septic tanks freeze due to lack of, or failure of, heat trace
- Permafrost thawing and erosion putting water plant and power plant at risk
- Need for more office space
- Need equipment for infrastructure support
- Need activities for kids and indoor recreation for youth and adults

Environment
- Wildlife samples are sent but no communication is received
- Concern that air pollution from oil industry potentially contributes to asthma and respiratory infections in villagers, particularly young children

Housing
- Blocks without houses on the airport side
- Need new housing to relieve severe overcrowding
- Need apartment buildings
- Need adequate housing designed for Arctic environment for all income levels, including working families whose income is above Department of Housing and Urban Development (HUD) low-income criteria
- TNHA housing construction jobs go to out of town people and not to local residents
NUGSUT COMPREHENSIVE PLAN
2022 – 2042

CHAPTER 1: INTRODUCTION

Education and Training
- Lack jobs and training
- Individual’s low motivation for jobs and career training, particularly for jobs in the oil and gas industry/ inability of industry to cope with employee’s subsistence duties and schedules
- School district lack of accountability
- School and teacher housing disrepair and problems (facilities and staff)
- School is overcrowding, staff and space
- Lack of representation on the school board
- Need to bring back DARE officers to the school
- Need a school bus driver
- Iñupiaq language classes are not offered to high school students
- High drop-out rate by high school students/still needs improvement

Employment
- Wildlife studies and survey do not hire locals who know land and water
- Inability of supporting the employees hired by nearby entities to retain their ability to be involved in local meeting and processes

Health
- The village needs health assessments of its residents and wildlife as a baseline as well as regular monitoring
- Desire to eradicate drugs and alcohol use and abuse

Industry
- City being so close to the oil industry
- Light pollution from the oil industry

Government and Cooperation
- Share of NPR-A funds
- North Slope Borough does not lead by example in terms of working relationships, maintaining assets, infrastructure, procurement, etc.
- Lack of understanding of how Borough funds are allocated between the villages and Barrow coupled with a desire to have a more equitable distribution of resources
- Need local decision making on how Borough resources are allocated, rather than “top down” decisions
- NSB Wildlife does not engage with the village about the industry activity and manage the information about the wildlife

Other Weaknesses
- High cost of living, particularly food, cleaning supplies, household essentials, gas
- NSB needs to hold contractors accountable for quality design, materials, and construction work (poor quality heating, sewers and housing systems are examples)
- Need year-round monitoring of spur road activities, particularly with regard to oil spills and damage to the adjacent environment by worker traffic
- Need safe and secure parking at Prudhoe for residents’ vehicles
- Emergency planning and education
COMMUNITY OPPORTUNITIES

Subsistence & Traditional Knowledge
- Provide boat and trailer access to the rivers
- Provide a shared system of boat trailers and trucks to haul boats to the river (for households who do not have those vehicles)

Housing
- Build new arctic climate energy-efficient homes in town
- Native Village of Nuiqsut to get federal funds and knowledge to build new housing, similar to what the Native Village of Barrow has

Education & Training
- Operate job training and offer a broader spectrum of educational opportunities
- Improve interaction between Elders and youth in the school
- Offer vocational rehabilitation
- Need local contractors

Employment
- Job opportunities if we leverage our resources more

Health
- Work with NVN air quality reports and NSB permitting to reduce exposure to the community

Public Facilities & Community Services
- Dredge the silted Puutu Channel to provide improved boat access to the Colville River and to produce gravel for village use
- Operate a day care center
- Fuel division improvements, bathroom isn’t available
- Airport and commercial development and bathroom needed
- Establish a cost-effective dust control system
- Provide a road to the Cross Island area to bring whale meat and muktuk to the village instead of flying it in and to bring whaling supplies to the island
- Provide roads, power, water, sewer, and other utilities to shareholder lots to build new homes
- Maintain runway with paving and other elements to assure emergency medical evacuations, if needed
- Avoid multiple landing strips and air traffic by industry, which disturb subsistence resources and hunters, by having Nuiqsut airport serve as a regional airport, Planning Department permitting
- Provide a natural gas filling station
- Use the NSB terminal for post office
- Provide cultural and recreational activities for youth and adults
- Creation of outdoor recreation and water recreation opportunities
Government & Cooperation
- Stand up against state and federal permitting agencies to prevent sport/trophy hunters within the village subsistence area
- Stand up to state and federal permitting agencies to require mitigation for commercial and industrial development to assure the least possible impact to the community’s way of life
- North Slope Borough Assembly invite local leaders to meet before this comprehensive plan is adopted and before important decisions are made

Other Opportunities
- Introduce local risk management and assess onsite risks in each village
- Develop tourism opportunities and maintain local control of tourism
- Access to DMV for more driver’s license and CDL opportunities
- Need for more drug testing of NSB employees and contractors
COMMUNITY THREATS

**Subsistence & Traditional Knowledge**
- Reduced access to subsistence resources due to oil and gas activities
- Helicopter, vehicular, and airboat activity spooking the caribou and changing their migration routes out of reach of residents
- Off-shore oil and gas exploration could disrupt, disturb, or damage Cross Island whaling
- On the east side of the river, oil companies will build roads; residents will have to go through numerous check points to access subsistence resources
- Oil company gravel roads are too high, narrow, and steep for snow machines to pass and access to subsistence resources is blocked not maintained and become snow blocks
- Increased sport hunting and people harvesting for other uses coming in on highway and waterways negatively impact and scare away caribou, particularly the vanguard herd
- State and federal agencies limiting subsistence harvest (quotas and bans), resulting in future hunting uncertainty
- Nuiqsut has subsistence impacts both onshore and offshore all year
- Continual education and enforcement for contractors during subsistence activities
- Climate change and industrial development effects on the health of rivers and traditional food sources

**Employment**
- Outside jobs attracting the strong community members away from the village
- Outside rules negatively affect local employment
- Job requirements are too strict, discriminate against local hire and disqualify them
- Jobs available do not have training opportunities and journeyman hours
- TNHA housing construction jobs go to out of town people and not to local residents
- Contractors do not train and hire local residents and this becomes an endless cycle; or utilize trained residents who need journeyman hours
- Need local jobs
- Outside contractors not hiring qualified locals
- Transient workers
- Building a relationship that retains the local community’s employment
- Training facility to qualify locals for jobs
- Lack of employment; need more temporary jobs to gain experience to secure permanent jobs
- NSB contractors working here need to hire locals allowing locals to be knowledgeable of what was built and how to maintain it
- Need to train local qualified carpenters

**Environment**
- Climate change and its effects: stream bank erosion, subsidence, change in timing of subsistence wildlife, hazardous ice travel
- Air pollution due to industry discharges (increased flaring gas) into the prevailing winds towards the village
- Decrease in state permit enforcement for environmental protection

**Housing**
- Outside entities are using local housing
- School district needs their own duplexes to open up homes for locals

**Health**
- Alcohol, drugs, and smoking use and abuse
Public Facilities & Community Services

- NSB freeze on the sale of gravel for private lots and driveways cause fire and health emergency personnel to be unable to access people in need
- Since the Alpine development, the NSB CIP funds no longer come to Nuiqsut
- CIP process going on for years but only Barrow benefits. Needs to improve on equity
- Airport hub/expansion for large planes for industry may change the character of the village
- Utilidor freezing up and losing water. NSB should fund to redo water utilities
- Winter freeze-ups and sewer problems
- Remove hazardous material building up
- Nuiqsut has road access, natural gas, opportunity for a pilot project or housing projects
- ASTAC tower by runway is dangerous in foggy and dark conditions
- Need incinerators at the dump and take better care of the dump. Unable to burn quite often due to prevailing winds and being surrounded by industry. Haul metal out and sell
- Modernizing the landfill and TOS unit
- Upgrade roads to prevent tundra damage

Government & Cooperation

- Processes move away and local control is lost
- Need NSB and ASRC leaders to visit during the busy times of the year to see development; improve communication, and visit frequently and unannounced to see the reality
- Continuously educate the decision-makers on local issues and concerns
- More engagement in the community during development season
- Opportunity for a caucus for the NSB and the village, a lot of the concerns can be immediately addressed through the caucus.
- Nuiqsut brings in 90 percent of NSB revenue. Need to reflect that more locally
- Good relationships with the NSB and Nuiqsut Utility Co-op regarding natural gas
- Only one commissioner in a busy village regarding permits and activity. Need to educate all assembly members and commissioners in regards to permitting and local concerns

Other Threats

- Expensive gas/diesel fuel and resulting expensive food and airfare
- No access for local inspection and local incident command center
- PELT program is an opportunity
- Need more police officers
- Need more wildlife enforcement (industry feeding foxes roadside and rabid foxes attacking locals)

Industry

- Oil development too close; potential for an oil spill on water or land and greater air pollution
- Oil industry uses local water supply excessively
- More industry than community members
- Industry needs more regulation enforcement
- Industry relationships and impacts on the community, better representation from Nuiqsut
- Adverse risk of a blowout or a spill
- Build unity with industry so meetings are in Nuiqsut rather than outside the community
- Industry keeps information internal and the community does not have access to it
- Loopholes allow the oil industry to avoid paying bed tax
1.6. Vision Statement

Creating a vision statement for the future of the community is an important part of the comprehensive planning process. Goals, objectives, and implementing strategies are developed to implement the vision that Nuiqsut residents want for the future of the community. The following vision statement was devised from local leadership and resident comments and concerns during the comprehensive planning process.

As residents of Nuiqsut, we continue to seek a healthy community where residents value our strong family ties and embrace our traditional Iñupiat culture, knowledge, and subsistence activities.

We are stewards of the environment, relentlessly advocating for the protection of the waters and lands of our ancestors from degradation, depletion, destruction, and pollution so that the ecosystem is healthy and all who live in and visit Nuiqsut will continue to enjoy its abundant natural resources.

We pass on the traditional knowledge of our land and subsistence resources and activities to our younger generations while embracing compatible modern technologies and contemporary knowledge to aid our residents in maintaining a healthy, safe, and affordable community.

We promote a diverse economy by supporting local businesses and clean industries that provide residents ample employment opportunities that are flexible enough to support seasonal subsistence activities.

We strive to provide enough safe, sanitary, and affordable housing for all ages and income levels, along with quality infrastructure and convenient and reliable community facilities to ensure a high quality of life for all residents.

We approach community-wide decision-making with cooperation and patience achieve collective goals for the community using the Nuiqsut Paisaŋich Cultural Heritage as a guide for development in the village and the region.
1.7. Plan Scope and Organization

As a result of community input, seven goals have been developed for this plan that provide the overall direction for the plan’s implementation, listed below. Objectives for each of these goals and associated strategies for reaching those objectives are included in Chapter 2.

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**Goal 1**  Work together in the best interest of the community when planning and responding to natural resource development and associated land uses with the aim of protecting Nuiqsut residents’ health, the natural environment, and subsistence lands.

**Goal 2**  Preserve, protect, and maintain Iñupiaq traditions and cultural activities.

**Goal 3**  Maintain, protect, and expand community facilities and infrastructure.

**Goal 4**  Support housing quality, variety, and affordability.

**Goal 5**  Maintain and expand community services to provide improved care for residents.

**Goal 6**  Develop a strong and resilient local economy.

**Goal 7**  Seek meaningful intergovernmental and community cooperation and resident participation in decision-making for betterment of all village residents.

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This plan is designed so that readers may focus on (a) specific section(s) of interest, versus reading the plan in its entirety. The eleven chapters of the plan and appendices are organized as follows:

- **Chapter 1** provides the introduction to the plan, including the basis for comprehensive planning.
- **Chapter 2** has the goals of the plan, related objectives, and actions that will help meet those objectives.
- **Chapter 3** provides an overview of both the local and regional governments involved in the administration of the community as well as a discussion of Nuiqsut’s history and language.
- **Chapter 4** includes information on the historical, current, and projected future population of Nuiqsut.
- **Chapter 5** examines the natural environment including the location, vegetation, wildlife, endangered species, contaminated sites, and climate change.
- **Chapter 6** includes discussion of the importance of the subsistence lifestyle to community residents.
- **Chapter 7** examines public facilities, including the water and wastewater system, power generation, solid waste, gravel resources, and communications.
- **Chapter 8** considers housing issues with both current and future needs.
- **Chapter 9** discusses education, health, and the economy in Nuiqsut.
Chapter 10 provides information on land use and zoning in and around the community.

Chapter 11 is a brief history of oil and gas exploration and development on the North Slope, specifically in the National Petroleum Reserve – Alaska (NPR-A) as well as environmental protections, local concerns, and funding.

The references included as footnotes and at the end of the plan identify studies, reports, and other sources of information that aided in developing this plan.

Also included are appendices, which include resolutions of plan support from the community, adaption strategies for climate change impacts, and Alaska Community Profile Maps.

1.8. Consistency with Adopted Plan Policies

The Nuiqsut Paisanich and the Nuiqsut Comprehensive Plan serve different but complementary purposes. As discussed in Section 1.1, a comprehensive plan is a long-range document with a vision for the future that is intended to guide community actions and development. The Paisanich was originally developed in 1979 in response to the rapid changes converging on the community to aid in protecting the traditional way of life. The 2018 Ethnography Addendum and the 2020 Land Management Addendum are not intended to replace the original. Rather, they are meant to provide an updated vantage point for a broad view of the last forty years and what may be on the horizon while preserving the historical perspective of the original document. This comprehensive plan uses the 1979 Paisanich and its 2018 and 2020 addendums as a guide to the concerns expressed by the community and the direction for its future. The North Slope Borough Comprehensive Plan was adopted in 2019 by the NSB Assembly. Like all comprehensive plans, it is designed to guide future development, programs, and investments that align with a community’s vision. The NSB Comprehensive Plan reflects the values and circumstances of the regional community of the North Slope. By its mere existence, the 2019 Plan, as well as its previous iterations have also furthered local self-determination for control of North Slope land and resources.

The North Slope Borough Areawide Comprehensive Plan provides guidance on community development issues at the borough level. Each of the eight NSB community comprehensive plans are standalone documents that represent issues, needs, and interests at the local level. Yet there is consistency across planning documents.

This section has select village planning and development implementing strategies taken from the adopted North Slope Borough Comprehensive Plan to illustrate that the NSB’s long range planning documents and specifically the implementing strategies align with the local village plans, including with this Nuiqsut Comprehensive Plan.

Land Use

- Protect subsistence corridors and hunting and fishing areas through the development of

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Self-Determination

- Proactively involve students and young adults to train future community leaders and convey the importance of community involvement. [Implementing Strategy 2.1.2, page 386]
- Develop a pilot program to create a village planning commission(s), if desired. [Implementing Strategy 2.1.3, page 387]
- Identify ways that villages can have more control over local issues. [Implementing Strategy 2.1.4, page 387]
- Develop stronger relationships between the NSB and village corporations, potentially through memorandums of understanding to further common interests. [Implementing Strategy 2.2.3, page 387]
- Increase partnerships between the NSB, Tribal and city governments, regional governments, Native corporations, and other stakeholder organizations to reduce duplicity in services and increase efficiency. [Implementing Strategy 2.2.5, page 387]
- Develop recommendations for use by outside entities in communicating with village residents that include advance contact and scheduling, meeting consolidation to avoid meeting fatigue, and consideration of village subsistence activities and other local priorities and activities. [Implementing Strategy 2.3.1, page 388]
multiple heirs. [Implementing Strategy 3.4.4, page 390]

- Investigate the costs and feasibility of establishing homeless shelters in Utqiagvik and the villages. [Implementing Strategy 3.5.1, page 390]
- Support transitional homes for families that experience a fire, flood, or other emergency that does not allow them to live in their home. [Implementing Strategy 3.5.2, page 390]

**Transportation**

- Investigate ways to entice additional airlines to serve North Slope villages in an effort to increase competition, choice, and efficiency, and reduce cost. [Implementing Strategy 4.1.1, page 391]
- Support community dust control efforts and seek new and innovative methods to suppress excessive dust to further public health. [Implementing Strategy 4.1.4, page 391]
- Actively participate in and promote public review and input into the writing, review, and approval of any transportation or utility corridors, plans, or routes undertaken by the borough, state, or federal government within the NSB. [Implementing Strategy 4.2.1, page 392]

**Iñupiaq Language and Subsistence**

- Require that master plans, rezones, and applicable permits incorporate aspects of traditional and contemporary local knowledge into a project’s planning and design. [Implementing Strategy 5.1.7, page 393]
- Recognize the importance of traditional camps and cabins, and associated subsistence activities when managing public lands and planning for leasing, exploration, and development of petroleum and mineral resources. [Implementing Strategy 5.2.1, page 394]
- Encourage more research and coordination on studying and mitigating any potential effects of future road corridors on caribou migration. [Implementing Strategy 5.2.5, page 394]
- Encourage oil companies to allow subsistence users access to oil fields roads and to limit public access. [Implementing Strategy 5.2.6, page 394]
- Develop formal agreements between landowners and land managers to provide subsistence access across private, state, and federal lands. [Implementing Strategy 5.2.9, page 395]

**Economic Development**

- Investigate burgeoning employment opportunities due to improved fiber optic communications. [Implementing Strategy 6.1.5, page 395]
- Continue to invest in creating childcare centers in all North Slope communities to assist working parents. [Implementing Strategy 6.1.9, page 396]

**Public Infrastructure and Services**

- Facilitate shared use of village facilities to benefit all village residents, such as community use of school swimming pool and other recreational space. [Implementing Strategy 7.1.4, page 397]
- Evaluate alternative options to gravel to aid in fulfilling community gravel needs. [Implementing Strategy 7.1.12, page 397]
- Assist local efforts to secure search and rescue facility space in the villages. [Implementing Strategy 7.2.7, page 398]
Partnerships
- Investigate the need and feasibility to establishing an additional service area to support expansion into ANWR 1002 Area for new oil exploration and production. [Implementing Strategy 8.1.1, page 398]
- Maintain good neighbor policies and conflict avoidance agreements: maintain access to subsistence areas. [Implementing Strategy 8.2.1, page 399]
- Maintain good neighbor policies and conflict avoidance agreements: Encourage input from affected residents on contents of agreements. [Implementing Strategy 8.2.2, page 399]
- Incorporate local concerns and suggestions in exploration permit approvals and denials, and document measure that have been successful or unsuccessful. [Implementing Strategy 8.3.4, page 399]

Energy
- Construct redundant energy development and distribution to ensure continuity of service. [Implementing Strategy 9.1.4, page 400]
- Cultivate partnerships with public/private development to foster development that would provide connection to regional power. [Implementing Strategy 9.2.2, page 400]
- Implement a program to regularly inspect and weatherize buildings for maximum energy savings. [Implementing Strategy 9.3.2, page 400]
- Utilize waste heat recovered from community power generation. [Implementing Strategy 9.3.3, page 400]

Environment
- Coordinate with resource agencies to identify and map watersheds, wetlands, and traditional trails in the North Slope Borough that are important for subsistence. [Implementing Strategy 10.1.1, page 401]
- Evaluate existing zoning and land use regulations for effectiveness in protecting sensitive areas, including establishing a zoning district(s) specifically for subsistence and/or special habitats. [Implementing Strategy 10.1.2, page 401]

Education
- Continue developing daycare centers in the villages to offer a strong academic foundation through pre-kindergarten education. [Implementing Strategy 11.2.4, page 402]
- Improve Native language fluency through partial or full immersion programs from pre-kindergarten through high school. [Implementing Strategy 11.3.3, page 403]
- Encourage the North Slope Borough School District and educators to further incorporate traditional and cultural values throughout the school curricula. [Implementing Strategy 11.3.5, page 403]
- Integrate Elders into school activities through shared lunches, invitations to speak with classes, and involvement in student projects. [Implementing Strategy 11.3.6, page 403]

Social Services
- Seek increased access to recreational facilities in the villages, especially at the schools, to promote physical activity. [Implementing Strategy 12.1.1, page 404]
- Focus resources on providing for the aging population as this group increases. [Implementing Strategy 12.4.1 page 405]
A comprehensive plan’s vision statement and goals are critical to effective long-range planning. Translating the vision statement and goals into implementable actions is the trademark of comprehensive planning. In this plan, each goal is accompanied by one or more objectives that suggest how the community might achieve the intent and substance of its goal. Each objective is followed by one or more strategies that describe how the action could be implemented. Implementing strategies may establish how a specific course of action could be accomplished by village residents, village leadership, NSB Administration and staff, NSB legislators, development permitting and funding agencies, and/or other entities. For many of the strategies, the community is responsible for initiation and seeking assistance from other entities.

Because this comprehensive planning effort reflects concerns and issues confronting the community overall, the goals presented here are not in priority order.

### Goals

Goals are broad statements that describe long-term desired outcomes.

### Objectives

Objectives provide more specific information of what can be done to achieve a goal.

### Implementing Strategies

Implementing Strategies describe specific steps that can be taken to reach an objective.
Village leadership participating in and contributing to the formation of the plan’s development include members of the Nuiqsut City Council, the Nuiqsut Tribal Council, Kuukpik Corporation Board Members, village Elders, hunters, local North Slope Borough School District (NSBSD) staff, and NSB staff providing services in the village. However, in reference to the following implementation strategies, village leadership generally refers to the Nuiqsut City Council, Native Village of Nuiqsut Tribal Council, and Kuukpik Corporation Board Members. In some cases, not all of the village leadership entities will be involved in the implementation strategy due to expertise or capacity. There are some strategies that are not within the purview of the community’s leadership, yet the primary responsible party(ies) is one or more of the community’s leadership organizations. The reason for this is so that community advocates for a project, program, or initiative to move it forward rather than placing that responsibility on another entity that may or may not fully understand the need and immediacy of an issue. The North Slope Borough Planning & Community Services Department’s Community Planner is available to assist the Nuiqsut community in implementing the goals included in this plan.

**Goal 1** Work together in the best interest of the community when planning and responding to natural resource development and associated land uses with the aim of protecting Nuiqsut residents’ health, the natural environment, and subsistence lands.

**Goal 2** Preserve, protect, and maintain Iñupiaq traditions, cultural activities, and subsistence harvests.

**Goal 3** Maintain, protect, and expand community facilities and infrastructure.

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**Goal 5** Maintain and expand community services to provide improved care for residents.

**Goal 6** Develop a strong and resilient local economy.

**Goal 7** Seek meaningful intergovernmental and community cooperation and resident participation in decision-making for betterment of all village residents.
Goal One

Work together in the best interest of the community when planning and responding to natural resource development and associated land uses with the aim of protecting Nuiqsut residents’ health, the natural environment, and subsistence lands.

As natural resource development continues in the Arctic and extends closer to Nuiqsut each passing year, it is important as it has ever been to work collaboratively to ensure the protection of residents’ health from poor air quality and noise pollution, especially the elderly and children, the community’s most vulnerable populations. Protecting the natural environment is critical for both sustaining the Nuiqsut’s subsistence needs and for its own intrinsic value.

Objective One

Use updated and comprehensive data about the natural environment to support informed decision-making and establish regulatory and policy measures to protect resident health and the natural environment when and where possible.

Strategy 1.1.1 Advocate for permit stipulations that address public health generally and air quality specifically with the North Slope Borough and state and federal permitting agencies.

Responsible Party: City of Nuiqsut, Native Village of Nuiqsut
Assistance From: NSB Planning, DNR, BLM

Strategy 1.1.2 Review annual industry reports on sensitive natural environments such as wetlands and vegetation and critical habitats / nesting areas of threatened and endangered species, air quality, water quality, etc. Seek additional data and sources to confirm and supplement industry data.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife, Industry

Strategy 1.1.3 Document current and historical traditional knowledge of wildlife habitat, migratory patterns, weather, ice conditions, etc., and communicate that knowledge to NSB, state and federal resource management agencies and appropriate private entities.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife
Objective One (continued)
Use updated and comprehensive data about the natural environment to support informed decision-making and establish regulatory and policy measures to protect the natural environment when and where possible.

Strategy 1.1.4  Document significant environmental concerns including accelerated erosion, foreign vessel sightings, ocean dumping, tundra fires, invasive species, expanding or reducing freshwater lakes, rapid changes to wildlife populations, etc. occurring within the Nuiqsut area of influence and select a person or position in the community to be the keeper of this record. Use the record to secure funding for scientific research and as reference for public comment response to development projects.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife

Strategy 1.1.5  Seek special protections from industry and cruise ship traffic for areas of particular importance to the community for subsistence harvesting, including but not limited to Fish Creek Bay, Camden Bay, and Cross Island.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife, NSB Planning

Strategy 1.1.6  Advocate for research and coordination on studying and mitigating effects of natural resource extraction activities on migration patterns.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife

Strategy 1.1.7  Seek research on the effect of invasive species as the Arctic experiences increased maritime traffic.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife

Strategy 1.1.8  Review and recommend modification to the North Slope Borough Municipal Code as needed to further protect subsistence lands, including establishing a subsistence zoning district.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Planning, NSB Wildlife

Strategy 1.1.9  Record airborne dust over time to understand impacts of new gravel roads in the region. Should an increase occur in airborne dust, work with industry to institute dust control measures.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Planning, NSB Public Works, Industry

Strategy 1.1.10 Become involved and seek continuous updates from the NSB working group formed to address fish mold in the Colville River.
Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife
Objective One (continued)
Use updated and comprehensive data about the natural environment to support informed decision-making and establish regulatory and policy measures to protect the natural environment when and where possible.

Strategy 1.1.11 Seek funding from industry to compensate residents for increased subsistence expenses due to industry presence, such as a fund for shipping sick fish for testing and additional funding for subsistence hunters who are traveling greater and greater distances.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Wildlife, NSB Planning

Objective Two
Seek effective and consistent coordination and communication regarding industry activities in the region.

Strategy 1.2.1 Provide guidance to industry and its contractors on the education that should be provided to non-borough residents that travel to the region about subsistence resources and how to minimize their impact to these resources. One source should be the Nuiqsut Paisanich.

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Planning

Strategy 1.2.2 Continuously review the Nuiqsut Paisanich and its addendums, update or supplement as needed to provide clear communication on local needs and expectations for future development.

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB IHLC, NSB Planning

Strategy 1.2.3 Coordinate with permitting agencies and NSB to require industry to present projects, activities, and findings regularly to the community and in the community.

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Planning, BLM, DNR

Strategy 1.2.4 Develop formal agreements between landowners and land managers to provide subsistence access across private, state, and federal lands.

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Planning

Strategy 1.2.5 Coordinate closely with NSB, state, and federal regulators to ensure that village residents’ concerns are considered and addressed in oil and gas exploration or development.

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Planning, DNR, USFWS, BLM
Objective Two (continued)
Seek effective and consistent coordination and communication regarding industry activities in the region.

Strategy 1.2.6 Work with NSB and permitting agencies to include stipulations to minimize activities that have the potential to disturb wildlife and that alert residents before wildlife-disturbing activities take place.
*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Planning, NSB Wildlife, DNR, USFWS, BLM*

Strategy 1.2.7 Vigorously pursue inclusion in the notification and decision-making process for projects within the area of influence before permits are issued and provide comments on all projects that affect the community and its subsistence lands.
*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Planning, NSB Wildlife, DNR, USFWS, BLM*

Strategy 1.2.8 Work with the North Slope Borough Planning & Community Services Department to hire a permit coordinator that is a resident of Nuiqsut and lives in the community.
*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Planning, NSB Mayor’s Office*

Strategy 1.2.9 If air quality is measured to be at unhealthy levels, request immediate notification from industry so residents can take steps to protect their respiratory health. Require that air quality measurements are made public on a daily basis.
*Responsible Party: Native Village of Nuiqsut*
*Assistance From: NSB Planning, NSB Health, BLM, DNR, Industry*

Strategy 1.2.10 Encourage industry to utilize gravel sources that are not within the prevailing wind corridor to protect the community’s respiratory health.
*Responsible Party: Native Village of Nuiqsut*
*Assistance From: NSB Planning, NSB Health, DNR, BLM, Industry*

Strategy 1.2.11 Encourage industry to evaluate the potential reclamation or storage of natural gas instead of burning it during flaring events.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik*
*Assistance From: NSB Planning, NSB Health, DNR, BLM, Industry*

Strategy 1.2.12 Work with the NSB to fund and construct a natural gas storage facility.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik*
*Assistance From: NSB CIPM, NSB PW*
Objective Three
Remediate contaminated sites within the community and the area of influence.

Strategy 1.3.1 Coordinate with NSB, the State of Alaska, and the federal government on outstanding contaminated sites in the Nuiqsut area and seek remediation funding.
Responsible Party: Native Village of Nuiqsut, North Slope Borough
Assistance From: ADEC, DOD, NSB

Strategy 1.3.2 Coordinate with NSB, the State of Alaska, industry, and the state and federal governments on ensuring that plans for industry’s eventual departure are in place, including the timing, expectations, process, and funding for Decommissioning, Removal, and Restoration (DR&R) activities.
Responsible Party: City of Nuiqsut, Kuukpik Corporation, Native Village of Nuiqsut, North Slope Borough
Assistance From: DNR, BLM, NSB Planning, NSB Mayor’s Office, ASRC
Goal Two

Preserve, protect, and maintain Iñupiaq traditions, cultural activities, and subsistence harvests.

Subsistence is a way of life for most Nuiqsut residents. It is critical that both traditional knowledge and natural resources are protected for current and future generations. Hunting, fishing, and gathering, understanding of the land, air, and waters, being part of cultural activities and events, and language use and preservation are all part of the Iñupiaq way of life.

Objective One
Sustain, maintain, and promote the indigenous and sovereign lifestyle.

Strategy 2.1.1 Incorporate the Iñupiat Heritage, Language, and Culture Department oral historian(s) in documenting and promoting the history and culture of the Nuiqsut community.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut*

*Assistance From: NSB IHLC*

Strategy 2.1.2 Have students conduct interviews with community Elders to hear and document stories of their youth.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Nuiqsut Trapper School*

*Assistance From: NSB IHLC*

Strategy 2.1.3 Develop a story night for community members to share cultural stories to the community.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut*

*Assistance From: NSB IHLC*

Objective Two
Protect subsistence rights and activities.

Strategy 2.2.1 Actively include the community’s youth to learn about land use regulations, protecting subsistence rights, land management, and interfacing with regulatory entities.

*Responsible Party: Native Village of Nuiqsut*

*Assistance From: NSBSD, NSB Planning, NSB Wildlife, ADFG*
Objective Two (continued)
Protect subsistence rights and activities.

Strategy 2.2.2 Work with the Alaska Department of Fish and Game and state and federal land managers to reduce effects on subsistence activities from outside sport and commercial hunting and fishing activities, including documenting the sport and commercial hunting activities that are occurring around the community.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Planning, NSB Wildlife, ADFG, DNR, BLM

Strategy 2.2.3 Request free annual and biannual Alaska Department of Fish and Game regulations books and Federal Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska for all school children. Request free training and educational opportunities provided by the Department of Fish and Game and Federal Subsistence Management Board.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSBSD, NSB Wildlife, ADFG

Strategy 2.2.4 Work with industry to advocate for resident use of industry roads for subsistence. Document areas of inaccessibility due to snow blocks, steep ramps, fencing, etc. and provide to the NSB Planning and Community Services Department.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSBSD, NSB Wildlife, ADFG

Strategy 2.2.5 Identify subsistence cabins that may be vulnerable to damage from thawing permafrost, fire, erosion, and/or flooding and consider appropriate mitigating action(s).

Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB Planning, NSB IHLC

Strategy 2.2.6 Actively seek new information and plan for changes in subsistence harvests.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Planning, NSB IHLC, City of Nuiqsut, Kuukpik

Strategy 2.2.7 Develop a communication system to coordinate subsistence hunting between different North Slope villages.

Responsible Party: Native Village of Nuiqsut
Assistance From: NSB Planning, NSB IHLC, City of Nuiqsut, Kuukpik

Strategy 2.2.8 Work closely with the NSB Planning Department and Alaska Department of Fish to review and revise existing regulations for sport hunting and enforce the regulations more stringently.

Responsible Party: Native Village of Nuiqsut, KSOP
Assistance From: NSB Planning, ADFG, City of Nuiqsut, Kuukpik
Objective Two (continued)
Protect subsistence rights and activities.

Strategy 2.2.9  Seek to educate commercial outfitters on appropriate and respectful hunting practices to alleviate issues with sport hunters disturbing subsistence hunters and caribou migration.
Responsible Party: Native Village of Nuiqsut, KSOP
Assistance From: NSB Planning, ADFG, City of Nuiqsut, Kuukpik

Strategy 2.2.10  Work with industry to determine facility and other improvements could be made for subsistence hunting safety.
Responsible Party: Native Village of Nuiqsut, KSOP
Assistance From: NSB Planning, City of Nuiqsut, Kuukpik, BLM, DNR, Industry

Objective Three
Facilitate preservation of the Iñupiaq language through improving Native language fluency.

Strategy 2.3.1  Incorporate an Iñupiat language immersion program in the daycare center when it reopens by incorporating fluent or semi-fluent community Elders on a regular basis.
Responsible Party: Native Village of Nuiqsut and City of Nuiqsut
Assistance From: NSB Health, NSB IHLC

Strategy 2.3.2  Encourage fluent and semi-fluent Native speakers to speak Iñupiaq at home, especially to children.
Responsible Party: Native Village of Nuiqsut and City of Nuiqsut
Assistance From: NSB IHLC, Kuukpik Corporation

Strategy 2.3.3  Advocate for expanding the NSBSD Iñupiaq Immersion Program. The program could be incorporated into classes other than language study and expanded to include all students at Trapper School.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation, and Nuiqsut Trapper School
Assistance From: NSB Mayor’s Office, NSB IHLC

Strategy 2.3.4  Continue and expand the use of the Rosetta Stone program for language preservation and develop Native language education programs for adults.
Responsible Party: Native Village of Nuiqsut and City of Nuiqsut
Assistance From: NSB IHLC

Strategy 2.3.5  Develop a program to pair young children with fluent speakers to speak only in Iñupiaq, especially in cultural activities and teaching subsistence.
Responsible Party: Native Village of Nuiqsut and City of Nuiqsut
Assistance From: NSB IHLC
Objective Three (continued)
Facilitate preservation of the Iñupiaq language through improving Native language fluency.

Strategy 2.3.6  Develop and use games to promote Iñupiaq language learning.
*Responsible Party: Native Village of Nuiqsut and City of Nuiqsut
Assistance From: NSB IHLC, NSB Mayor’s Office

Strategy 2.3.7  Seek funding to revitalize language that would fund content, training, and teachers, and opportunities to teach and use Iñupiaq, including camps, community newspaper/newsletter, storytime, etc.
*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSBSD, NSB Grants, NSB Mayor’s Office, NSB IHLC
Goal Three

Maintain, protect, and expand community facilities and infrastructure.

Nuiqsut has a significant amount of network infrastructure, community facilities, and transportation systems, including a gravel road network, piped water and wastewater systems, electric power, and an airport runway. It is important to maintain this infrastructure and expand when needed for resident quality of life.

Objective One
Continue to maintain water, wastewater, electric power, and other facilities in good operating condition.

Strategy 3.1.1 Identify utilities and community facilities that may be vulnerable to damage caused by climate-related impacts including melting permafrost, fire, erosion, and/or flooding, including the water tank, water treatment plant, and power plant. Consider appropriate action(s), potentially including facility relocation.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Public Works*

Strategy 3.1.2 NSB and community leadership form and maintain an active Local Emergency Planning Committee (LEPC) to manage hazard mitigation planning and preparedness. The Committee will monitor, update as needed, and implement the Hazard Mitigation Plan to prepare for and respond to supply chain challenges, airlines disruptions, housing and health needs during a pandemic, redundant facilities during unplanned outages, flooding, fires, pests, and other hazards. The Committee will also be engaged in the development of the Community Emergency Response Plan (CEMP) and evaluate past hazards and responses to adequately prepare for potential future disasters.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB A&F Risk Management*

Strategy 3.1.3 Develop emergency response and hazard mitigation plans concurrent with the NSB CEMP development to ensure that the community is well-prepared in the event of an emergency.

*Responsible Party: Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB A&F Risk Management*
Objective One (continued)
Continue to maintain water, wastewater, electric power, and other facilities in good operating condition.

Strategy 3.1.4 As practicable, locate, design, and construct needed community facilities, such as snow fences or landfill sites, in such a way as to avoid conflicts with wildlife habitats and migration periods and patterns.
Responsible Party: NSB Public Works, NSB CIPM
Assistance From: City of Nuiqsut

Strategy 3.1.5 Develop a village-specific adaptation plan identifying hazards associated with the thawing of permafrost in and near the village and other climate-related impacts on the environment that are likely to affect community infrastructure with options for counteracting impacts or avoiding hazards.
Responsible Party: City of Nuiqsut
Assistance From: NSB A&F Risk Management, NSB PW, NSB CIPM

Strategy 3.1.6 Monitor ice cellars, record environmental conditions like humidity and temperature, and note changes throughout the food storage season.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut
Assistance From: NSB A&F Risk Management, NSB IHLC

Strategy 3.1.7 Identify storage needs for subsistence foods to determine how many ice cellars and/or community freezers are needed and seek funding for construction or purchase.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut
Assistance From: NSB A&F Risk Management, NSB IHLC, NSB Grants

Strategy 3.1.8 Implement Energy Audits on Nuiqsut Trapper School, NSB facilities, and other buildings as needed for minimize utility costs and save energy.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Public Works, NSB Health, NSBSD

Strategy 3.1.9 Assess school infrastructure, equipment, and supply needs and seek funding for upgrades, such as for additional indoor freezers, more plug-ins for car heaters, regular maintenance, and major renovations as needed.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSBSD, NSB CIPM, NSB Public Works, NSB Mayor’s Office

Objective Two
Maintain and improve the transportation network.

Strategy 3.2.1 Work with the North Slope Borough and industry to seek a long lasting, cost-effective road hardener system to mitigate dusty roads during summer months that can contaminate drying fish and meat and affect the respiratory health of residents.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, NSB CIPM, Industry
Objective Two (continued)
Maintain and improve the transportation network.

Strategy 3.2.2
Examine roads where safety could be improved through signage and install signs where needed.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, NSB CIPM

Strategy 3.2.3
Examine culverts and maintain adequate drainage of all residential properties, especially during and after spring ice breakup. Keep materials on-hand to maintain or repair culverts as-needed.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, NSB CIPM

Strategy 3.2.4
Investigate additional funding opportunities for road and utility development from Bureau of Indian Affairs, State of Alaska, Denali Commission, the U.S. Department of Housing and Urban Development, and federal transportation funds.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, NSB A&F Grants, NSB CIPM

Strategy 3.2.5
Coordinate with the NSB to have the CWAT program engage with the community on needs and effects of the program, if any.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB Planning

Strategy 3.2.6
Investigate the feasibility of providing regularly scheduled public transportation services and actively pursue NSB Capital Improvement Program funding for a community bus.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB Public Works, NSB Health, NSB CIPM

Strategy 3.2.7
Proactively engage with NSB and the State of Alaska Department of Transportation and Public Facilities (DOT&PF) on planned projects, project prioritization, policies, and studies.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, DOT&PF

Strategy 3.2.8
Maintain a list of wetlands restoration projects to provide to industry as ways to offset their impact to wetlands.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSB PW, DNR, BLM, DOT&PF
Objective Three
Seek expansion and upgrade of infrastructure where needed.

Strategy 3.3.1 Seek an expansion or relocation of the U.S. Post Office due to increasing volume of mail arriving in the community.
*Responsible Party: City of Nuiqsut*
*Assistance From: U.S. Postal System, NSB PW, NSB CIPM, NSB A&F Grants, State of Alaska, Native Village of Nuiqsut, Kuukpik Corporation*

Strategy 3.3.2 Expand the water and wastewater system to blocks 7A, 9, and 10.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: NSB Public Works, NSB CIPM, NSB A&F Grants, State of Alaska*

Strategy 3.3.3 Extend roads, power connections, natural gas utilities, and water and wastewater service to the subdivision south of the airport to facilitate the development of new housing development.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: NSB Public Works, NSB CIPM, NSB A&F Grants, State of Alaska*

Strategy 3.3.4 Seek funding for a boat ramp to the main Colville River channel.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: NSB Public Works, NSB CIPM, NSB A&F Grants, State of Alaska, Kuukpik Corporation*

Strategy 3.3.5 Seek funding to replace the cemetery fence, provide a gravel parking area, procure maintenance equipment, and determine remedies for flooding.
*Responsible Party: City of Nuiqsut*
*Assistance From: NSB Public Works, NSB CIPM, NSB A&F Grants, State of Alaska, Native Village of Nuiqsut, Kuukpik Corporation*

Strategy 3.3.6 Pursue funds to construct a maintenance shop for the City of Nuiqsut.
*Responsible Party: City of Nuiqsut*
*Assistance From: NSB A&F Grants Division, Native Village of Nuiqsut, Kuukpik Corporation*

Strategy 3.3.7 Investigate costs and locations for a facility for community events and other recreational needs, including on City-owned land or at the school and seek design and construction funds.
*Responsible Party: City of Nuiqsut*
*Assistance From: NSB A&F Grants Division, Native Village of Nuiqsut, Kuukpik Corporation, NSBSD, NSB CIPM*
Objective Three (continued)
Seek expansion and upgrade of infrastructure where needed.

Strategy 3.3.8 Investigate the feasibility of developing a city-owned gravel source for local use.
  Responsible Party: City of Nuiqsut
  Assistance From: NSB A&F Grants Division, Native Village of Nuiqsut, Kuukpik Corporation, NSB Planning

Strategy 3.3.9 Coordinate with the NSB Grants Division to seek funding for upgrades to the city-owned volunteer Search & Rescue facility.
  Responsible Party: City of Nuiqsut
  Assistance From: NSB A&F Grants Division, NSB Search & Rescue

Strategy 3.3.10 Conduct a facility space needs study for Nuiqsut Trapper School.
  Responsible Party: Nuiqsut Trapper School
  Assistance From: NSBSD
Goal Four

Support housing quality, variety, and affordability.

Safe, healthy, stable, and access to housing are important factors in quality of life. There is a severe housing shortage across the North Slope, with multiple generations of families living in overcrowded conditions. Additionally, many homes need weatherization improvements, basic home repairs, and air quality assessments to ensure healthy living conditions. Yet these assessments and repairs are difficult to obtain in a remote village like Nuiqsut.

Objective One
Seek comprehensive understanding of housing issues.

Strategy 4.1.1  Undertake a lot-by-lot study to determine ownership status issues, safety needs, viability of property to be used for infill housing as appropriate, etc.
Responsible Party:  Native Village of Nuiqsut
Assistance From:  City of Nuiqsut, NSB Housing, NSB Planning, TNHA

Strategy 4.1.2  Assess the need for housing resources to support those with unexpected emergencies.
Responsible Party:  Native Village of Nuiqsut
Assistance From:  City of Nuiqsut, NSB Housing, NSB Planning, TNHA

Objective Two
Coordinate housing-related activities and resources.

Strategy 4.2.1  Prepare one housing plan for Nuiqsut as a proactive planning resource for multiple agencies to ensure housing is available for all levels and income brackets.
Responsible Party:  Native Village of Nuiqsut, City of Nuiqsut
Assistance From:  NSB Housing, TNHA, NSB Planning

Strategy 4.2.2  Analyze existing housing programs and efforts within different entities to determine gaps and duplicative efforts. Set up a housing coordination committee comprised of, for example, village leadership, homeowners, TNHA, etc. to coordinate housing activities.
Responsible Party:  Native Village of Nuiqsut
Assistance From:  City of Nuiqsut, NSB Housing, NSB Planning, TNHA
Objective Two (continued)
Coordinate housing-related activities and resources.

Strategy 4.2.3  Promote financial literacy programs offered by TNHA, lenders, and non-profits that help prepare residents for homeownership.
Responsible Party: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: TNHA, NSB Housing, NSB Planning

Strategy 4.2.4  Work with the NSB School District to promote financial literacy programs offered by TNHA, lenders, and non-profits that help prepare residents for homeownership.
Responsible Party: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, TNHA, NSB Housing, NSB Planning

Strategy 4.2.5  The Native Village of Nuiqsut should seek guidance in managing its housing programs from the TNHA.
Responsible Party: Native Village of Nuiqsut
Assistance From: TNHA

Objective Three
Seek ways to reduce costs of constructing housing to facilitate greater affordability and alleviate overcrowding.

Strategy 4.3.1  Encourage, support, and seek funding sources to construct multi-family buildings, accessory residential dwelling units (like an apartment over a garage, smaller detached home on the same lot, etc.) to alleviate the overcrowded conditions and provide more affordable options through the designation of specific locations for these buildings.
Responsible Party: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, TNHA

Strategy 4.3.2  Research the feasibility of ordering, delivering, and assembling pre-cut kit houses, 3D printed homes, or modular houses.
Responsible Party: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, TNHA

Strategy 4.3.3  Explore funding opportunities for Tribal housing authorities, elder housing, and low-income housing, such as federal and state grants.
Responsible Party: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, NSB Planning, TNHA, AHFC, HUD

Strategy 4.3.4  Develop more effective collaborations and partnerships to make effective use of the winter ice road to reduce the cost of living and availability of goods.
Responsible Party: City of Nuiqsut
Assistance From: Native Village of Nuiqsut, NSB Housing, NSB Planning, NSB PW
Objective Four
Seek quality housing through new construction and renovations.

Strategy 4.4.1  Seek grant funds to further support retrofit weatherization efforts like the former NSB RELI Program (Residential and Employment Living Improvement), passive ventilation systems, and other alternative building techniques to reduce energy consumption in existing houses and reduce costs for homeowners.
Responsibility: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, TNHA, NSB PW, NSB CIPM, AHFC, HUD

Strategy 4.4.2  Identify homes that may be vulnerable to damage from thawing permafrost, fire, erosion, and/or flooding and consider appropriate mitigating action(s).
Responsibility: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, TNHA, NSB PW, NSB CIPM

Strategy 4.4.3  Investigate the feasibility of a program that provides housing maintenance assistance for homeowners, especially elders, and sells supplies for housing maintenance at or near cost to facilitate affordability.
Responsibility: Native Village of Nuiqsut
Assistance From: City of Nuiqsut, NSB Housing, TNHA, NSB Public Works, NSB CIPM

Strategy 4.4.4  Construct dedicated teacher housing and return current teacher housing back to the community.
Responsibility: Native Village of Nuiqsut, City of Nuiqsut
Assistance From: NSBSD, Trapper School, NSB CIPM, NSB Housing, TNHA
Goal Five

Maintain and expand community services to provide improved care for residents.

To facilitate both physical and social well-being, space for activities and social gatherings is needed. Quality social services, health care services, and community preparedness are essential to the overall well-being of the community.

Objective One
Plan for current and future health and social service needs.

Strategy 5.1.1 Schedule regular evaluations and assessments of clinic facility and equipment to ensure that the current needs of the community are being met.
Responsible Party: NSB Health
Assistance From: NSB CIPM, IHS, City of Nuiqsut, Native Village of Nuiqsut

Strategy 5.1.2 Evaluate the current health clinic facility and equipment against both current and future residents needs and proactively plan for repairs, renovations, and/or expansion.
Responsible Party: NSB Health
Assistance From: NSB CIPM, IHS, City of Nuiqsut, Native Village of Nuiqsut

Strategy 5.1.3 Investigate the feasibility of hosting visiting doctors to provide health care in-person, especially near the beginning of the school year to conduct annual physicals for students.
Responsible Party: Native Village of Nuiqsut, Trapper School
Assistance From: NSB Health, IHS, City of Nuiqsut

Strategy 5.1.4 Investigate the options for both mental and physical health support and resources, such as traveling therapists, teleconference or video appointments, and making sure mental health information and resources are readily available at the health clinic.
Responsible Party: Native Village of Nuiqsut, Trapper School
Assistance From: NSB Health, IHS, City of Nuiqsut

Strategy 5.1.5 Support and accommodate drug and alcohol education and suicide prevention education in the community.
Responsible Party: Native Village of Nuiqsut, Trapper School
Assistance From: NSB Health, IHS, City of Nuiqsut
Objective One (continued)
Plan for current and future health and social service needs.

Strategy 5.1.6  As a condition of NSB permit approval for activities that exceed healthy air quality levels, require funding for researching air quality issues in the Nuiqsut and/or financial assistance for nebulizers, air filtration system for public facilities, etc. to offset dust impacts.

*Responsible Party: Native Village of Nuiqsut*
*Assistance From: NSB Health, NSB Planning, City of Nuiqsut, DNR, BLM, HIS, Industry*

Strategy 5.1.7  Seek funding and training for certifications to reopen the daycare.

*Responsible Party: City of Nuiqsut*
*Assistance From: NSB Health, NSB Planning*

Strategy 5.1.8  Encourage regular cancer screening for residents and coordinate with the NSB Health & Social Services Department and local health clinic to facilitate access to physicians.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Uyagagvik Health Clinic*
*Assistance From: NSB Health*

Strategy 5.1.9  Determine the reasons that the ambulance is often unavailable when needed and enact policies or other measures to ensure that the ambulance and drivers are available in an emergency.

*Responsible Party: NSB Nuiqsut Fire Department, Uyagagvik Health Clinic*
*Assistance From: NSB Health, NSB Fire Department*

Objective Two
Ensure effective community emergency preparedness.

Strategy 5.2.1  Coordinate hazard vulnerability assessments with the NSB.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: NSB A&F Risk Management, NSB CIPM, NSB Public Works, NSB Planning*

Strategy 5.2.2  Disseminate information and tools, such as family disaster supply kit contents, to residents and businesses about disaster preparedness to protect both people and assets.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: Kuukpik Corporation, NSB A&F Risk Management*

Strategy 5.2.3  Prepare for disruptions to the healthcare, travel, and delivery of goods to the community.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut*
*Assistance From: NSB A&F Risk Management, NSB Mayor’s Office*
Objectives Two (continued)
Ensure effective community emergency preparedness.

Strategy 5.2.4 Designate space to function as emergency or quarantine housing.
   Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
   Assistance From: NSB A&F Risk Management, NSB Mayor’s Office

Strategy 5.2.5 Encourage families to prepare for disasters with contingency plans for child and Elder care.
   Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
   Assistance From: NSB A&F Risk Management, NSB Mayor’s Office

Strategy 5.2.6 Assess Nuiqsut’s vulnerability to disruptions in airline service.
   Responsible Party: City of Nuiqsut
   Assistance From: Native Village of Nuiqsut, Kuukpik Corporation, NSB Public Works, NSB Mayor’s Office

Strategy 5.2.7 Coordinate with the NSB Search & Rescue Department to better jointly manage the volunteer program for both training and response.
   Responsible Party: City of Nuiqsut
   Assistance From: NSB Search & Rescue
Goal Six

Develop a strong and resilient economy.

While industry employs relatively few North Slope residents, revenue from property taxes on oil and gas infrastructure make up a substantial portion of the NSB operating budget. Training local residents and seeking new economic planning and development opportunities are critical to furthering the borough’s economic development goals.

It is important to both prepare students to become community leaders and to be qualified for employment opportunities. The purpose of this goal and its associated objectives is to facilitate educational opportunities within the village, especially those that foster leadership and civic mindedness.

Objective One
Facilitate the establishment of businesses and services and employment opportunities.

Strategy 6.1.1 Encourage the NSB to start an Alaska Regional Development Organization (ARDOR) program and develop work plans for economic development, including comprehensive economic development strategies to aid Nuiqsut in better planning its economic future. 
*Responsible Party:* City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
*Assistance From:* NSB Mayor’s Office

Strategy 6.1.2 Engage in efforts to create a trained local workforce, including collaborative efforts with Ilisaġvik College and the State of Alaska, through education, training, and certification program to residents who seek to learn construction trades, vehicle repair, and maintenance skills, and other service and repair skills that are useful to have available locally. Work closely with industry to train local residents to fill positions for natural resource development that allow for subsistence activities.
*Responsible Party:* City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
*Assistance From:* NSBSD, NSB Mayor’s Office, Ilisaġvik College, DCCED

Strategy 6.1.3 Work with the NSB Planning & Community Services Department during the master plan process to require local hire and Nuiqsut subsistence advisors be employed when projects are within the Area of Influence, or an alternative specified distance from the community.
*Responsible Party:* Native Village of Nuiqsut
*Assistance From:* NSB Planning
Objective One (continued)
Facilitate the establishment of businesses and services and employment opportunities.

Strategy 6.1.4 Investigate burgeoning distance employment opportunities available online.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Mayor’s Office, ASTAC

Strategy 6.1.5 Seek funding for an economic development plan and program to identify new potential business and job opportunities based on local resources.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Administration & Finance Grants Division, DCCED

Strategy 6.1.6 Seek funding to establish workspaces for locals to operate businesses, such as vehicle repair shop/space.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB A&F Grants Division

Strategy 6.1.7 Establish a village storefront to loan equipment and tools and offer home repair technical assistance.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB A&F Grants Division

Strategy 6.1.8 With the North Slope Borough, host an economic summit that bring together businesses, industry, and community leaders to collaborate on economic opportunities for the community.
Responsible Party: City of Nuiqsut, Kuukpik Corporation
Assistance From: NSB Mayor’s Office

Objective Two
Provide educational resources that prepare students for entering the workforce.

Strategy 6.2.1 Develop a “how to” employment library, focusing on job skills, financial aid, and other topics.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB HR, NSBSD, Ilisaġvik College

Strategy 6.2.2 Promote existing scholarship opportunities and continue to develop and expand scholarships to meet the needs of students and employers.
Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From: NSB HR, NSBSD, Ilisaġvik College
**Objective Two (continued)**

Provide educational resources that prepare students for entering the workforce.

- **Strategy 6.2.3** Develop an apprenticeship program, which would provide training to create new skills in villages, supported by a regional network for technical assistance.  
  *Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*  
  *Assistance From: NSB HR, NSBSD, Ilisaġvik College*

- **Strategy 6.2.4** Create a job-shadowing program that matches students with local or regional professionals to share existing traditional and technical knowledge and to model responsible work practices and ethics.  
  *Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*  
  *Assistance From: NSB HR, NSBSD, Ilisaġvik College*

- **Strategy 6.2.5** Evaluate the existing vocational education programs within the community and how they address needs, including training for carpentry and vehicle mechanics.  
  *Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*  
  *Assistance From: NSB HR, NSBSD, Ilisaġvik College*
Goal Seven

Seek meaningful intergovernmental and community cooperation and resident participation in decision-making for the betterment of all village residents.

Village leadership seeks to work collaboratively to improve the quality of life for all residents. The purpose of this goal and its associated objectives is to facilitate opportunities within the village for meaningful public engagement and leadership cooperation together for the future of the community.

Objective One
Facilitate greater coordination amongst leadership entities.

Strategy 7.1.1 Promote formal and informal intergovernmental cooperation and agreements between the Native Village of Nuiqsut, Kuukpik Corporation, City of Nuiqsut, ASRC, NSB, and state and federal government for accomplishing common goals, providing a service or solving mutual problems, and overall improved communications.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Mayor’s Office, ASRC, federal and state agencies as applicable*

Strategy 7.1.2 Formally establish the Nuiqsut Tri-lateral Committee comprised of the City of Nuiqsut, Native Village of Nuiqsut, and Kuukpik Corporation.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*

Strategy 7.1.3 Ensure that the NSB Village Deputy and NSB Liaison for Nuiqsut is involved in local initiatives and is provided training for effective involvement in a multitude of issues facing the community. Work with the Village Deputy and other borough staff in the community to disseminate information to residents, especially related to capital investments.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation, NSB Mayor’s Office*
*Assistance From: ASRC, federal and state agencies as applicable*

Strategy 7.1.4 Seek a dedicated seat for Nuiqsut on the North Slope Borough School District Board.

*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSBSD, Trapper School*
Objective Two
Encourage increased understanding of land use planning and related public processes in order to facilitate community and intergovernmental cooperation.

Strategy 7.2.1 Encourage youth and other residents to attend meetings where governance, capital infrastructure planning, land use planning, and land use permitting is discussed to gain a better understanding of how land use and land management affects the community.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Mayor’s Office, NSB Planning, NSBSD*

Strategy 7.2.2 Collaborate to develop curricula for middle and high school students to understand land use, planning, and the relationship of federal, state, and local regulatory agencies to their community’s current and future health and well-being. Encourage active participation in current Federal and State land planning meetings for the North Slope and Nuiqsut area.
*Responsible Party: Nuiqsut Trapper School*
*Assistance From: NSBSD, NSB Planning, BLM, USFWS*

Strategy 7.2.3 Seek continued guidance and training on pursuing project or program funding, including the NSB Capital Program.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Planning, NSB CIPM*

Strategy 7.2.4 Work collaboratively on researching and submitting funding proposals for community projects.
*Responsible Party: City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Administration & Finance Grants Division*

Strategy 7.2.5 Ensure land ownership maps are accurate and identify areas for new utilities and housing development.
*Responsible Party: City of Nuiqsut, Kuukpik Corporation*
*Assistance From: NSB Planning, NSB Law*

Strategy 7.2.6 Work closely with the NSB Planning Department’s GIS division on updates to data so that the most current information is available when making land use and land management decisions.
*Responsible Party: City of Nuiqsut, Kuukpik Corporation, Native Village of Nuiqsut*
*Assistance From: NSB Planning*
Objective Three
Promote volunteerism.

Strategy 7.3.1   Develop and implement a volunteering plan that could include type and extent of community needs; required skills; resources needed to implement a volunteer program; methods to organize, train, and manage volunteers; ways to promote volunteerism within the community; and identify potential partners.

Responsible Party:  City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From:  NSB Mayor’s Office

Objective Four
Prepare students to be community leaders.

Strategy 7.4.1   Encourage student programs that foster leadership skills, such as student council, peer-mentoring activities, and mentorship opportunities with community leaders.

Responsible Party:  Nuiqsut Trapper School
Assistance From:  NSBSD, Native Village of Nuiqsut, City of Nuiqsut, Kuukpik Corporation

Strategy 7.4.2   Develop a sense of citizenship and ownership in the community through student participation in community projects, such implementing this comprehensive plan and promoting volunteerism for the betterment of the community.

Responsible Party:  City of Nuiqsut, Native Village of Nuiqsut, Kuukpik Corporation
Assistance From:  NSB Mayor’s Office, NSB Planning
3.1. History of Nuiqsut

The Iñupiat and their ancestors have inhabited northern lands and waters for thousands of years. In and around the Colville River Delta, the land has been used since time immemorial for hunting and fishing by the Kuukpikmiut, the People of the Colville River Delta. The Kuukpikmiut settled the Colville River region, thriving on the bounty of plants and animals in the rivers, lakes, sea, and on the land. They traditionally followed the migratory patterns of wildlife with seasonal settlements along the river and coastline. The Colville River is one of Alaska’s major rivers. Originating in the De Long Mountains, it spans approximately 350 miles, terminating its journey into the Arctic Ocean. It provides a watershed for a large area of tundra on the north side of the Brooks Range. The river is frozen for more than half the year and floods each spring, as the snow and ice from the mountains and the tundra melts into its many tributaries.

Since time immemorial, the Colville Delta was home to Iñupiaq camps and settlements. Approximately 500 Kuukpikmiut lived along the lower and middle Colville River in the early to mid-19th century. Nuiqsapiaq was the first year-round settlement location of the Nuiqsut community, is on Nuekshat Island in the East Channel of the Colville River. It was abandoned in the 1930s. The second permanent settlement in the region is Nigligat, established in the 1930s on an unnamed island just north of Nuekshat Island. The Uyagagviit, Niğlivik, and Putu settlements are the closest to present-day Nuiqsut. Historical settlements were also located...
along the Nigliq Channel, in the Colville River Delta, and further inland where the Colville River and Itkillik River converge and beyond. Many of the historic sites are shown in Map 1.

While the Iñupiat were historically nomadic, trade fairs were held each summer at the Nigliq Channel near the mouth of the Colville River and were attended by other northern people. Katŋut, the Iñupiaq name for the trade fairs, means peaceful gatherings of people from different nations. In addition to trading, the fairs served as a gathering place for singing, drumming, feasting, dancing, athletic contests, and games.

Many families moved to Utqiagvik (formerly Barrow) during the 1940s when the U.S. Bureau of Indian Affairs began requiring that children attend school. In 1971, the U.S. Congress passed the Alaska Native Claims Settlement Act (ANCSA) which settled Native land claims by cash payment and land grants. ANCSA also created village and regional Native corporations; the

Map 1: Selected Lower Colville River Historic Sites

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11 Other Iliupiaq trade fairs occurred at Point Spencer on the Bering Strait, Sisualik on Kotzebue Sound, and Sullivik on the Northwest Coast.
Arctic Slope Regional Corporation (ASRC) was created as the regional corporation for the North Slope region and was incorporated in 1972. ASRC currently has approximately 13,000 Iñupiaq shareholders, owns nearly five million acres of land, and operates a diverse family of companies.  

While considering the land selections in the region, NSB and ASRC encouraged families, especially those with Kuukpikmiut descent, to resettle the Colville Delta region. Under ANCSA, a newly settled community would be entitled to land selections and federal support and enable ASRC to claim valuable subsurface rights to land in the area.

In 1973, 27 families completed a historic trek traveling by foot, dog sled, and snow machine from Utqiaġvik to the Colville River delta to permanently resettle the Kuukpikmiut ancestral homeland. The families had historically hunted, fished, or trapped in the Colville River area. Leaders of the resettlement searched the banks of the Colville River for an appropriate village site on high ground which would be safe from spring flooding. They chose a site on the Nigliq Channel near its confluence with the Colville River channel because of the abundance of wildlife. While the Kuukpikmiut were aware of oil under the land in the Colville Delta region, the primary purpose in resettling the land was to maintain use of the area for cultural and subsistence activities.

The Kuukpikmiut named their new community Nuiqsut, meaning The New Horizon. For 18 months, between the time that the families resettling the area arrived and when housing and other community facilities were constructed, the families lived in tents that were protected by snow blocks in the winter. ASRC assisted with moving and relocation costs as well as construction of housing and a store for the new village.

### 3.2. Local Governance

Nuiqsut is represented by municipal and Tribal governments, both local and regional. Each of these four governmental organizations are described below. Together the City of Nuiqsut, the Native Village of Nuiqsut, and Kuukpik Corporation make-up the Nuiqsut Tri-lateral.

**City of Nuiqsut.** The City of Nuiqsut incorporated in 1975 as a second-class city and is a subdivision of the North Slope Borough and the State of Alaska. The seven members of the City Council are elected at-large and the Mayor is elected by the Council. The Mayor leads the City
Council and is responsible for day-to-day management of city operations. The city government represents all of its citizens, unlike Tribal governments and village Native corporations.

**Native Village of Nuiqsut.** The seven-member Native Village of Nuiqsut (NVN) Tribal Council governs the Native Village of Nuiqsut, a federally recognized tribe. NVN was established under authority of the Indian Reorganization Act (IRA) of 1934. A federally recognized Indian tribal government and its political subdivisions, including Alaska Native governments like the Native Village of Nuiqsut and the Iñupiat Community of the Arctic Slope (ICAS), are treated like states for certain federal tax purposes. Tribes are authorized to govern many of their own affairs as sovereign nations within the U.S. Tribal governments have access to funding for a wide variety of social, cultural and capital projects. NVN is a non-profit organization with no non-native membership. Because of this, the Native Village of Nuiqsut, like many Tribal governments, are particularly focused on issues relating to subsistence and the Iñupiaq culture and its traditions.

**Iñupiat Community of the Arctic Slope.** ICAS is the regional tribal government for all the North Slope villages. It was also established in 1971 under the Indian Reorganization Act and is one of only two regional sovereign Tribal governments in Alaska recognized by the United States government.

**North Slope Borough.** Nuiqsut is located within the NSB, a regional home-rule government comprised of 94,763 square miles of land in northern Alaska, as shown in Map 2. The borough retains all power not specifically restricted by its charter or by state law. It provides public services for Nuiqsut residents, including planning and zoning, water and wastewater service, trash pick-up, road maintenance, and managing and maintaining the airport, among others. NSB also has taxing authority, generally levying a property tax of 18.5 mills, with authority for up to 20.0 mills.

NSB has a Planning Commission with eight members and eight alternates; one regular member and one alternate member are from each North Slope community. All commissioners are appointed by the NSB Mayor and confirmed by the NSB Assembly. The Planning Commissioners perform functions related to planning and zoning. They also serve as representatives of their respective communities and use their position to bring issues and concerns of their communities the attention of the North Slope Borough administration.

NSB also has an Assembly whose members are elected by residents of the North Slope Borough and serve their constituents during their elected term of office. The members enact laws, appropriate North Slope Borough School District and departmental funds, establish mill levies, acts as the Board of Equalization, confirm department directors, confirm appointments to all boards and commission, and certify NSB elections. There are eleven members: six members representing the Utqiaġvik community, and the remaining five members represent seven villages across the North Slope, with Kaktovik and Anaktuvuk Pass sharing a representative.

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**Kuukpik Corporation.** On April 19, 1973, the Native village corporation for Nuiqsut was formed with 212 shareholders. Kuukpik Corporation currently has approximately 384 shareholders and owns about 144,180.87 acres of surface land while ASRC retains subsurface title. Kuukpik Corporation currently operates several subsidiaries involved with ice road construction, gravel mining and hauling, civil construction, drilling, seismic exploration, camps and catering, surveying and security.

**Arctic Slope Regional Corporation.** ASRC is a private for-profit regional corporation that represents the business interest of its approximately 13,000 Iñupiaq shareholders that primarily live in the eight North Slope communities, including Nuiqsut. It was established through ANCSA in 1972. ASRC, based in Utqiaġvik, is the largest Alaska-owned company, employing nearly 13,000 people worldwide. The Corporation’s operations are strongly based in natural resources, holding title to approximately five million acres of land.

### 3.3. Regional Cooperation and Collaboration

The North Slope Borough and local municipalities, corporations, and Tribal governments work together to provide services to residents. Although the Nuiqsut Tri-lateral has struggled over the years, its coordination and advocacy have positively affected the community, including critical in jointly moving forward on a number of issues recently.

One recent example is the Freshwater Bridge that connects the community with the platted subdivision south of the airport. Originally conceived as mitigation for Greater Mooses Tooth -1 (GMT-1), the North Slope Borough, Kuukpik Corporation, and ConocoPhillips Alaska, contributed additional funds to bring the bridge to fruition. The three entities in the Nuiqsut Tri-lateral unanimously agreed to expend funds from the mitigation fund on the bridge’s construction.

The three member organizations of the Nuiqsut Tri-lateral have also had recent collaborative successes in establishing community priorities for applying for NPR-A mitigation funds.

The City of Nuiqsut has worked with TNHA and others to match land ownership with needs in the community. The city has donated lots for TNHA to building houses to alleviate overcrowding one of the most overcrowded communities in the U.S.

In addition to continuous collaboration with the North Slope Borough, community residents also work together with other communities in the region for the betterment of all residents. For example, subsistence hunters in Nuiqsut and Anaktuvuk Pass collaborate to ensure that both communities get through a season with a poor subsistence harvest. Map 3 illustrates the two communities’ overlapping Area of Influence.

Residents of Nuiqsut has expressed concerns regarding the relationship between the NSB and community leadership organizations. Below are some concerns expressed by residents during community meetings for this comprehensive plan:

- There is a lack of understanding on how the borough distributes its resources and if those

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resources are distributed in an equitable manner.

- Greater local decision-making and collaboration on the distribution of borough resources is needed rather than a top-down approach.
- Local decision-making and self-determination is lost in the current governmental structure.
- NSB and ASRC leadership should visit the community during the busy times of the year to understand the development that is occurring in the village. More frequent visits are requested. Many issues could be addressed through the development of a caucus that engages the local community on a continuous basis.
- There needs to be improved communications between ASRC and the village.
- Overall communication from the borough could be improved.
- Local leaders should have more and better opportunities to educate the borough on local issues of concern.
- There is only one Planning Commissioner and one Assembly representative for the village in this busy village. Both of these governing bodies need to be better educated regarding permitting and other local concerns.
- Residents are concerned that the borough does not adequately engage with the community on industry activities, including information on how development could potentially affect wildlife.
- The borough implements a top-down imposition of philosophy that is pro-development that is often in conflict with village concerns and its subsistence culture and values.
- Wildlife studies and surveys do not hire consistently hire locals that know the land and water to aid in the research.
- Wildlife samples are submitted to the borough but there is no consistent return communication on the results of those samples.
- NPR-A funding opportunities are not fairly distributed to the Nuiqsut, the community that is most affected by development.
- Residents feel that the NSB Assembly doesn’t always consider the needs of the Nuiqsut when making decisions, especially for capital improvement program funding.
- Residents feel that the NSB Assembly doesn’t always consider the needs of Nuiqsut residents when making decisions, especially for capital improvement program funding.
- The Tri-lateral should have a bigger voice with the NSB.
- The community would like a collaborative plan with the NSB that includes involvement in the annual capital funding workshops at the Project Review Committee (PRC).

### 3.4. Iñupiaq Values and Language

The residents of Nuiqsut honor cultural ties to ancestors and the land through traditional Iñupiaq values. The Iñupiat highly regard family, work ethic, the Iñupiaq language, drumming and dancing, and sharing food and knowledge of animals with a deep respect for the environment as it provides fresh water, clean air, and subsistence foods. Table 1 provides a summary of cultural values of the North Slope Iñupiat.

The NSB Iñupiat Heritage, Language, and Culture (IHLC) Department maintains the Traditional Land Use Inventory, a complete historical record of the land, people, and villages of NSB. Development cannot disturb traditional subsistence activities or values at historic, archaeological, and cultural sites. The IHLC
Department also focuses on preserving oral history through traditional land use studies, historical accounts, stories, legends, and life histories in all media formats and through the Heritage Center that educates visitors and provides a place for cultural revitalizing efforts and a gathering space.  

Table 1: Iñupiat Values

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paaqlaktautaiñiq</td>
<td>The Iñupiaq way is to think positive, act positive, speak positive and live positive.</td>
</tr>
<tr>
<td>Nagliktuuqiagñiq</td>
<td>Though the environment is harsh and cold, our ancestors learned to live with warmth, kindness, caring and compassion.</td>
</tr>
<tr>
<td>Paammaaqigñiq</td>
<td>Together we have an awesome power to accomplish anything.</td>
</tr>
<tr>
<td>Ilagiigñiq</td>
<td>As Iñupiat people, we believe in knowing who we are and how we are related to one another. Our families bind us together.</td>
</tr>
<tr>
<td>Qiñuïñiq</td>
<td>Our hearts command that we act on goodness. We expect no reward in return. This is part of our cultural fiber.</td>
</tr>
<tr>
<td>Quvianquniq</td>
<td>Indeed, laughter is the best medicine.</td>
</tr>
<tr>
<td>Añunjialaiñiq</td>
<td>Reverence for the land, sea, and animals is the foundation of our hunting traditions.</td>
</tr>
<tr>
<td>Iñupiuriñalaiñiq</td>
<td>With our language, we have an identity. It helps us to find out who we are in our mind and in our heart.</td>
</tr>
<tr>
<td>Piqpakkutiaqñiq suli Qiksiksrutiaqñiq Utuqqanaanun Allanullu Love and Respect for our Elders and One Another</td>
<td>Our Elders model our traditions and ways of being. They are a light of hope to younger generations. May we treat each other as our Elders have taught us.</td>
</tr>
<tr>
<td>Qiksiksrutiaqñiq Iñuuniaqvigmun Respect for Nature</td>
<td>Our Creator gave us the gift of our surroundings. Those before us placed ultimate importance on respecting this magnificent gift for their future generations.</td>
</tr>
<tr>
<td>Aviktuaqatigñiq</td>
<td>It is amazing how sharing works. Your acts of giving always come back.</td>
</tr>
<tr>
<td>Ukipiqutiaqñiq</td>
<td>We know the power of prayer. We are a spiritual people.</td>
</tr>
</tbody>
</table>

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The Iñupiaq language is an integral component of the cultural identity of the Iñupiat. North Slope residents and the borough place great importance on expanding fluency in Iñupiaq to preserve, protect, and maintain traditional culture and values.

Beginning in the early 1900s to the 1970s, Native Alaskan children were taken from rural communities that lacked either primary or secondary schools. They were sent to boarding schools run by the Bureau of Indian Affairs (BIA), by churches or, later, by the State of Alaska. Many students attended boarding schools in-state, but at one point, over 1,000 students from Alaska attend out-of-state boarding schools, most notably in Oregon, Oklahoma, and New Mexico. Many Native children were not allowed to speak their language and even received physical punishment when they did. Students’ feeling a loss of culture and identity were common; many found it difficult to return home and feel accepted because they had missed out on learning important traditional skills.22 While the State was required under 1976 Tobeluk v. Lind to build a system of village high schools serving communities with eight (now ten) or more students, boarding schools have had a long-lasting effect on the then students and their families and communities. Loss of language fluency of then-students and their decedents is one such outcome.

Since the first North Slope Borough Economic Profile and Census Report (NSBEP&CR or census) effort in 1993, there has been a gradual decrease in Iñupiaq language use among Nuiqsut residents. According to the 1993/94 NSB Census, 43 percent (183 resident) spoke Iñupiaq fluently in Nuiqsut. An equal number of households spoke primarily Iñupiaq at home as spoke primarily English at home while approximately 50 percent of households spoke both languages at home. Only 24.4 percent of households spoke only English at home; over 75 percent of households spoke either Iñupiaq as the primary language or both Iñupiaq and English at home.23

Figure 2: Percent of Fluent Inupiat Speakers

![Figure 2: Percent of Fluent Inupiat Speakers](image)

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Five years later the 1998 NSB Census reports that 40 percent of residents (170 people) spoke Iñupiaq fluently in Nuiqsut. By 2003, the percent of fluent Iñupiaq speakers dropped significantly, to 23 percent (98 residents). However, the trend reversed somewhat, with 35 percent of residents (145 people) speaking fluent Iñupiaq in 2010. In 2014, however, the increase from four years earlier adjusts to the trendline: 14.8 percent (59 people) spoke Iñupiaq fluently.

More recently, the 2019 NSBEP&CR indicates that 22 percent of the population can speak Iñupiaq fluently. Another 35 percent of Nuiqsut residents understand but do not speak the language. In 2019, household heads in Nuiqsut report that 4.2 percent of households speak mostly Iñupiaq at home while 45.8 percent of households speak both Iñupiaq and English at home. Nearly fifty percent of households report speaking mostly English at home. Figure 2 illustrates the decline of Native Iñupiaq speakers in Nuiqsut between 1993 and 2019.

Of North Slope villages, Nuiqsut has the third largest percentage of its population speaking Iñupiaq fluently or understanding Iñupiaq. Point Lay has the lowest proportion of Iñupiaq speakers overall at nine percent, but is joined by Atqasuk, Kaktovik, and Point Hope in a low tier of fluency, with 15 percent or less of Iñupiaq individuals speaking the Iñupiaq language.

Across the North Slope, there is a strong association between fluency in Iñupiaq and having a subsistence-based diet. Two-thirds of fluent speakers are heavily dependent on subsistence harvests for half or more of their diet. The ability to speak one’s native language has substantial benefits. Fully understanding cultural values, especially when there is not an adequate translation, is just one benefit. Others include having a more meaningful relationship with relatives that only speak the native language and having a positive self-identity through the language connection to culture. Those fluent in their native language are also more able to freely participate in cultural activities or events and create more meaningful relationships and interactions with the cultural community. Bilingualism also offers cognitive benefits and academic successes.

Because of the dramatic decline in fluent Native Iñupiaq language speakers, the NSBSD has made efforts to strengthen the Iñupiaq language by offering language classes utilizing the Accelerated Second Language Acquisition Method and supported with a customized computer based language-learning tool. To assist adults in learning or re-learning Iñupiaq, the NSB Iñupiaq History, Language and Culture Department sponsored the production of an online Iñupiaq language program in partnership with the Rosetta Stone program for Endangered Languages.

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Chapter Four

Photo courtesy of Roseanne Lampe
People of Nuiqsut

The Kuukpikmiut of the Colville River Delta are a tight knit community of primarily Alaska Native people that have occupied this region for thousands of years. This chapter provides information on age, race, and population growth for the people of the Colville Delta. Hunting, sharing, and reliance of Native foods is provided its own chapter highlighting the importance of these aspects of Nuiqsut life to its residents. This subsistence information is in Chapter 6.

4.1. Historical Population

Although the region has a long and interesting history as both a settlement and trading place, there are not records regarding the population of the region. There were an estimate 500 people living in the Colville River Delta region during the early to mid-19th century. In 1973, 27 families completed a historic trek traveling by foot, dog sled, and snow machine from Utqiagvik to the Colville River delta to permanently resettle the Kuukpikmiut ancestral homeland. But it was not until 1980 that the U.S. included Nuiqsut in its decennial census. The federal government determined that approximately 208 people resided in the community in 1980. In 1990, there were reportedly 354 residents, increasing by 70 percent over just one decade and by 2000, the population had increased by another 22 percent to 433 people. In 2010, the U.S. Census reported 402 residents while the North Slope Borough had also conducted its own door-to-door census, determining that there were 415 residents. The 2019 NSB Census reported 481 residents and the State of Alaska certified a population of 492 residents as of July 1, 2020, a 17 percent increase over ten years. Since the first U.S. Decennial Census, the number of Nuiqsut community members has grown 137 percent.

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Table 2 provides a historical perspective of Nuiqsut’s population beginning in 1940. Complementing Table 2 is Figure 3, a graphic depiction of the population changes between 1980 and 2020 using both the U.S. Decennial Census population and the NSB Census. Figure 4 illustrates state, borough, and local population changes over a 40-year period.

The NSB conducts its own census on a regular schedule, typically every five to seven years; they have been conducted in 1992, 1998, 2003, 2010, 2015, and 2019. Historically, the NSB census has gathered information from nearly all village households and a large percentage of households in Utqiagvik. This effort provides valuable information on North Slope residents, including employment and training, income, education, housing, subsistence, health, language, food insecurity, voting, and other topics. The information from these census efforts is used for a variety of projects and

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Source</th>
</tr>
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<tbody>
<tr>
<td>1940</td>
<td>86</td>
<td>U.S. Census (Colville River)</td>
</tr>
<tr>
<td>1950</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>208</td>
<td>U.S. Census</td>
</tr>
<tr>
<td>1990</td>
<td>354</td>
<td>U.S. Census</td>
</tr>
<tr>
<td>1993</td>
<td>418</td>
<td>NSB Census</td>
</tr>
<tr>
<td>1998</td>
<td>420</td>
<td>NSB Census</td>
</tr>
<tr>
<td>2000</td>
<td>433</td>
<td>U.S. Census</td>
</tr>
<tr>
<td>2003</td>
<td>416</td>
<td>NSB Census</td>
</tr>
<tr>
<td>2010</td>
<td>402</td>
<td>U.S. Census</td>
</tr>
<tr>
<td></td>
<td>415</td>
<td>NSB Census</td>
</tr>
<tr>
<td>2015</td>
<td>423</td>
<td>U.S. Population &amp; Housing Estimates(^{32})</td>
</tr>
<tr>
<td></td>
<td>449</td>
<td>NSB Census(^{33}) and DCCED Certified Population(^{34})</td>
</tr>
<tr>
<td>2019</td>
<td>425</td>
<td>U.S. Population &amp; Housing Estimates(^{35})</td>
</tr>
<tr>
<td></td>
<td>481</td>
<td>NSB Census(^{36})</td>
</tr>
<tr>
<td>2021</td>
<td>492</td>
<td>DCCED Certified Population</td>
</tr>
</tbody>
</table>


programs, from developing long range comprehensive plans such as this one, to grant applications at the regional and Tribal level, to understanding the plummeting levels of Iñupiaq language fluency and health disparities.

The State of Alaska bases its population estimates on the U.S. Decennial Census. In 2010, the federal census significantly undercounted the population of each village on the North Slope, leading the State of Alaska to perpetuate the undercount. The North Slope Borough appealed the state census counts to better reflect the true population of each community. The population estimates are important; every resident adds approximately $20,000 in tax revenue to the borough.37

Figure 3: Population Growth, 1980 – 2020

In 2020 the North Slope Borough sought the assistance of city and Tribal governments within its jurisdiction to assist with the appeal. Nearly every community participated in counting all village residents, resulting in an increase of 152 residents above the State of Alaska count of

Figure 4: State, NSB, and Nuiqsut Population Growth, 1980 – 2020

8,975\textsuperscript{38, 39} with a total population estimate of 17,924 to include the Prudhoe Bay population. The North Slope Borough Planning & Community Services Department anticipates that they will need to appeal the state census every year to maximize funding that is due to the borough.\textsuperscript{40}

Nuiqsut has sustained an overall increase of 137 percent population growth over the last forty years. Nuiqsut’s percentage growth is greater than that of the North Slope Borough as a whole and the State of Alaska over the same timeframe. It is also greater growth than experienced in Point Hope, Wainwright, Anaktuvuk Pass, and Kaktovik between 1980 and 2020.

### 4.2. Population Characteristics

This section includes information on the Nuiqsut community on age, household size, income, race, and language fluency. Table 3 provides additional at-a-glance information on the residents of and the changes that have taken place over the last few decades. The most

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>420</td>
<td>416</td>
<td>402</td>
<td>449</td>
<td>481</td>
</tr>
<tr>
<td>Female</td>
<td>47.6%</td>
<td>47.8%</td>
<td>48.8%</td>
<td>44.2%</td>
<td>49.3%</td>
</tr>
<tr>
<td>Male</td>
<td>52.5%</td>
<td>52.2%</td>
<td>51.2%</td>
<td>55.8%</td>
<td>50.7%</td>
</tr>
<tr>
<td>Median age</td>
<td>21</td>
<td>21</td>
<td>24</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Median age of females</td>
<td>20</td>
<td>20</td>
<td>22</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Median age of males</td>
<td>21</td>
<td>21</td>
<td>24</td>
<td>26</td>
<td>22.5</td>
</tr>
<tr>
<td>Iñupiat</td>
<td>90.0%</td>
<td>91.8%</td>
<td>89.1%</td>
<td>87.7%</td>
<td>95%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>8.6%</td>
<td>7.4%</td>
<td>8.0%</td>
<td>9.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Other</td>
<td>1.4%</td>
<td>&lt;1%</td>
<td>2.9%</td>
<td>3.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Fluent Iñupiat speakers</td>
<td>23%</td>
<td>28.8%</td>
<td>50.3%</td>
<td>9.1%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Size of the labor force</td>
<td>176</td>
<td>169</td>
<td>229</td>
<td>118</td>
<td>138</td>
</tr>
<tr>
<td>Average household size</td>
<td>3.62</td>
<td>3.79</td>
<td>3</td>
<td>3.68</td>
<td>4.3</td>
</tr>
<tr>
<td>Per capita Iñupiat income</td>
<td>N/A</td>
<td>$8,475</td>
<td>$20,000</td>
<td>$10,840</td>
<td>$9,880</td>
</tr>
<tr>
<td>Per capita income</td>
<td>$13,540</td>
<td>$13,633</td>
<td>$29,400</td>
<td>$26,102</td>
<td>$18,058*</td>
</tr>
<tr>
<td>Average Iñupiat household income</td>
<td>NA</td>
<td>$51,904</td>
<td>$64,196</td>
<td>$44,346</td>
<td>$46,109</td>
</tr>
<tr>
<td>Average Non-Iñupiat household income</td>
<td>NA</td>
<td>$77,447</td>
<td>$85,600</td>
<td>$84,283</td>
<td>$85,985</td>
</tr>
<tr>
<td>Average household income</td>
<td>$48,359</td>
<td>$59,907</td>
<td>$70,000</td>
<td>$50,001</td>
<td>$70,673</td>
</tr>
</tbody>
</table>

*greater than 25% missing data


\textsuperscript{39} Includes 427 people outside of the communities.

\textsuperscript{40} Gutierrez-Edwards, Kristin. NSB Community Planner. 2021. Personal communication. June 10, 2021
notable change over the past two decades is that the household size is at its highest, with an average of 4.3 people living together in one household. An additional trend over the last twenty years is that the average Inupiat household income has decreased overall; between 2010 and 2019, the average Inupiat household income has gone down by $18,087. There are many reasons that could be attributed to this – lack of jobs and smaller Native corporation dividends, for example. High non-response rates on the North Slope Borough Economic Profile and Census Report could contribute to an inaccurate income estimate. Likewise, the 2019 Census Report used a slightly different methodology in calculating income estimates than the 2010 and 2015 reports, possibly explaining some of the significant change, especially since the 2010 Census.41

Between 1993 and 2020, Inupiat residents have accounted for at least 88 percent of the Nuiqsut population. The highest level of non-Inupiat residents was just five years ago in 2015, when 12 percent of residents were non-Inupiat residents. As illustrated in Figure 5, the percentage of non-Inupiat residents has dropped recently; in 2019, 95 percent of the population was Inupiat, four percent Caucasian, and two percent another ethnicity(ies).

As shown in Table 4, in 2019, Nuiqsut had a young population with 34.8 percent of its residents aged 15 and under, slightly less than the North Slope Borough at 39.5 percent.42 43 The percent of the Nuiqsut community that is 15 and younger is at its highest level since at least 2003.

A dependency ratio measures the number of dependents aged 0 - 14 and 65+ compared with the total population (labor force) aged 15 - 64. The dependency ratio can give insight into the number of people of non-working age compared with the number of those of working age, often used to understand the relative economic burden of a workforce – meaning the number of people that are working to support those that are either too young to work or retired. In

42 Ibid
Nuiqsut, the total dependency ratio has steadily been increasing over the years, indicating that the workforce supporting younger and older members of the population is growing smaller as the number of those needing support increases. This can signal the need for additional elder and youth services.

4.3. Population Growth

The strongest component of population growth in North Slope communities is natural increase, with more births occurring than deaths. Between 1998 and 2018, 245 new residents were born while 63 persons passed away, for a net increase of 182 people. As illustrated in Figure 6, births have been viable over the twenty-year period, ranging from a low of 5 in 1998 to a high of 19 in 2014; deaths have ranged from a low of one in six over the same timeframe. Births have exceeded deaths every year.

Table 4: Resident Age Distribution, 1980 – 2021

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15 years and under</td>
<td>33.9%</td>
<td>35.4%</td>
<td>30.2%</td>
<td>25.7%</td>
<td>33.8%</td>
<td>36.3%</td>
<td>34.8%</td>
<td>39.5%</td>
</tr>
<tr>
<td>16 – 64 years of age</td>
<td>60.7%</td>
<td>60.0%</td>
<td>65.3%</td>
<td>68.9%</td>
<td>61.4%</td>
<td>58.8%</td>
<td>60.3%</td>
<td>56.5%</td>
</tr>
<tr>
<td>65 and older</td>
<td>5.4%</td>
<td>4.6%</td>
<td>4.5%</td>
<td>4.8%</td>
<td>4.9%</td>
<td>4.9%</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>Youth Dependency Ratio</td>
<td>55.8</td>
<td>59</td>
<td>46.2</td>
<td>37.3</td>
<td>55.0</td>
<td>61.7</td>
<td>57.7</td>
<td>69.9</td>
</tr>
<tr>
<td>Age Dependency Ratio</td>
<td>8.9</td>
<td>7.7</td>
<td>6.9</td>
<td>7.8</td>
<td>7.8</td>
<td>8.3</td>
<td>8.1</td>
<td>6.7</td>
</tr>
<tr>
<td>Total Dependency Ratio</td>
<td>64.7</td>
<td>66.7</td>
<td>53.1</td>
<td>45.2</td>
<td>62.8</td>
<td>70</td>
<td>65.8</td>
<td>76.9</td>
</tr>
</tbody>
</table>
The U.S. and NSB censuses do not collect data on new residents or current residents moving out of the village, also known as resident in-migration and out-migration. Out-migration is often attributed to high school graduates leaving to attend college, workers seeking employment opportunities elsewhere, or residents leaving to be close to other family members or loved ones. In-migration would most often be attributed to new residents moving to the village to live with or near family members or for employment.

One potential indicator of the prevalence of in- and out-migration in Nuiqsut is the number of people who apply for the annual Alaska Permanent Fund Dividend (PFD). The Permanent Fund program tracks the dividend recipients by zip code and community. Figure 7 illustrates the combined number of adult and child applicants for the PFD program living in Nuiqsut between 2000 and 2018. The total number of applicants has remained relatively steady over the nineteen-year period. Over this period, the highest combined total of PFD applicants was in 2018 at 456; the year with the least applications submitted by both child and adult residents was in 2008, at 374. Although there have been some dips, the total number of annual applicants illustrates a steady climb overall.

The State of Alaska uses PFD applications in conjunction with birth and death data and the U.S. Census to determine the population of a community. The number of PFD applications does not always provide an accurate portrayal of a community’s population, leading to an undercount of the existing population and thus to an estimate that is not reflective of the actual population in the community. Some of the issues with using the PFD as an indicator of in- and out-migration can be problematic. There are number of reasons an Alaska resident would

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Figure 6: Births and Deaths, 1998 - 2018

![Births and Deaths Graph]

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choose not to apply for PFD dividend, including avoiding jury duty or other obligations, the dividend would be garnished for unpaid taxes or child support, or because a resident appreciates other benefits of being an Alaska and does not want more.\textsuperscript{45} In all of the four years that both NSB Census data and PDF applicant counts are both available, the number of PFD applicants was less than the Nuiqsut population, with differences ranging from 15 to 24 people.

Determining population estimates for small communities in rural Alaska is problematic, even though both the U.S. Census Bureau and the State of Alaska make a determination annually. The State of Alaska uses a combination of trend lines based on the prior U.S. Decennial Census as well as PFD applications, birth and death rates, and migration to complete population estimates. According to the 2015 NSBE&CR\textsuperscript{49} the problem with the rural Alaska population estimates is, in part, that the U.S. Decennial Census is an estimate based on a combination of surveys and administrative reports. The U.S. Census Bureau reported that for the 2010 Decennial Census “approximately 74 percent of the households returned their census forms by mail; the remaining households were counted by census workers walking neighborhoods throughout the United States.”\textsuperscript{50} While U.S. Census takers do conduct door-to-door counts, rural Alaskan villages are difficult to reach,

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{pfd Applicants.png}
\caption{Permanent Fund Dividend Applicants, 2000 – 2018 \textsuperscript{46, 47, 48}}
\end{figure}

\textsuperscript{45} Theriault Boots, Michelle. 2016. Why some Alaskans don’t apply for the PFD. \url{www.adn.com/alaska-news/article/why-some-alaskans-dont-apply-pfd/2014/10/02/}.


\textsuperscript{47} Alaska Department of Revenue. Nuiqsut PFD applicants for 2016 – 2018. Personal communication.

\textsuperscript{48} The 2015 PFD Annual Report provided only the total number of applicants.


\textsuperscript{50} Alaska Department of Revenue. Nuiqsut PFD applicants for 2016 – 2018. Personal communication.

accommodations are often non-existent, weather conditions make walking throughout the community difficult, and some houses are determined vacant when they are not, questioning the effectiveness of this method in these communities.51 All of these factors can reduce accurate village population counts.

4.4. Population Growth Projections

Calculations of the size of future populations are useful for land use planning; economic development initiatives; transportation and health service needs; infrastructure capacity determinations; water demand assessments; and natural resource management, among others. Population projections used by planners and policymakers to assist in the preparation of planning for future development are often imprecise. Examples of these conditions are employment opportunities,50 availability of land for development, or, as is the case of many rural Alaska communities, the abundance of subsistence wildlife.

Using a linear trend projection assumes that the Nuiqsut population will increase or decrease by the same number of people in each future decade as the average per decade increase or decrease observed between two or more interval years. This relatively simple method of projecting the future population is often as accurate as more complex methods,52 but it has limitations for small and rural communities. Projections are especially difficult for small communities, particularly when combined with unanticipated conditions that may affect in- and out-migration.

The no-growth rate shown in Table 5 assumes that the population declines at one-half percent per year, with a projected population in 2040 of 433 people. The modest growth scenario of one-half percent per year assumes a stable job market in government services and potentially oil and gas industry-related employment as well

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as and temporary or permanent construction work, often related to NSB capital infrastructure projects, with a projected population in 2040 of 534 people. The high one percent annual growth rate scenario assumes that there is some moderate growth in government services, perhaps coupled with other industry development nearby that may provide jobs for residents in Nuiqsut, with a projected population in 2040 of 593 people. Lastly, the linear trend projection using the NSB census efforts in 1990 and 2010 presented in Table 5 is closely aligned with a 0.75 percent population growth rate. Population projections are also shown graphically in Figure 8.

In Nuiqsut, a significant change to in- and out-migration related to industry development activity could result in greater population gains due to greater opportunities for employment than anticipated in this plan. Likewise, lower population gains could result from increased activity and the resulting dust and air quality concerns. Depending on the interval years and source of data selected, a linear trend projection could increase at a modest growth rate or a greater growth rate. Whatever the rate of growth over the coming decades, it is clear that the community will continue to grow, potentially to more than 550 residents.

Figure 8: Population Projections
Photos courtesy of Kuukpik Corporation
Chapter Five

Photo courtesy of Roseanne Lampe
5.1. Physical Setting: Geography, Geology, and Soils

Nuiqsut is located on Alaska’s Arctic Coastal Plain, north of the Brooks Range at the head of the Colville River delta, approximately 18 miles inland from the Coast of the Beaufort Sea. This remote community experiences long cold winters with frequent storms and high winds followed by short mild summers. Temperatures are well below freezing for much of the year with consistent snow cover for about eight months. The community lies along a western bank of the braided river, adjacent to the Nigliq Channel (also known as the Nechelik channel on some maps). The Nigliq Channel cuts into the surrounding ice- and sediment-rich soils, resulting in a steep bank of approximately 15 - 20 feet directly adjacent to Nuiqsut.

The Colville is the largest river basin north of the Brooks Range in Arctic Alaska, encompassing 20,541 square miles. The Colville River drains much of the Brooks Range, and it does so quickly over the short Arctic summers. The large triangular delta of the Colville River is about 20 miles by 26 miles by 23 miles across, or about 1 percent the size of the massive drainage basin. The delta developed from sands, gravels, and sediment moving downstream from the Brooks Range, across the Arctic Coastal Plain, and depositing at the mouth of the river. This process has formed sand dunes, mudflats, and shallow lakes within the delta, and at least 30 distributaries flowing into the Beaufort Sea.
Banks of the Colville River are comprised of sands and gravels, overlaid by a substantial amount of peat. Ice wedge polygons are commonly exposed along active channel banks. Soils in the Nuiqsut area are typical of the Arctic Coastal Plain, and comprised of ice-rich marine sediment, topped by a peaty tundra mat supporting a variety of tundra vegetation. The top layer sits on continuous permafrost, which extends several hundred feet below ground surface. For lands around Nuiqsut and across the Arctic Coastal Plan, disturbance and thaw settlement of the perennially frozen, ice-rich sand and silt have created a mosaic of lakes, ponds, and interconnected streams.

Nuiqsut, near the longitudinal center of the North Slope Borough, is also at the center of oil and gas operations in Arctic Alaska. The Colville River Unit, commonly known as Alpine, of which ConocoPhillips Alaska, Inc. (CPAI) is the unit operator, is just eight miles north of Nuiqsut on a State of Alaska lease within the Colville River delta. Since discovery of oil in 1995, Alpine has continued to expand, and currently includes the growing CD-5 development just west of the Colville River within the NPR-A, on Kuukpik Corporation lands.

5.2. The Changing Climate

The Arctic ecosystem is in distress from global climate change. Lands and waters around Nuiqsut are changing rapidly in response to warming air and water temperatures. Residents of Nuiqsut report unprecedented changes to the weather, seasons, land and seascape, plants, wildlife and infrastructure, as new Arctic is emerging, characterized by thawing land, open water and a longer warm season. Environmental impacts are often irreversible, interdependent, and in the frozen Arctic, result in emission of long-stored carbon as greenhouse gasses further accelerating the pace of change.

Nuiqsut residents are impacted in numerous ways, including by flooding on the Colville, failing ice cellars, changing bowhead whale migration, native plant retreat, tundra fires, coastal permafrost melt, or land subsidence; the list is extensive. In a traditional Iñupiat community such as Nuiqsut, where 96 percent of residents rely on subsistence foods, the effects of climate change impact daily life as well as long-term family, lifestyle, and career decisions.

Annual temperature has risen 7.3°F (degrees Fahrenheit) in Nuiqsut over the last 100 years, according to a recent analysis for the Washington Post. Across the North Slope of Alaska, the International Arctic Research Center has recorded an increase of 5.8°F from 1969 to 2018. Utqiagvik, about 150 miles Northwest of...
Nuiqsut, recorded its five warmest winters from 2014 – 2019.67

Precipitation has been increasing in Nuiqsut and across the State of Alaska. Increased precipitation is a natural result of higher temperatures, as a warmer atmosphere holds more water than vapor. Between 1969 and 2018, precipitation on the North Slope increased by 9.5 percent from baseline data.68 A 2019 analysis of climate data in Nuiqsut found that precipitation doubled in 2017, 2018, and 2019 when compared to the previous decade.69 This precipitation collects in four major braided river drainages including the Colville, Sagavanirktok, Canning, and Kuparuk Rivers.70 Preliminary 2020 peak water level at a CPAI monitoring station just south of Nuiqsut on the Colville River was 21.40 feet, the second highest on record. The highest observed water level on record was 23.47 feet in 2015.71 Widespread flooding occurred throughout the Colville River Delta in 2020, as coincident ice jams in the East Channel and the Nigliq Channel caused a backup of floodwater. According to baseline data, flooding of the Colville River delta typically occurs between May 23 and June 5. Peak flooding in 2020 occurred May 28 - 29.

5.3. Air Quality

Air Quality in Nuiqsut meets the Alaska ambient air quality standards (AAAQS). The most recent air quality advisory for the North Slope was in summer 2017, when multiple wildfires were burning in the Yukon Flats between Fairbanks and Kaktovik.72

Nuiqsut is the North Slope Borough community nearest to the oil and gas industry, with the large Alpine production facility just eight miles north. Periods of poor air quality have been reported in all borough communities including Nuiqsut, however Nuiqsut has the benefit of air quality data being recorded locally by oil and gas operators and reported publicly. Current air quality data can be found at the following website: https://northslopescience.org/nuiqsut.

Air pollutants may be emitted during petroleum exploration, production, refining and processing, and combustion. In Nuiqsut, the most visible form of oil and gas industry air pollution is the flaring of natural gas.73 Routine flaring and venting of natural gas is used to reduce pressure at oil and gas production facilities. Venting allows escape of natural gas into the atmosphere and flaring burns off uncaptured gas upon release.74 Pollutants released during flaring have climactic impacts as well as localized air quality impacts.75 Continuous flaring, or flaring for many

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68 Ibid
consecutive days, has caused particulate matter to accumulate in the snow around Nuiqsut. In addition to air pollution caused by industry, there are sources within the community that to a lesser extent contribute to poor air quality, including the power plant and the gravel pit. Poor air quality has a wide array of public health impacts, such as increasing the rate of certain heart and lung diseases, cancers, and strokes. Some community members have expressed the need for industry to evaluate the potential reclamation or storage of natural gas instead of burning it during flaring events.

In Nuiqsut, CPAI measures ambient concentrations of the following air quality pollutants: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter, or dust, with a diameter of 10 microns or less (PM10), and particulate matter with an diameter of 2.5 microns or less (PM2.5) for the monitoring location in Nuiqsut. These air quality pollutants are regulated by Environmental Protection Agency (EPA) under the Clean Air Act, however they are not the only known air quality pollutants. The EPA sets standards for 187 other “air toxics” with serious known or suspected health effects. The community of Nuiqsut has expressed the need for additional air pollutant measuring and monitoring to safeguard to health of residents.

The ambient air quality and meteorology monitoring station in Nuiqsut is located at the

![Figure 9: Nuiqsut Air Quality Monitoring Station Location](image-url)
northern edge of community, approximately 400 meters north-northwest of the electrical generators. Currently, the Nuiqsut Monitoring Program is being conducted to document air quality in Nuiqsut and the data may also be used to support various ambient air quality impact analyses conducted for oil field development in the nearby areas.80

The EPA’s Air Quality Index (AQI) is converted from observed concentrations to a 0 to 500 scale meant to represent effects on human health. The higher the AQI value, the greater the level of pollutants in the air, and the greater the health concerns. Table 6 depicts the EPA Air Quality Index Levels. In 2019, measurements for ozone, carbon monoxide, sulfur dioxide, and smaller particulate matter, or dust (PM2.5), were all within the AQI of Good, indicating air quality is considered satisfactory, and air pollution poses little or no risk. The pollutant nitrogen dioxide was primarily Good, but reached a level of Moderate for a short time in February 2019.81 A Moderate level indicates air quality is acceptable, however, for some pollutants there may be a moderate health concern for a very small number of people who are particularly sensitive to air pollution, such as children and elders.82

The Unhealthy for Sensitive Groups level indicates when members of sensitive groups may experience health effects due to air pollution, however the general public is not likely to be affected. For larger dust, particulate matter PM10, a Moderate level was recorded five times over the course of 2019, and once hit a level of Unhealthy for Sensitive Groups in October of 2019.83

<table>
<thead>
<tr>
<th>Level</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>0 to 50</td>
<td>Air quality is considered satisfactory and air pollution poses little or no risk.</td>
</tr>
<tr>
<td>Moderate</td>
<td>51 to 100</td>
<td>Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to ozone may experience respiratory symptoms.</td>
</tr>
<tr>
<td>Unhealthy for Sensitive Groups</td>
<td>101 to 150</td>
<td>The general public is not likely to be affected in this range. People with heart and/or lung conditions, elders, and children are at a greater risk from ozone or particulates.</td>
</tr>
<tr>
<td>Unhealthy</td>
<td>151 to 200</td>
<td>Everyone may begin to experience adverse health effects and members of sensitive groups may experience more serious health effects.</td>
</tr>
<tr>
<td>Very Unhealthy</td>
<td>201 to 300</td>
<td>Health alert: everyone may experience more serious health effects.</td>
</tr>
<tr>
<td>Hazardous</td>
<td>301 to 500</td>
<td>Health warnings of emergency conditions. The entire population is more likely to be affected.</td>
</tr>
</tbody>
</table>

81 Ibid
The spike in nitrogen dioxide as well as multiple spikes in particulate matter are harmful, especially for children and elders, who are considered particularly sensitive to air pollution. Residents have voiced concern that air pollution from the oil and gas industry contributes to asthma and respiratory infections in villagers, particularly young children. The oil and gas industry is releasing air quality pollutants during normal operations as well as during flaring and in the event of leaks. Research has shown that children exposed to outdoor particulate matter, PM2.5 and PM10, were more likely to develop asthma and need emergency room or hospital treatment for it.\(^85\) There is also growing evidence that asthma symptoms can be aggravated, or events triggered by exposure to nitrogen dioxide, including moderate evidence that short-term exposure to nitrogen dioxide while indoors can increase hospital admissions and mortality.\(^86\)

Respiratory diseases have been a major cause of morbidity and mortality in rural Alaska historically, and respiratory issues remain a frequently cited concern across the borough. Chronic lower respiratory disease (CLRD) describes a number of respiratory illnesses, including chronic obstructive pulmonary disease (COPD), and others, that involve irreversible damage and reduced function of the lungs. CLRD emerged as a leading cause of death in the borough in the mid-1980s and has been the 5th leading cause of death in the borough for most years since 1990. Mortality rates from CLRD across the Borough remain roughly twice statewide and national rates.\(^87\)

Determining the air quality impact of development in and around Nuiqsut is a challenge, however, as both PM2.5 and PM10 are naturally occurring in the Colville River Delta, experienced as airborne dust. Recorded wind data since the 1980s has shown that instead of circulation based on pressure, wind along the Beaufort Sea coast is affected primarily by the arctic sea breeze and the mountainous Brooks Range.\(^88\) Primary sources of wind-born dust in rural communities are gravel infrastructure, exposed riverbeds, unpaved airfields, gravel pits and/or stockpiles, all of which can be found in Nuiqsut and the surrounding lands. CPAI noted elevated concentrations of airborne dust when silt is lifted from the Colville River banks during periods of high winds. This corresponds with the wind measurements from Nuiqsut Airport meteorological station indicating highest winds in 2019 occurred primarily from the east northeast, from the direction of the main channel of the Colville River and gravel material sites across the river. Oil and gas gravel infrastructure, currently encompassing 165 acres at Alpine alone and growing with the CD-5 development, is an additional source of airborne dust. Nuiqsut residents have reported poor air quality in their community, and have established residents are highly affected by dust since at least 2007.\(^89\),\(^90\) For over 20 years, residents across the North Slope have reported observable


haze from oil and gas facilities, increased dust, locally produced smog, increased atmospheric turbidity, and decreased visibility. Lack of a pre-development air quality baseline hampers an assessment of North Slope air quality and the potential impact of proposed oil and gas developments.

The community has recently been made aware of the report database for air quality that is available on the North Slope Science Initiative (NSSI) website. Historical reports on air quality and reports and studies on other issues related to development in the region are available at: https://northslopescience.org/nuiqsut.

Residents are particularly concerned about the levels of volatile organic compounds (VOCs). A short-term study of VOC concentrations by CPAI in 2014 extended into a longer-range monthly sampling program that was initiated later the same year. The most recent report published in 2021 followed a six-month sample procedure. Samples were collected once a month in Alpine (CD-1), the village of Nuiqsut, and the urban city of Anchorage. The samples were analyzed for 144 VOCs, in which only 19 were detected from the samples collected in the two North Slope areas while 22 were detected in Anchorage. The VOCs of interest are ones due to the incomplete combustion of fuel; 2-propanol and ethylene were detected at large concentrations at CD-1 but non-detectable in Nuiqsut or Anchorage. Ethane, propane, and n-pentane were high in CD-1 and lower or not detected in Nuiqsut and Anchorage. There was not an analysis of how wind from CD-1 would affect air quality in Nuiqsut. Additionally, the study did not consider environmental meteorological data. Ambient air temperature and precipitation in the air can play a large role in air quality and transport of pollutants. Historical air quality data after the development of Alpine but before Nuiqsut converted to natural gas; that data should be evaluated to better determine how the fuel source change affected Nuiqsut air quality. Furthermore, additional studies comparing Nuiqsut air quality to another inland village such as Atqasuk would better dictate air quality in North Slope villages that are not as affected by industry. Finally, a yearlong study of air quality linked with source modelling would round out the information needed to further analyze


\[92\) Ibid
Nuiqsut air quality and the origin of the pollutants in concern.93

5.4. The Colville River and Fish Habitat

The Colville is the largest river basin north of the Brooks Range, draining a large portion of the mountains and foothills as it meanders north through the flatlands of the Arctic Coastal Plain, where flooding and erosion has opened new channels. The river has a long history as a hunting, fishing, and trading area, and provides an essential transportation corridor for Nuiqsut residents.94

Winter transportation on the Colville River is primarily by snowmachine. In summer, Nuiqsut residents utilize personal boats to fish, hunt, and transit the river, and for access to the Beaufort Sea to hunt seals on summer pack ice and Bowhead whales during the fall migration.95 The existing boat ramp on the Nigliq Channel has become unusable by larger vessels as thaw-related bank erosion increases sediment deposits and cut banks collapse and fill the riverbed. Sediments deposited from the riverbanks flow downstream where shallower waters limit travel by boat.96 In addition, the road to the boat ramp often washes out during breakup, requiring ongoing maintenance.97 During the 2015 and 2016 Comprehensive Planning process in Nuiqsut, need for boat and trailer access to a boat ramp on the main channel of the Colville was mentioned by several residents. Construction of an alternative subsistence access to the river’s main channel was completed in August 2020. The existing Colville River Access Road was extended 3.7 miles southeast to a turnaround point at the river’s bluff. It is intended to provide subsistence access to the deeper channel. Upgrades to the Colville River Access Road in the near future may include further extending the road, installation of a boat ramp, and/or widening the roadway.98 The NPR-A Mitigation Impact Grant Program provided $2.85 million to assist in acquiring the gravel needed to construct the road.99

The community of Nuiqsut has no significant flood history, however flooding of the Colville does occur, caused by ice jams in River channels or heavy precipitation in the Delong Mountains of the western Brooks Range. A number of authors have shown that the most damaging floods in the Colville River Delta are associated with above average snowpacks that are melted by rainstorms and sudden high temperatures.100 During breakup when the snowpack is melting, Nuiqsut’s boat dock and road to the landfill can be inaccessible due to high water. In June of 2004, floodwaters on the Nechelik Channel rose to within 10 feet of the top of the bank, flooding

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95 Ibid
over two bridges on the landfill road. During late May 2020, widespread flooding occurred throughout the Colville River Delta as coincident ice jams in the East Channel and the Nigliq Channel caused a backup of floodwater. Erosion along the Colville River and its tributaries is increasing at alarming rates. The community’s water tank, water treatment plant, and power plant are all at risk to a severe flooding event. Replacement of these critical facilities at a new location should be considered.

Fish Habitat. The Colville River is rich with fish, including Chum salmon, Pink salmon, piaquluk (Dolly varden), iqalusaqq (Least cisco), iqlukpik (Arctic char), sulikpauq (Arctic grayling), aanaakliq (Brook whitefish), and other whitefishes. Summer 2020 was the first year of a five-year fish monitoring project by CPAI in the Ublutuoch River (Tinmiaqsiuqvik) drainage, about 6.5 miles northeast of Nuiqsut. The project captured fish at different times throughout the open-water season and recorded water chemistry. CPAI reported that 7,325 fish were counted in 2020, comprised of 11 species. Sulikpauq were the most abundant species at 72 percent of the total catch, followed by aanaakliq at 11 percent, ninespine stickleback at nine percent, and round and humpback whitefish at two percent each. All other species accounted for the remaining four percent of the catch, which included 33 pink salmon.

Climate related challenges for fish include early snowmelt, lower late season water levels, higher temperatures, and increased turbidity by sedimentation. Residents have reported changes to the health of fish and there is rising concern about the impact of climate change and oil and gas development to fish habitat. In October 2013, subsistence fishermen in Nuiqsut caught aanaakliq with what turned out to be mold from the genus Saprolegnia, exemplified by fuzzy grayish-white patches on their bodies, fins, and heads; cotton-like masses almost covered the eyes of some fish. Saprolegnia parasitica is rare in Alaska; it is prevalent in fresh water in mild and warm climates. Residents’ observations and concerns regarding the prevalence of fish mold is often attributed to the Upper Colville River and downstream from Umiat, a former Air Force Station and the contamination common at Formerly Used Defense Sites, citing that U.S. Army Corps of Engineers does not keep the village informed of clean-up activities in the area.

Researchers have tested the water of the Colville River, finding that the river’s concentrations of metals, diesel, and organics does not seem to have changed in 20 years. There is not long-term data on water temperature, but residents say that the river’s water is warmer than it has been in the past and an earlier spring thaw now erodes riverbanks and leads to murkier water. The North Slope Borough Department of Wildlife Management created an in-house working group to monitor the disease’s occurrence, timing, and

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105 Giefer, J. and B. Blossom. 2020. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Arctic Region, effective June 1, 2020. Alaska Department of Fish and Game, Special Publication No. 20-01, Anchorage.
distribution as well as perform necropsies of healthy and inflected fish and investigate factors that could be contributing to the occurrence of Saprolegnia.108

Climate change is having huge effects on Arctic ecosystems. Thawing permafrost allows rivers to carve into once-frozen soil and dump sediment into aquatic ecosystems, which can upset nutrient balances and water chemistry, and stress fish. Warmer air and water temperatures can also bring new diseases to fish, birds, and other wildlife, including some that can spread to humans. Factors important to the survival of fish species include strength and persistence of easterly winds, sea level, storm frequency, and water temperature. Oil and gas pipelines on the floor or coast of the Beaufort Sea may affect fish reproduction, growth, and survival.109 Continued monitoring of freshwater fish in the region is recommended to analyze impacts of climate change and oil and gas development on fish health and population. The Colville River, and the Colville River Delta, are specified in the State of Alaska’s Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, and therefore protected under Alaska Statute.110 (AS 16.05.871)

5.5. The Beaufort Sea and Marine Mammals

Nuiqsut lies about 18 miles inland from the coast of the Beaufort Sea. As a traditional Iñupiaq community, subsistence hunting and harvesting is of extreme importance in Nuiqsut, and the Beaufort Sea provides marine resources for health, happiness, and survival.

Residents have been witnessing changes to the Beaufort Sea and loss of sea ice for many years. In winter, the frozen Beaufort Sea extends from the Arctic Coastal Plain providing snow machine access for subsistence harvest of ice seals and walrus, as well as access for polar bear to come ashore.111 In late 2019, ice cover of the Beaufort and Chukchi Seas hit a record low of 270,000 square miles, half of what it averaged between 1981 and 2010.112 Nuiqsut residents have reported hazardous ice travel on the Beaufort Sea.113

The lengthened ice-free period allows Nuiqsut residents to travel by boat as early as May and as late as November.114 Loss of the protective cover of sea ice has a huge impact on the coastline, newly susceptible to wave and wind action year-round. Additionally, the relative abundance of surface water offshore increases moisture in the air, contributing to the increase in precipitation across the North Slope.

Open water has brought increased vessel traffic along the coast, and foreign vessels have been spotted in nearshore waters from the whaling communities of the North Slope. Residents have reported that subsistence whaling has been impacted by both the increase in marine traffic

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110 Giefer, J.and B. Blossom. 2020. Catalog of waters important for spawning, rearing or migration of anadromous fishes – Arctic Region, effective June 1, 2020. Alaska Department of Fish and Game, Special Publication No. 20-01, Anchorage.
and the debris left behind.115 As Arctic oil exploration and shipping routes become more heavily frequented vessel traffic is expected to increase.

The Beaufort Sea, like all the world’s oceans, is becoming more acidic. The primary cause of uptake of carbon dioxide from the atmosphere as oceans absorb about 30 percent of the carbon dioxide released in the atmosphere. When carbon dioxide is absorbed by seawater a series of chemical reactions occur resulting in an increased concentration of hydrogen ions, causing the seawater to become more acidic, and reducing the abundance of carbonate ions, the building blocks for shelled organisms.116 Acidification of the Beaufort Sea was measured in 2011 and 2012 by the National Oceanic and Atmospheric Administration (NOAA). At that time, NOAA predicted that acid in the Beaufort Sea will reach levels that threaten the survival of shelled organisms by the year 2030. The findings show that by 2012 some areas of the Beaufort Sea had already reached these levels of high acidification.117

Marine Mammals. Marine mammals in the Nuiqsut area are important sources of food for the traditional Inupiat community. Reductions of Beaufort Sea ice affects hunters directly by changing access and altering the utility of ice as a substrate for hunting. Indirectly, sea ice changes alter the distribution, timing, behavior and local abundance of marine mammals.118 For more on climate related impacts to subsistence hunting and harvesting in Nuiqsut, see Chapter 6: Subsistence.

Marine mammals found in the Nuiqsut region include bearded seal, beluga whale, bowhead whale, harbor porpoise, polar bear, ribbon seal, ringed seal, spotted seal, and walrus. All marine mammals are important to Nuiqsut residents, however Bowhead whale and Polar bear are the most heavily studied by the scientific community and are often used as indicator species to understand environmental conditions affecting marine mammals in the Arctic.

Changes to Bowhead whale migration have been dramatic over the past two years. Sea surface temperatures were significantly warmer than average in 2019, Alaska’s hottest year on record, and the timing of the bowhead whale migration was also different. Only a few whales have been spotted in Utqiaġvik by late October, and aerial surveys observed whales farther north than in previous years.119 2020 was also an unusual year as whales were observed in dense concentrations, with nearly half of whales observed near Utqiaġvik, between Point Barrow and Dease Inlet. Dense concentrations of feeding whales in 2020 was attributed to perfect environmental and wind conditions creating upwelling of krill and optimal feeding conditions120

Polar bear population surveys were similarly unique in recent years. In 2019, a survey of the Southern Beaufort polar bear population

identified 31 fat healthy polar bears onshore in July, compared to only three in 2017, when sea ice retreat had been similarly early.121 122

According to NOAA Fisheries, reliable population data does not exist for ice seals including bearded, ribbon, and ringed seals. Researchers are at work analyzing population estimates for bearded and ringed seals from Bering and Chukchi Sea surveys conducted in 2016 and 2020.123 It is anticipated that ocean warming, disappearance of sea ice, ocean acidification, increased Arctic shipping, and oil and gas exploration and development is impacting ice seal populations by reducing their preferred sea-ice habitat.124

5.6. Permafrost Thaw: Erosion, Subsidence, Infrastructure, and Ice Cellars

Erosion and land subsidence threaten the stability of the landscape and essential community infrastructure. Warming air and water temperatures are the catalyst for both processes as they put permafrost soils at risk, fragile in their composition of ice, silt, and sand. Thawing permafrost has been reported extensively in Nuiqsut and neighboring North Slope communities which threatens natural slopes and the integrity of the built environment alike.125, 126, 127

Permafrost thaw also increases the amount of surface water on the tundra. Some 600 more lakes linked to thawing permafrost have appeared on the North Slope since 1955.128 Additional surface water accelerates thaw of underlying frozen soil and adds moisture to the air, contributing to an increase of precipitation. Permafrost soils are one of the largest long-term stores of carbon on land. Within permafrost there is frozen organic matter that will decompose once thawed and release carbon into the atmosphere as carbon dioxide or methane, potent gasses which trap heat in the atmosphere and further contribute to climate change.129

Erosion. Nuiqsut residents have reported loss of land due to erosion, as well as difficulty travelling and accessing traditional hunting areas.130, 131 Inland riverbanks, long protected by continuous permafrost impervious to thaw, are experiencing thaw and erosion. Erosion of the banks of the Nigliq Channel has been surveyed by the oil and gas industry at multiple transects about 5 miles downstream from Nuiqsut.132 As the community upstream has witnessed, active

124 Ibid
sloughing with prominent tension cracks is found along the western bank of the Nigliq Channel. Sloughing bank faces are steep and moderately vegetated, extending to the water line and lacking any exposed beach at the toe of the bank. Minimal signs of erosion were found on the eastern bank, where sediment and gravel deposit. In 2009, erosion on the western bank within the community of Nuiqsut was measured at 100 x 300 feet, with an estimated loss of 3-5 feet per year due to erosion.

In addition to permafrost thaw, factors contributing to erosion of the Nigliq Channel include a 2008 discharge from the water tank overland into the river, excavation of mammoth tusks from the riverbank resulting in creation of a deep cave, and sedimentation of the river due to ongoing maintenance and protection of the boat ramp. In 2009, erosion on the western bank within the community of Nuiqsut was measured at 100 x 300 feet, with an estimated loss of 3-5 feet per year due to erosion.

Many of the community’s essential utilities including the water tank, power plant, water treatment plant, and community service center, are located just a few hundred feet from the bank of the Nigliq Channel, where erosion is most severe and permafrost melt is visible in aerial imagery. The power plant, approximately 250 feet from the bank of the Nigliq Channel, received upgrades scheduled for completion in April 2021 to provide thermal stabilization to the utility and the underlying permafrost soils. Other utilities which may be impacted by erosion include sewer outflow lines and the existing boat ramp.

Culverts and drainage pipes are often bent during road maintenance and water is unable to drain properly. Functioning culverts are required to keep up with increased annual precipitation and avoid pooling water, which will further erode slopes and threaten buildings above.

**Land Subsidence & Ice Cellar Failure.** Land subsidence can wreak havoc on infrastructure with piles in permafrost or on thin gravel pads with poor thermal integrity. Buildings can shift unevenly, and utility corridors can be severed or blocked. Communities in the North Slope Borough have experienced significant subsidence of several feet in some areas, and residents of Nuiqsut have reported sinking homes, damage to buried water lines, and failure of several traditional underground ice cellars.

Ice cellars, dug deep into the permafrost, have historically provided a form of natural refrigeration for Arctic residents. They provide no-cost refrigeration, storing bowhead whale meat as well as caribou, fish, and other subsistence foods. Ice cellars are unusable when they fill with water, which occurs when the walls of the cellar melt or land subsides, and water finds its way into the space from underground. Failure of ice cellars ruins valuable subsistence foods and prevents use of natural refrigeration. Iñupiat families have been utilizing ice cellars as

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a part of their cultural heritage for thousands of years and they are a part of the subsistence harvest and spiritual process. The loss of ice cellars is a cultural tragedy. Purchasing a freezer or several freezers to hold large animals and the constant power required to run them can be an economic hardship and contribute to food insecurity within the community.

In April 2014, an inventory of Nuiqsut ice cellars revealed that seven ice cellars were in use. The inventory showed that those located nearest to the river were warming and, in some cases, filling with water. A decade-long thermal monitoring study of ice cellars in Utqiaġvik noted that although climate change has considerable potential for affecting ice cellars, sediment chemistry, local hydrology, and urbanization are also important impacting factors.\(^\text{142}\)

To address the growing issue of food insecurity and to ensure physical safety and the safety of food in local ice cellars, the Nuiqsut community is investigating several options for adaptation, including: improving the storage environment in existing cellars, establishing new cellars in a location with a more conducive environment, or developing alternative methods for food storage.\(^\text{143}\) Continuing to monitor the conditions in existing cellars, improving conditions that prevent safe air-drying of fish, caribou, whale and other subsistence food, and stabilizing them as needed to prevent damage or collapse are paramount. Constructing new ice cellars using modern design and technology would alleviate the concerns about using existing ice cellars that are potentially unsafe. Community freezers could also be used to supplement storage needs if needed.\(^\text{144}\)

### 5.7. Plant Communities and Tundra Fires

Tundra fires are increasingly becoming an issue across the Arctic. In Alaska and Canada’s Northwest Territories, the number of lightning-sparked fires has risen 2 – 5 percent per year over the last four decades.\(^\text{145}\)

The severity of tundra fires, in part are determined by plant composition and soil moisture content, with fires in tussock tundra communities typically less severe than those in shrublands.\(^\text{146}\) Climate related changes seen in Nuiqsut and across the North Slope include altered plant composition and soil moisture content. Warming temperatures invite woody brush northward, where new plants may outcompete native tundra plants.\(^\text{147}\) Tundra plants have shallow roots, which protect underlying soil by keeping it moist.\(^\text{148}\) Woody plants have deeper roots than grasses, remove more water from the soil, and burn hotter and

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for longer when on fire.\textsuperscript{149, 150} This process is self-reinforcing: newly open ground is fertile for non-native and invasive species, which continue to dry and warm the soil, releasing carbon from permafrost stores into the atmosphere to trap heat and contribute to a warming planet.\textsuperscript{151, 152} Dry and warm soil is at risk of tundra wild fire, subjects underlying permafrost to rapid melt while burning plants above, which can result in land subsidence, water accumulation, and unstable ground.\textsuperscript{153} Topographical changes due to tundra fire can continue to alter the environment by affecting caribou migration, to the detriment of subsistence hunters in Nuiqsut.

5.8. Invasive Species

Invasive species are becoming an increasing concern for Nuiqsut residents as shrubs and other plants with deep root systems out compete shallow-rooted tundra plants.\textsuperscript{154, 155} Residents have reported tall stands of woody plants like willow preventing or restricting caribou migration, and the appearance of porcupine in the area indicates a shifting habitat.\textsuperscript{156}

Satellite data from over the last 35 years tracks a flourishing green Arctic; however, studies specific to northern Alaska show that at monitored sites, many low-lying tundra plants and grasses have been replaced by spruce or...
alder shrubs, a process known as ‘browning’ of the previously green landscape.\textsuperscript{157}

In the coastal plain of the Arctic National Wildlife Refuge, a 27-year review of plant cover found extreme vegetation changes at plots which had very high soil ice content or surficial ice wedges where thaw caused soil subsidence and surface wetting.\textsuperscript{158} Results of the study demonstrate that invasive and non-native plants are likely to be found in areas of localized subsidence from melting ground ice or due to floodplain dynamics. Warming air temperatures are expected to continue to increase shrub and invasive species dominance on the North Slope.\textsuperscript{159} Monitoring of exposed slopes and thaw areas near Nuiqsut is suggested to control rooting of invasive plants.

5.9. Land Mammals and Migratory Birds

Terrestrial mammals, as well as migratory birds and eggs, are an important food source for Nuiqsut residents. Changes to local populations and seasonal migrations of land mammals and birds will continue to impact the health and safety of the human population. For more on climate related impacts to subsistence hunting and harvesting in Nuiqsut, see Chapter 6: Subsistence.

The abundance of land mammals and annual influx of birds in Nuiqsut was an attraction to the area for builders and founders of the community.\textsuperscript{160} While some smaller species are year-round residents of the local landscape, such as fox and lemming, the majority of mammals and nearly all birds are seasonal migrators. Table 7 includes a list of common terrestrial mammals and migratory birds found in the Nuiqsut Region.

<table>
<thead>
<tr>
<th>Terrestrial Mammals and Migratory Birds of the Nuiqsut Region\textsuperscript{161}</th>
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</thead>
<tbody>
<tr>
<td><strong>Terrestrial Mammals</strong></td>
</tr>
<tr>
<td>Alaska Marmot, Arctic Ground Squirrel, Beaver, Black Bear, Brown Bear, Caribou, Dall Sheep, Arctic Fox, Red Fox, Brown Lemming, Collard Lemming, Lynx, Moose, Muskox, Muskrat, Porcupine, River Otter, Snowshoe Hare, Barren Ground Shrew, Tundra Shrew, Northern Red-backed Vole, Northern or Tundra Vole, Least Weasel, Short-tailed Weasel or Ermine, Wolf, Wolverine</td>
</tr>
<tr>
<td><strong>Waterfowl</strong></td>
</tr>
<tr>
<td>Tundra Swan, Greater White-fronted Goose, Lesser Snow Goose, Canada Goose, Black Brant, Mallard, Green-winged Teal, American Wigeon, Northern Pintail, Northern Shoveler, Greater Scaup, Lesser Scaup, Common Eider, Kind Eider, Spectacled Eider, Surf Scoter, Long-tailed Duck, Red-breasted Merganser</td>
</tr>
</tbody>
</table>


\textsuperscript{158} Jorgenson, Joyce C., Martha K. Raynolds, Joel H. Reynolds, Anna-Marie Benson. 2015. Twenty-Five Year Record of Changes in Plant Cover on Tundra of Northeastern Alaska. Arctic, Antarctic, and Alpine Research, 47(4), 785-806, November 1, 2015.


Terrestrial Mammals and Migratory Birds of the Nuiqsut Region

<table>
<thead>
<tr>
<th>Seabirds</th>
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<th>Shorebirds</th>
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<tr>
<th>Songbirds</th>
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</thead>
<tbody>
<tr>
<td>Common Raven, Arctic Warbler, Varied Thrush, American Robin, Northern Wheatear, Bluethroat, Northern Shrike, Yellow Wingtail, Yellow-rumped Warbler, Yellow’s Warbler, Wilson’s Warbler, Savannah Sparrow, American Tree Sparrow, Dark-eyed Junco, White-crowned Sparrow, Smith’s Longspur, Lapland Longspur, Snow Bunting, Rusty Blackbird, Common Redpoll, Hoary Redpoll</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Avian, Upland Birds and Raptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upland birds: Sandhill Crane, Rock Ptarmigan, Willow Ptarmigan</td>
</tr>
<tr>
<td>Raptors: Golden Eagle, Northern Harrier, Rough-legged Hawk, Merlin, Peregrine Falcon, Gyrfalcon, Short-eared Owl, Snowy Owl</td>
</tr>
</tbody>
</table>

**Caribou.** Caribou are an important subsistence species in Nuiqsut, and the tundra ecosystem of the North Slope supports several caribou herds. There are three major herds on the North Slope that migrate through the Nuiqsut area: the Teshekpuk Lake Herd (TCH), Central Arctic Herd (CAH), and Western Arctic Herd (WAH).162

For 20 years, the oil and gas industry has collected aerial surveys, remote sensing, and analyzed telemetry data to record caribou distribution and movements. Monitoring of the Alpine Development and the Greater Moose’s Tooth oil and gas leasing unit began in 2001. According to the 2020 Caribou Monitoring Study for the Alpine and Greater Moose’s Tooth, the Teshekpuk Lake Herd consistently uses the area west of the Colville River to some extent during all seasons of the year. The Central Arctic Herd primarily uses the area east of the Colville River, although movements across the Colville River and onto the Colville River delta are not uncommon. Aerial transect surveys have demonstrated that only low levels of calving occur in the Greater Moose’s Tooth unit. This result is consistent with analysis of telemetry data, which confirms that most Teshekpuk Lake Herd females calve around Teshekpuk Lake or areas to the west. East of the Colville River delta, high density calving occurs by Central Arctic Herd caribou.163 The highest density of caribou in the Greater Moose’s Tooth Unit during the postcalving season was counted in 2020. Telemetry data indicate that animals were still

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migrating north from wintering in the Brooks Range.\textsuperscript{164}

Oil and gas infrastructure near the Colville River delta is encountered occasionally by caribou from the Teshekpuk Lake and Central Arctic Herds. Movements by satellite- and GPS-collared caribou since the 1980s suggest encounters with oil and gas infrastructure occur infrequently during the calving, mosquito, and oestrilid fly seasons and during fall migration.\textsuperscript{165} Since construction of the CD-5 road in 2013–2014, only one collared caribou has crossed the road, but very few crossings were recorded in the years before construction either. In recent years, radio-collared Teshekpuk Lake Herd caribou and, to a lesser extent, Central Arctic Herd caribou have occasionally crossed Greater Moose’s Tooth roads, with the highest crossing rates during fall migration and lowest during the postcalving and mosquito seasons.\textsuperscript{166} During the 2020 late summer and fall migration season, many TCH caribou moved towards Greater Moose’s Tooth roads with only a few individuals crossing the roads. Most caribou paralleled the road along the west side until they passed oil and gas infrastructure. This apparent alteration of direction of travel followed by paralleling the road may be attributed to Teshekpuk Lake Herd caribou having less exposure to pipelines than Central Arctic Herd caribou, as well as a natural tendency of caribou to follow linear features.\textsuperscript{167}

Teshekpuk Lake is the largest lake north of the Brooks Range at 211,000-acres, located about 50 miles west of Nuiqsut. It spans a distance of 20 miles at its longest point and is 20 feet deep. It lies entirely within the NPR-A. In 1977, the Secretary of the Interior also designated the Teshekpuk Special Area to protect the area’s habitat values for waterfowl, shorebirds and the Teshekpuk Lake Caribou Herd. The area was expanded to 3.65 million acres in 2013. During the spring, thousands of caribou crowd the area to calve, and during the summer they seek relief from insects.\textsuperscript{168}


\textsuperscript{165} Ibid

\textsuperscript{166} Ibid

\textsuperscript{167} Ibid

Residents of Nuiqsut have been reporting changes in seasonal timing of caribou migration for years. One study analyzed movement data from over 1,000 individual caribou from seven major herds, spanning over 1,800 miles across Alaska, Yukon, Northwest Territories, and Nunavut Canada, from 1995 to 2017. They found departure to be queued by ocean-driven climate indicators and the speed of migration to be very changeable depending on maternal body condition and therefore conditions that limit insect harassment. Earlier spring migration timing caused earlier calving and higher survival rates. Nuiqsut residents are taking note as caribou adapt to dynamic and unpredictable environments. More on subsistence hunting, harvesting, and gathering, and how these activities may be impacted by climate change is included in Chapter 6: Subsistence.

Migratory Birds. The spring brings migratory birds to the North Slope of Alaska and the Nuiqsut region. Teshekpuk Lake is home to millions of ducks, geese, sandpipers, and other birds stay at the lake to mate, nest, and raise their young.

In addition to the MBTA, raptors within the NPR-A Colville River Special Area were protected starting in 2013. In 2021, the BLM extended these protections to the entire NPR-A. Consequently, the Colville River Special Area was eliminated.

The oil and gas industry surveys eiders and yellow billed loons within the Colville River Delta. The density of Spectacled Eiders on the Colville River Delta appeared to be near average in 2020. Spectacled Eider numbers have been stable since surveys began in 1993. In contrast, the density of King Eiders was well above average in 2020, and numbers have increased within the Colville River Delta over the past 30 years. For yellow billed loons, 31 nests and 14 chicks were surveyed in 2020, a nest count well above average but a chick count slightly lower than usual. Over the last 20 years, adult population growth has been fairly stable, whereas the number of young has generally declined since 2010. Predation on eggs appears to be the primary cause of decline.

Migratory birds are protected federally by the Migratory Bird Treaty Act (MBTA), which prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (16 U.S.C. 703–712, MBTA).

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175 Ibid.
In Nuiqsut, wild resources of animals, fish, and plants are harvested, processed, shared, and consumed in an economy and a way of life called subsistence. There are a number of definitions of subsistence and many different understandings of its meaning. Subsistence implies the need to understand the land, its climate, environment and wildlife, and to respect and honor these in the way one hunts, gathers, harvests and consumes nature’s wealth. Subsistence is also a set of cultural and spiritual traditions, values, and skills essential for the survival and well-being of both the individual and the community. The concept of sharing is the cornerstone of the subsistence way of life for the Iñupiat.176

The North Slope Borough Municipal Code defines subsistence as

“An activity performed in support of the basic beliefs and nutritional needs of the residents of the Borough and includes hunting, whaling, fishing, trapping, camping, food gathering, and other traditional and cultural activities.” (NSBMC 19.20.020)

The State of Alaska defines subsistence uses as

“...the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption; in this paragraph, "family" means persons related by blood, marriage, or adoption, and a person living

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in the household on a permanent basis.”

(AS 16.05.940(33))

Subsistence uses in Section 803 of the federal law Alaska National Interest Lands Conservation Act (ANILCA) is defined as

“...the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools or transportation; for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption; and for the customary trade, barter or sharing for personal or family consumption.”

ANILCA, the act passed in 1980 that designated more than 100 million acres of federal land in Alaska as new or expanded conservation system units, includes a priority for subsistence use over non-subsistence use. ANILCA also requires that an evaluation be completed for impacts of land use on subsistence (Section 810) and that reasonable access be provided for subsistence on public lands (Section 811).

While the term subsistence implies the use of natural resources for physical needs, it may not always convey the spiritual, cultural, and community importance of harvest activities. For Alaska Natives of the North Slope, subsistence is both a connection to the land and to Iñupiat ancestors who have passed down traditional knowledge through the generations. It is not only a way of life, but also the joy of living from the gifts that the Creator provides.

The U.S. Department of the Interior publishes the Federal Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska (subsistence harvest regulations). These are harvest rules specifically for subsistence users that regulate seasons, harvest limits, methods, and customary and traditional use determinations for the subsistence taking of wildlife. The subsistence harvest regulations are created and implemented with assistance from the USDOI’s Federal Subsistence Management Program, which aims to provide Alaskans living in rural areas the opportunity for a subsistence way of life on federal public lands.

The Subsistence Management Program is subdivided into regional advisory councils. The North Slope Regional Advisory Council represents eight rural communities, including Nuiqsut. Currently there is one council member from Nuiqsut on the North Slope Regional Advisory Council and three vacancies.

The Kuukpik Subsistence Oversight Panel (KSOP) was established in 1996 at the start-up of the Alpine oilfield and is funded by CPAI. KSOP monitors oil and gas exploration and development activity in the region for potential impacts to subsistence resources on behalf of the community. KSOP is made up of representatives of the City of Nuiqsut, the Native Village of Nuiqsut, and the Kuukpik Corporation.

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6.1. Village Area of Influence

The Nuiqsut Area of Influence (AOI) is a planning boundary outside of the community that identifies the commonly used traditional areas used for subsistence activities. The primary purpose of identifying the AOI is to protect areas that are traditionally important to local residents though the regulation of permitting activities; permit applicants will be required to consult with the appropriate entities to determine final permit stipulations.

The Nuiqsut AOI extends hundreds of miles from the community, as shown in Map 3. The AOI is large and changes over time, partly because many subsistence species are migratory. Bowhead whales and caribou alike may migrate thousands of miles, arriving in the AOI at a specific time in the season and/or their life cycle. Migratory birds may spend only a few weeks of their year within the AOI, using routes that change over time. Altogether, the AOI covers over 33,000 square miles and encompasses historic subsistence areas, mirroring the subsistence area shown in the Nuiqsut Paisañich.

The Nuiqsut AOI included in this plan is comprised of 29,289 square miles and is generally bound by the following areas:

- Utqiagvik and Atqasuk to the west,
- Along the foot of the Brooks Range to the south with one area extending further south, almost to Anaktuvuk Pass,
- North into the Beaufort Sea to as far as 70 to 100 miles, including Cross Island, and East into the Arctic National Wildlife Refuge (ANWR) to Kaktovik.

Complementing the AOI map is Map 4, the Paisañich Nuiqsut Travel and Trade Routes Map that illustrates the areas most frequently traveled by residents.

The community’s subsistence areas and patterns are determined not only by the seasonality of resources but by the village’s geographical position and periodic access limitations. The AOI overlaps the areas of influence of neighboring villages Utqiagvik, Atqasuk, Kaktovik, and Anaktuvuk Pass as is fitting with the cultural values for sharing and subsistence. The Anaktuvuk Pass AOI is also depicted on Map 2 to illustrate the strong relationship that the subsistence hunters in each community have with each other, sharing not only hunting areas but also harvests when needed. They are also strong voices in advocating for the protection and health of the caribou herds that traverse the two communities. Residents report that subsistence hunters from Atqasuk are traveling closer to Nuiqsut to harvest caribou than they have in the past and suggest that developing a communication system between subsistence hunters of other villages would be beneficial.

The AOI is not intended to be exclusive, but rather describes the area within which key subsistence resources are harvested and family traditional uses occur.

The 1979 Nuiqsut Paisañich and the 2018 Ethnographic Addendum provide in-depth discussions of both the nutritional and spiritual importance of subsistence activities to residents of Nuiqsut.
Nuiqsut Area of Influence
Map 3

Area of Influence is the area including important subsistence and cultural sites and community should be able to identify highest importance areas without devaluing the entire area of influence.
6.2. Subsistence Harvest and Sharing

Residents rely on a variety of seasonally abundant resources of terrestrial and marine mammals, fish, and waterfowl for some or all of their diet. Subsistence is important for the people of Nuiqsut for both food and cultural sustenance. It is a common and traditional practice for residents to share their subsistence resources with others within and outside the community. The sharing of subsistence resources with family members, elders, those who cannot hunt or fish, and other community members is a key Iñupiaq value and a source of pride and identity by people who give and receive those gifts. Nuiqsut residents are dependent on subsistence resources at all income levels. Expensive store-bought food makes the subsistence activities and sharing harvests even more important.

Hunting, fishing and gathering of food and plants are essential subsistence activities, especially among Iñupiaq households where the subsistence way of life remains an important source of food. Primary subsistence resources in Nuiqsut include caribou, sheep, bowhead whale, fish, and waterfowl. Seal, polar bear and furbearers are also important.\(^\text{180}\)

According to the North Slope Borough Economic Profile and Census Report, more than 95 percent of Iñupiat households in Nuiqsut used subsistence foods in 2019. This high number has only decreased very slightly since 1998, when 100 percent of Nuiqsut residents reported using subsistence foods.

**Table 8: Iñupiat Households Use of Subsistence Foods, 1998 – 2018\(^\text{181}\)**

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<td>98.8%</td>
<td>95.8%</td>
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Subsistence foods are not only available in Nuiqsut but comprise a large part of the local diet. Eighty percent of households in Nuiqsut reported that half or more than half of their diet came from subsistence foods in 2019.\(^\text{182}\)

Since 1998, NSB surveys reveal a consistent flow of subsistence foods to Iñupiat (and other) households throughout the North Slope. Beginning in 2010, there has been a small but statistically significant increase in the proportion of Iñupiat households that depended on other households for the majority subsistence foods in their households’ diet. In the last decade slightly more than 40 percent of Iñupiat households

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182 Ibid
have depended on other households for more than half of the subsistence foods in their diet. In 2018, more than 95 percent of Nuiqsut residents reported giving away subsistence foods. Forty-four percent of Iñupiat households in Nuiqsut reported receiving half or more of their diet from others in 2019.\(^{183}\)

Nuiqsut residents often share their subsistence foods with residents in Anaktuvuk Pass, each community assisting the other when either experiences a poor subsistence harvest.

### 6.3. Climate Change and Subsistence Resources

Data from recent years has shown changes to subsistence resources of all varieties and in all seasons. Half of Nuiqsut residents reported they did not get enough subsistence food because resources were not abundant in 2019. Residents have reported that the most significant reason for not being able to get enough subsistence foods is climate change. A vast majority, 71 percent, of Iñupiat household heads in Nuiqsut reported that Climate Change affected harvesting in 2019.\(^{184}\)

Changes to subsistence harvests is anticipated over time, as there are multiple resources and it is common to supplement a poor year of one resource with another more abundant resource, such as harvesting more fish or seals in a poor caribou year. However, the main concern is that in general subsistence activities have been decreasing across the North Slope. Expensive store-bought food is the only alternative. Store-bought foods that are shelf stable and for sale in Nuiqsut are often poor in nutritional value when compared to the subsistence foods they are replacing. Bowhead whale, for example, is high in omega fatty acids, protein, vitamins A, D, E, and essential minerals.\(^{185}\) A reduction in subsistence activities means residents may be paying more for foods that are substantially less healthy than subsistence foods.

Climate change is one of the main drivers of food insecurity for Iñupiat families on the North Slope by affecting access to and harvest of wildlife resources. Warming air and soil, melting permafrost, tundra fires, erosion and subsidence, and devastating coastal storm surges are all linked back to the Earth’s changing climate (for additional information, see Chapter 5: Natural Environment).

The warming climate has terrestrial and marine impacts. On land, melting permafrost and associated erosion and subsidence makes travel more difficult. Tundra fires, which eliminate food for caribou, are increasing in severity and duration.\(^ {186}\) Additionally, plant communities are changing as woody plants make their way north, affecting caribou migration and food sources.\(^ {187}\)

In marine ecosystems, the dramatic decrease in multi-year ice on the Beaufort Sea requires travelling greater distances to hunt, and therefore increasing the cost and safety burden to hunters. Changing ice conditions impacts the

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\(^{184}\) Ibid


health and survival or marine mammals. Ringed seals, for example, are reported to be less abundant and more widely dispersed, further increasing the cost and safety burden to hunters.\footnote{North Slope Borough. 2019. 2019 Economic Profile and Census Report. Prepared by UMIAQ Environmental, Don Callaway, and Charles Utermohle. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.} Disease of subsistence resource species, access to food such as lichen for caribou, and predation are huge determiners of animal and therefore human health, and a warming climate can easily create uninhabitable conditions. For example, during a very warm spell in July of 2019, the Yukon Inter-Tribal Fish Commission found a massive die-off of sockeye, chum, and pink salmon in the Koyukuk River in western Alaska. Similar pink salmon die-offs were reported in multiple rivers in the Norton Sound in 2019. The cause of these events is thought to be a heat wave as they otherwise appear to be healthy fish ready to spawn. Warm water holds less dissolved oxygen than cold water, so physiologically the salmon cannot get enough oxygen moving through their systems and died with healthy eggs in their bellies.\footnote{Prior, Ryan. 2019. The water is so hot in Alaska it’s killing large numbers of salmon. CNN. August 16, 2019. www.cnn.com/2019/08/16/us/alaska-salmon-hot-water-trnd/index.html.} This tragic event not only prevented subsistence use of the salmon, but also prevented spawning and fertilization of the salmon eggs which could mean a future reduction in salmon returning to these rivers.

Preservation of subsistence foods is also impacted by the changing climate. Overly wet or warm conditions can prevent proper air drying of fish, caribou and seal. Residents observe that warmer air and soil temperatures have lengthened the time it takes to freeze the whale meat and blubber.\footnote{Ibid} Ice cellars, dug deep into the permafrost, have historically provided a form of natural, no-cost refrigeration to Arctic residents. In April 2014, an inventory of Nuiqsut ice cellars revealed that just seven ice cellars were in use. The inventory showed that those located nearest to the Colville River were warming and, in some cases, filling with water.\footnote{Nyland, Kelsey E., Anna E. Klene, Jerry Brown, Nikolay I. Shiklomanov, Frederick E. Nelson, Dmitry A. Streletskiy and Kenji Yoshikawa. 2017. Traditional Iñupiat Ice Cellars (SIGUAQ) in Barrow, Alaska: Characteristics, Temperature Monitoring, and Distribution. Geographical Review, 107:1, 143-158, DOI: 10.1111/j.1931-0846.2016.12204.x https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1931-0846.2016.12204.x} Climate change and associated permafrost thaw is an obvious driver, with sediment chemistry, local hydrology, and urbanization also being important factors.\footnote{Climate.Gov. 2017. US Climate Resilience Toolkit, Case Studies: Iñupiat Work to Preserve Food and Traditions on Alaska's North Slope. September 13, 2017. https://toolkit.climate.gov/case-studies/%C3%B0lupiat-work-preserve-food-and-traditions-alaskas-north-slope} To address the growing issue of food insecurity and to ensure physical safety and the safety of food in local ice cellars, the Nuiqsut community is investigating several options for adaptation, including: improving the storage environment in existing cellars, establishing new cellars in a location with a more conducive environment, or developing alternative methods for food storage.\footnote{Ibid}

6.4. Marine Mammals

Aġviq (Bowhead Whale). Subsistence harvesting of bowhead whales provides important nutritional and cultural needs for many Alaska Native communities. The Alaska Eskimo Whaling Commission (AEWC), comprised of 11 communities, locally manages the Alaskan harvest through an agreement with the U.S. National Oceanic and Atmospheric Administration. The level of allowable harvest is determined under a quota system established by the the International Whaling Commission...
(IWC). The quota is based on the nutritional and cultural needs of Alaskan Natives as well as on estimates of the size and growth of the Bering-Chukchi-Beaufort seas stock of bowhead whales.

A recent change to the IWC’s bowhead whale quota system for subsistence harvesting has been approved. This change effectively allows Alaska whaling crews to continue harvesting bowhead whales without year-to-year quota fluctuations through a one-time seven-year extension, with limited renewals to safeguard whale stocks. The āġviq quota for Nuiqsut is six strikes per year.

Because whaling is an important part of the village culture, preparations for the hunt occur throughout the year. Nuiqsut whaling can occur great distances off the coast. Cross Island, a sandy barrier island is used as a base of operations for whaling crews. Hunters may travel as far east as Flaxman Island near the Canning River and over 30 miles offshore from Cross Island. The community is seeking a road from Nuiqsut to the Beaufort Sea coast for better whaling access to the Sea and specifically Cross Island. Paisanîch Map 5 depicts bowhead whale migration.

Bowhead whale behavior has been reported to be changing, with abrupt changes in the past two years as whales were found much further offshore in 2019 and alternatively in dense groups close to shore in 2020. More on the impact of climate change to Bowhead whale population is included in Chapter 5: Natural Environment.

Ugruk (Bearded Seal) and Natchiq (Ringed Seal). During the summer months, Nuiqsut residents travel to the Beaufort Sea to hunt for ugruk and natchiq. Ugruk are more commonly harvested than natchiq.

Nanuq (Polar Bear). Nanuq are not harvested in high numbers. If they are harvested, it is usually during or after the fall whaling season. The Marine Mammal Protection Act of 1972 allows coastal-dwelling Alaska Natives to harvest polar bears for subsistence purposes, including making and selling handicrafts. Both the voluntary Inuvialuit-Iñupiat Polar Bear Management Agreement and the U.S.–Russia Polar Bear Bilateral Agreement recognize the importance of conserving female polar bears with their cubs and therefore prohibit their harvest for non-Natives.

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Key Resource Habitats and Migration Routes, Bowhead Whale and Arctic Cisco

See Appendix A for Figure Sources

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Anchorage, Alaska 99510
(907) 276-8222 info@srbak.com
6.5. Land Mammals

Caribou and land mammal hunting fluctuates in response to changes in herd size, migration routes, and herd health. These fluctuations have potential links to climate change as noted above, as disease, access to lichen, and predation are influenced by climate change and in turn influence hunting and harvesting opportunities.198

Globally and within Arctic Alaska, there is evidence that caribou populations are declining.199 200 In the U.S. of the four tracked caribou herds, three peaked sometime between 2003 and 2010 only to decline 57 percent by 2017.201 The climate change factors contributing to caribou decline include:

- Increasing temperatures in some areas bring an expansion of less nutritious shrubs.
- Increase of parasitic infections.
- Increased frequency of winter icing (making access to lichen much more difficult).
- Increased tundra fires create vast areas that caribou tend to avoid.

**Tuttu (Caribou).** Harvest of tuttu occurs along the coast during the summer by boat and inland during the winter by snow machine. Residents often hunt tuttu with immediate and extended family members. Over half of hunting efforts involve day trips. While tuttu hunting occurs year-round, most occur during July and August when tuttu are in their prime condition. Tuttu are one of the primary subsistence species harvested by Nuiqsut residents.202 Paisanîjch Map 6 depicts three herds of caribou migration.

**Amaqûq (Wolf) and Qavvik (Wolverine).** Amaqûq and qavvik harvest occurs primarily from December through April. Hunters travel south toward Anaktuvuk Pass, west as far as the Meade River, and eastward just south of Kaktovik.203

**Tuttuvak (Moose).** Subsistence tuttuvak hunting occurs occasionally in the areas along the Colville and the Itkillik rivers. It occurs only during the winter and spring. Residents are also known to travel along other tributaries of the Colville River, including the Chandler and Anaktuvuk rivers and Fish Creek.

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203 Ibid
6.6. Fish

Fish provide more food per capita to the community of Nuiqsut than any other subsistence resource harvested, including bowhead whales or caribou. Fish makes up 30 to 40 percent of the edible harvest. Nearly 80 percent of households in Nuiqsut participate in some fishing activity.\(^{204}\)

Qaaktaq (Arctic Cisco). Qaaktaq is one of the primary species harvested in the Colville River region, accounting for between 1.9 and 14.9 percent of the total harvest depending on conditions. Harvesting arctic cisco can begin as early as September but is most productive between October and mid-November when the fish are running upriver. Resident harvest them in the Colville Delta with gillnets.

Other Fish. Nuiqsut residents also harvest other fish, including sulukpaugaq (Arctic grayling), pikuktuuq (humpback whitefish), aanaakliq (broad whitefish), iqalusaaq (least cisco), iqalukpik/paiaq (arctic char), and titaaliq (burbot). Many of these are caught incidentally when harvesting qaaktaq.

6.7. Birds

Nuiqsut residents hunt amauligruaq (common eider) and qijaq (king eider) during the summer months. The use area for birds is concentrated along the Colville River. Residents are known to hunt eiders offshore, extending from Cape Halkett to Camden Bay.

Geese hunting and gathering eggs are also common subsistence activities. Hunting typically occurs between April and October with the majority of harvests in May, June and September.

6.8. Plant Resources

Commonly harvested plants on the North Slope include asiaq (blueberry), ippiq (pink plumes), aqpiq (salmonberry), quaqaq (sour dock), qunulliq (wild rhubarb, mountain sorrel), kavlak (bear or blackberry), paungat (crowberry), kimmignaq (low-bush cranberry), ugurq (sphagnum moss), uqpiit (willow), argiaqnaq (puffball), sargiqrug (stinkweed or wormwood), and nauriat (plants and flowers). If and to what extent these plants are collected can vary year-to-year. There are undoubtedly other subsistence plants that are not included here. All plants were collected during the warmer months, from June through September when the ground is snow-free.\(^{205}\)

6.9. Subsistence Seasons

Nuiqsut subsistence patterns are determined by the seasonality of the resources as well as residents’ ability to travel by boat during open water seasons or by snow machine in winter. While some species are harvested year-round, many species are harvested seasonally. The following description of subsistence activities for Nuiqsut provides a seasonal summary of use,
and Table 9 illustrates the harvest by season.206, 207

**Spring.** Spring whaling on the coast draws some whalers to Utqiagvik to participate as crew members or whaling captains. No spring whaling occurs near Nuiqsut. Furbearer harvest in the foothills and on the Coastal Plain becomes an important activity as the daylight and weather improves, and it continues until the snow is gone in May. Seals are taken on the sea ice April – May. Sulukpaugaq, cod, and lake trout are taken with hook and line during the warmer weather. Long snow machine trips may occur to Utqiagvik or Kaktovik or even farther to visit friends and relatives before the snow melts. Some tuttu may be hunted in conjunction with these trips.

**Summer.** Whitefish are taken in nets in the Colville River when the water clears after breakup in June. As the season progresses, fishing is conducted farther upriver and on Fish Creek. When waterfowl arrive, they are hunted periodically until their fall migration. In late summer, char and salmon begin running up the river, followed by spotted seals. Some coastal fishing is done for whitefish and cisco. Children set traps for ground squirrels and fish for grayling with nets and rod and reel. Tuttu hunting becomes the primary activity in late summer.

**Fall.** Tuttu hunting, fishing, and whaling are the most important subsistence activities in fall. Caribou migrate south from their respective calving grounds, but some remain in the area throughout the winter near Fish Creek and the surrounding region. Tuttuvak have recently moved into the region and are becoming an important resource, especially during October when bull males are mating and hunting of tuttu is avoided. They are taken along the middle Colville River. Fishing for qaaktaq and whitefish is done with nets before freeze-up in the rivers and continues to be a significant activity after freeze-up at fish camps on the Colville River and Fish Creek. Sulukpaugaq and tittaalik are fished through the ice in late fall. Berries are picked during fishing and hunting trips, and sometimes driftwood and coal are collected. Whaling begins in late August to early September along the coast as far east as the Canning River. Seals, ducks, tuttu, and sometimes nanuq (polar) bear are taken while whaling. Other sea mammal hunting is done near the Colville River Delta.

**Winter.** Activities slow down during the coldest and darkest part of winter. Trapping for foxes and hunting of amaŋuq and qavvik occurs during this season. Tuttu and tuttuvak have traditionally been taken during winter, but snow conditions at Umiat where tuttuvak congregate makes snow machine travel difficult. Seals are hunted on sea ice when open leads appear. As weather and light improve, trapping, tuttu hunting, and fishing for tittaalik, sulukpaugaq, and lake trout increase.208, 209, 210

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207 As compiled in the draft 2015 Nuiqsut Comprehensive Plan.
Table 9: 2010 Major Subsistence Resource Hunting Season Harvests

<table>
<thead>
<tr>
<th>Resource</th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
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<tr>
<td></td>
<td>Nov</td>
<td>Dec</td>
<td>Jan</td>
<td>Feb</td>
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<tr>
<td>Aġviq</td>
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<tr>
<td>Bowhead Whale</td>
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<tr>
<td>Ugruk, Natchiq</td>
<td>L</td>
<td></td>
<td>M</td>
<td></td>
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<tr>
<td>Bearded Seal, Ringed Seal</td>
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<tr>
<td>Tuttu</td>
<td></td>
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<td>Medium</td>
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<tr>
<td>Caribou</td>
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<tr>
<td>Tuttuvak</td>
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<tr>
<td>Moose</td>
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<td>Amaguq, Qavvik</td>
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<td>Wolf, Wolverine</td>
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<tr>
<td>Geese</td>
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<td>Eider</td>
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<tr>
<td>amaulligruaq and qiŋalik</td>
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<tr>
<td>Qaaktaq</td>
<td></td>
<td></td>
<td>High</td>
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</tr>
<tr>
<td>Arctic char</td>
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<tr>
<td>Iqalukpik, Paiłuk</td>
<td>L</td>
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<td>L</td>
<td>M</td>
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<tr>
<td>Arctic char</td>
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<tr>
<td>Broad Whitefish</td>
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<tr>
<td>Aanaatlik</td>
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<td>Tittaaliq</td>
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<td>High</td>
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<tr>
<td>Burbot</td>
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Blank = No harvest activity  L = Low harvest activity  M = Medium harvest activity  H = High harvest activity

6.10. Subsistence Vulnerabilities

There are vulnerabilities to subsistence resources. Seasonal and migratory changes due to climate change as well as noise and other disruptions leave residents traveling farther to engage in subsistence activities. Nearby oil and gas industry also plays a role in subsistence vulnerabilities; industry development can affect migration routes and subsequently, where and how far subsistence hunters travel.

Subsistence Harvest Changes. Among subsistence harvesters on the North Slope, a substantial drop in marine mammals was reported in 2019. The number of harvested ringed seals dropped by 34 percent, bearded seals dropped by 28 percent, and walrus dropped by a very significant 38 percent across the North Slope.212 Access to the ice’s edge is a greater distance than it has been in the past, making access more difficult. The additional cost burden for gas, larger boats and engines for safety, and the difficulties in processing larger

maritime mammals in these conditions may also
be contributing factors. Finally, several variables
in the 2019 NSB Census survey indicated fewer
animals were found and that more trips over
greater distances were needed. Harvesting
ringed seal, an ice edge species greatly affected
by changing ice conditions, has dramatically
declined for Nuiqsut.213

Nuiqsut residents have reported sediment in
greater amounts along the coastal shoreline,
moving in stronger currents, with unknown
impact to marine life.214

Extremely poor ice conditions have been offered
as a partial explanation for seasonal and
migratory changes. When shore fast ice is
minimal and in poor condition, haul outs for
processing whales have become very
problematic.215

Disruptions Related to Climate Change.
Nuiqsut residents are experiencing a wide range
of changes to subsistence activities due to
climate change including the time of season,
modes of travel, wildlife health, availability and
behavior, harvest success, and the ways used to
prepare and store food. It is also forcing
development of new knowledge to adapt to
unusual and sometimes unprecedented
environmental conditions.216

Noise and other Disruptions. Residents have
expressed concerns about their ability to engage
in subsistence activities. The primary concerns
focus on both nearby activity that spooks wildlife
and on subsistence access. Helicopter activity has long been cited as a
primary concern amongst residents. Low flying
aircraft can harass wildlife, particularly caribou,
sometimes altering their movement away from
the village or established migration routes. Sport hunters that are not residents of the region
are also a concern. Commercial outfitters’
aircraft can frighten or harass wildlife. They are
known to target the vanguard of a herd, causing
the rest of the herd to scatter. Changing
migration patterns cause residents to travel
greater distances, at greater expense and risk, to
find and harvest caribou. Additionally, animals
are harder to find and when travelling greater
distances and hunters risk meat spoilage before
they can return to the village. Sport hunters
sometimes leave carcasses and meat on the
tundra and take only the antlers. This practice is
offensive to the subsistence users who rely on
the caribou harvest in its entirety. In addition to
low-flying aircraft disturbances, airboats and
vehicular traffic from highway can negatively
impact caribou migration routes.

Industry Effects on Subsistence Activities. In
addition to concerns about subsistence harvest
changes, residents have also expressed concern
about the effect industry has on subsistence
activities and their overall support for
subsistence activities, especially whaling.
Community Elders recall hunting, fishing, and
trapping in the Prudhoe Bay region. Many
residents and community leaders are now
concerned that development will encroach upon
the community, further limiting subsistence
access until the Nuiqsut area becomes another
industrial hub like Prudhoe Bay is today. One of

214 Ibid
the primary concerns voiced by residents is reduced access to subsistence resources due to encircling development by the oil and gas industry. The proliferation of development in recent years nearly surrounds the community and chokes off access to traditional hunting and gathering areas. Roads serve as a very real impediment to overland travel. One way to provide improved access is constructing tundra access ramps and road pullouts at regular intervals would allow residents to more easily traverse raised roadways. However, some frustration has been expressed with this solution due to difficulty using the ramps, especially when hauling heavy sleds. As it is, residents often have to travel around barriers, increasing the time and resources needed to engage in subsistence hunting. Residents must also pass through one or more checkpoints, further adding time and restrictions to engage in subsistence activities. Residents have also requested light poles at Alpine to assist hunters in returning back to home. Additionally, offshore oil and gas exploration could disrupt, disturb, or damage Cross Island’s use for whaling activities and limit access to resources. Residents want subsistence rights to be protected today and into the future. One thing is certain: continued education on the important of subsistence to the Iñupiat people and collaboration with residents to ensure that their subsistence needs are met is paramount.

The Future of Subsistence. There are also local concerns regarding state and federal government restrictions on hunting in the form of quotas and bans. Coupled with expanding development, many residents feel uncertainty about the future of both access and allowances for hunting in the region.\textsuperscript{217}

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Chapter Seven
Public facilities provide the backbone to life in any community. The transportation network, water and wastewater system, community gathering space, and power system are all part of how a community functions. In the Alaska Arctic, planning, construction, and maintaining public facilities and infrastructure is essential to ensuring that all residents and visitors are safe, comfortable, and able to gather as a community. Due to the extreme weather in Nuiqsut and across the North Slope, building and maintaining infrastructure that can endure the long and harsh winters is crucial.

Like many communities in rural Alaska and the North Slope, Nuiqsut has aging infrastructure and high maintenance costs but also valuable resources in this network of facilities that powers the community. This chapter examines public facilities in Nuiqsut, focusing on both existing conditions and future needs. Map 7 provides a graphic overview of public facilities in Nuiqsut.

7.1. Recreation and Community Use Facilities

Postal Service. The City of Nuiqsut operates a Post Office in the Community under contract with the U.S. Postal Service. Many communities in rural Alaska benefit from the Alaska Bypass Mail Program that provides subsidies to air
carriers and allows shippers to bypass the post office by delivering goods directly to the airlines. Nuiqsut is not part of the program. At the request of Kuukpik Corporation and the Alaska Federation of Natives (AFN), a resolution was passed in 2015 requesting that Nuiqsut and other rural Alaska communities be included in the program.

Residents have voiced concern that the current post office facility is too small for the amount of mail that is received in the community. The community would need to formally request to the U.S. Postal Service relocate to a larger facility. However, a suitable replacement office would need to be secured, which could be difficult given a shortage of office space within the community.

The NSB is renovating the existing airport terminal to repair electrical and plumbing issues with the intent to lease it to Wright Air. The community hopes to contribute to the renovation so that they can use a portion of it as a post office.

Recreational Facilities. Recreational facilities are limited in Nuiqsut. Nuiqsut Trapper School has a gymnasium and playground however the gymnasium needs to be more readily available for community events. The City of Nuiqsut has a city hall for larger community gatherings. The community has expressed the need for additional facilities for recreation, including indoor recreation for both youth and adults. A new indoor recreation facility could be an addition to the existing school or as its own facility. There is a pending NPR-A Impact Mitigation Grant Program project for $385,116 to develop and build a new playground. Due to the extreme weather conditions, having recreational space indoors is essential for residents.

Childcare. The North Slope Borough remodeled an approximately 1,100 square foot facility to
serve as an early learning center that is connected to the City of Nuiqsut facility in 2015. After the initial start-up funding, the NSB is not providing additional financial assistance for childcare operations. Without NSB funding and other facility and operational issues – flooding, roof issues, and lack of certified staff – the childcare center has not been in operation in several years. The City of Nuiqsut is considering using NSB-provided Economic Impact Assistance Program (EIAP) funds.\(^{219}\)

Residents have stated that the age range of children that are able to attend should be increased to better meet the needs of the community. The center also needs an outdoor play area.\(^{220}\)

**Washeteria.** Residents have expressed concern that there is not a washeteria and has not been one in the community for many years.\(^{221}\) Not every home in the community has a washer and dryer for day-to-day use. Additionally, the availability of industrial machines would allow residents to wash subsistence and work gear more easily. The former washeteria was converted into the NSB Planning Office in Nuiqsut.

**City of Nuiqsut Maintenance Shop.** The City of Nuiqsut needs a maintenance shop to store city vehicles and store supplies for the community center. The City has requested NPR-A planning and design funds for a two-bay shop onto the community center. The community could also use the space for small vehicle repair, such as for all-terrain vehicles (ATVs) and snow machines, especially important during the frigid winter months. The cost to construct the facility is approximately $4 – $5 million. Construction funding has not yet been secured.

**Boat Docks.** A seasonal removable boat dock was constructed along the Nigliq Channel of the Colville River using NPR-A Impact Mitigation Grant Program funds. It provides better summer and fall access to subsistence hunting and fishing and general access to the Channel.\(^{222}\)

The community constructed the Road to the Colville in 2019-2020. The 3.75 single-lane gravel road terminates at the Colville River. However, there is not a boat dock or launch area at the terminus of the road; the river may be too shallow to construct a dock in this location. However, there are not turn-offs along the roadway to accommodate parking or access to install a boat dock.\(^{223}\) During public meetings, the community has expressed that this is a priority.\(^{224}\) There is an active NPR-A Impact Mitigation Grant Program project for $3 million to fund constructing new boat ramps in Nuiqsut and Wainwright and to replace an existing boat ramp in Utqiagvik.\(^{225}\)

**Cemetery.** There is one cemetery in Nuiqsut, located on Nigliq Street between Second and Fourth streets. Plat 89-1 designates the parcel as divided into three lots; the middle lot is the cemetery tract. The entire parcel is enclosed by an unimproved road that extends Fourth...
Street to the east and then turns south as Cemetery Street, intersecting with Ukpeagvik Street. The cemetery needs a replacement fence and parking. It is also prone to flooding.

**Cultural Center.** The community has sought a cultural center for many years, a place for community gathering, cultural activities, with an area for creating Native arts and crafts. It would also a space to highlight the unique history of Nuiqsut and the region and the residents’ Iñupiaq culture.

### 7.2. Telecommunications

Telecommunications services in Nuiqsut include a fully digital local exchange telephone system, broadband internet service, cellular telephone, cable television, public radio broadcast, and a public teleconferencing center. Interconnection with the regional and global telecommunications network is via satellite circuits. The Arctic Slope Telephone Association Cooperative (ASTAC) provides in-state and long-distance telephone service. AT&T Alascom, Alaska Cellular Service, and GCI provide long-distance telephone service. GCI and ASTAC provide internet service. The Alaska Teleconferencing Network provides NSB teleconferencing services to the village.

Quintillion, an Alaska company formed for the purpose of building, owning, and operating terrestrial and submarine fiber optic cables in Alaska, developed a subsea communication network linking six Alaska communities to provide high-speed internet and communication capabilities. The Quintillion Fiber Optic Project consists of a main trunk line offshore following the northern and western coast of Alaska between Prudhoe Bay and Nome with branch lines extending to the communities of Nome, Kotzebue, Point Hope, Wainwright, Utqiaġvik, and Oliktok Point (Prudhoe Bay). The fiber optic cable ties into a terrestrial fiber optic cable in Deadhorse.

An ASTAC tower in Oliktok broadcasts to the tower in Nuiqsut as microwave to fiber. Fiber connections traverse the community on telephone poles, providing high speed internet to homes. Residents have reported that the ASTAC tower is dangerous in foggy and dark conditions.  

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7.3. Public Safety

The NSB is responsible for providing emergency response across the seven borough villages with services including police, fire, and search and rescue. Each of these departments are headquartered in Utqiagvik. The borough, however, maintains various emergency management branches in the villages themselves, as well as a police presence in nearby Prudhoe Bay.228

Public Safety Service. The NSB Police Department staffs a 24-hour police station with two officers. There are two jail cells within the Nuiqsut police station. During community meetings for this comprehensive plan, community members have stated that there is a need for additional police officers for the village.

Fire Suppression and Emergency Medical Assistance Service. The NSB Fire Department operates a fire station in Nuiqsut that includes fire response equipment and an ambulance. The Fire Department provides a pumper apparatus capable of pumping 1,250 gallons per minute (gpm) of water and a pumper/water tender apparatus capable of pumping 750 gpm for a total of 2,000 gpm. The Fire Department provides 24-hour emergency medical assistance to residents.

Replacement of the fire station floor and ramp in 2010 extended the life of the building for another 15 to 20 years. A generator for the station was installed in 2014.

Search & Rescue. Search and rescue serves a vital role on the North Slope when extreme weather conditions can lead even the most experienced hunter off course. In the extreme cold, it is essential that trained and experienced personnel are available and equipped to embark on a search swiftly for the best possible outcomes. The borough operates the volunteer search & rescue program in the villages. The City of Nuiqsut owns the building that the volunteers utilize to store equipment and supplies and to serve as a meeting place. The Nuiqsut Search & Rescue facility has significant maintenance and upgrade needs. The NSB capital program only allows improvements to borough-owned facilities or those with long-term leases, which makes financing the needed facility upgrades difficult. Coordination between the NSB and the City to seek grant funding could provide the means to repair the facility. Additional equipment and training are also needed for volunteer staff as is improved coordination with other programs.

7.4. Water and Wastewater

Water. The main water source in Nuiqsut is Fresh Water Lake. Fresh water is pumped from nearby Freshwater Lake during the summer months from a floating intake and pumped to the treatment plant. The pump and intake structure are removed seasonally. The water is

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filtered, chlorinated, and stored in two tanks with a combined storage capacity of 7.8 million gallons. The north tank is filled during one year, and the south tank the next year, although the community sometimes uses more than one tank a year. From these tanks, potable water is distributed to homes through a buried pipeline, shown in Map 8. Water is pumped in the summer months into a water treatment plant (WTP) and then into two warmed storage tanks for winter use.

The borough funded installation of a piped water system that was constructed in 1999 and expanded in 2016. The 2016 upgrades were funded by the NSB Capital Improvement Program and included extending water mains, providing service connections to additional homes, and upgrading Trapper School’s wastewater line. There are currently 139 homes with piped water and 11 homes that rely on water truck delivery service.229 The village water distribution system consists of about 40,000 linear feet of water lines.230

There are two freshwater storage tanks in Nuiqsut with a total capacity of 7,838,853 gallons.231 Typical demand for water is between 28 and 30 gallons per person per day. Up to 46 gallons per person per day is utilized during peak flow periods. Water capacity in Nuiqsut is adequate for the current and project future population size. There have been water storage shortage issues in the past, but leaks were repaired and now both tanks are working well and being property maintained.232 Another older water tank located between two newer water tanks and the power plant is not being used, is in a state of disrepair, and should be demolished. The community and NSB could investigate the need for an additional tank(s) to alleviate any water storage concerns and plan for a replacement if the investigation reveals that one is needed.

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231 Ibid
With just one large fresh water source in Nuiqsut, there is always concern about contamination or draining. There are no known contaminated sites immediately adjacent to the Fresh Water Lake nor are there concerns that the lake will drain. However, a redundant water source could be an asset to provide continuity of service if or when it’s needed.

Erosion along the banks of the Colville River and its tributaries is increasing, jeopardizing both the community’s water tank and water treatment plant. Both are at risk of severe flooding.

Wastewater. Wastewater is generally collected through a buried pipe system. The NSB treats wastewater by extended aeration and chlorination in a secondary treatment facility before being transferred via pipeline north of the village into a small pond on the tundra for evaporation. Like the piped water system, the wastewater system was constructed in 1999 with additional connections most recently in 2016. For those homes without wastewater service, the NSB empties the tanks and transports waste to the sewer lagoon at the landfill. There are currently six NSB employees and two contracted staff that maintain the water and wastewater system in Nuiqsut.

Currently, there are 147 wastewater lines, nine holding tanks, 13 honey buckets. The areas lacking water and wastewater service are located along Ericklook and Nuatagmiut streets between First and Second avenues and the subdivision south of the airport off Water Lake Road. Residents would like to have service extended to these homes. There are currently two applications for new connections on file with the NSB. Design work to install water and wastewater service to lots along Ericklook and Nuatagmiut streets is complete. Funds have been requested through the NSB Capital Program but the $16 million project has not been approved.

Residents have voiced concerns about water and wastewater system freezing during the cold winter months due to failing heat trace. Repairs and preventive measures should be taken to avoid further issues. NSB records indicate that in fiscal year 2019, 121 homes in Nuiqsut did not experience any service interruptions while 18 homes experienced one or more service interruptions with five homes having their service interrupted more than five times throughout the year. However, residents are reporting that freeze-ups are more common than they have been in the past.

The demand for wastewater treatment and disposal is estimated to be approximately 35 gallons per person per day. The treatment plant is designed to process 28,000 gallons of wastewater per day, sufficient capacity for the next twenty years. With regular maintenance

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234 Ibid
235 Ibid

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and upgrades, the system is expected to serve the village for more than 20 years.

Oil Search is required to provide compensatory mitigation to the community for development in the Nanushuk oil field. The U.S. Environmental Protection Agency has required that wastewater discharge in Nuiqsut be eliminated. A septage receiving station, like the one that has been constructed in Point Lay, be developed in Nuiqsut. This facility is currently in design and is estimated to cost between $12 and $14 million.\textsuperscript{236}

Approximately $56 million has been appropriated to design, construct and maintain the water and wastewater system in Nuiqsut since NSB capital program began in 1974.\textsuperscript{237} The approximate cost to extend service to Blocks 7A, 9, and 10 and the subdivision off Water Lake Road totals approximately $74 million.\textsuperscript{238} This does not include the cost of potentially expanding the need for the water and wastewater treatment plants.

In addition to extending water and wastewater system to additional homes, both outfall upgrades and sewage lagoon upgrades are needed through the NSB capital improvement program.\textsuperscript{239}

7.5. Snow Management

Snow removal and grading in Nuiqsut can flatten roadways, often damaging culverts and the drainage which has been engineered to reduce standing water. Standing water can warm underlying soils and speed permafrost melt, leading to subsidence or instability. It is recommended that road maintenance and snow removal be performed with care to ensure water can flow through existing culverts.

7.6. Solid Waste

The NSB collects refuse and disposes of it at the Class III landfill located approximately one mile northwest of the village. Trash removal is free of charge.

Nuiqsut’s landfill is a Class III Material Storage Waste Landfill (MSWLF) and is owned and operated by the NSB. A Class III Landfill is a landfill that accepts less than five tons of municipal waste based on an annual average.\textsuperscript{240}

Built in 1986 with four cells, the landfill operates with three cells. The landfill facility includes a salvage area, burn cage, sewage lagoon, and a used drum storage area. Burnable wastes are incinerated on the south side of the landfill area and after incineration are disposed in the landfill. The landfill was updated in 2011\textsuperscript{241} with an anticipated fifty-year lifespan.\textsuperscript{242}

Because a new septage receiving station will be constructed in Nuiqsut, the sewage lagoon will no longer be needed. There are preliminary plans to use the sewage lagoon as an additional landfill cell when the septage receiving station is operational.\textsuperscript{243}

\textsuperscript{236} Holmes, Travis, Principal Engineer UMIAQ Design. 2020. Personnel communication on July 13, 2020.
\textsuperscript{238} Ibid
\textsuperscript{239} Ibid
\textsuperscript{240} Alaska Statute. 18.AAC. 60.300 Purpose, Scope, and Applicability: Classes of Landfills. www.touchngo.com/lglcntr/akstats/aac/title18/chapter060/section300.htm.
\textsuperscript{242} North Slope Borough. 2019. North Slope Borough Repair and Replacement Schedule.
Residents have expressed frustration with the current state of the landfill, stating that incinerators are needed and that the burn cages are often unusable due to being surrounded by industry.\textsuperscript{244} In addition to installing an incinerator, some community members see benefits in expanding the landfill’s current footprint to construct an additional cell for industrial waste.

### 7.7. Natural Gas & Power Generation

Nuiqsut utilizes natural gas for primary power generation with diesel generation as back up. Electricity is generated by the NSB using natural gas from the Alpine Development Project. Since 2008, ConocoPhillips Alaska has provided up to one million cubic feet of natural gas per day for the community at no charge. The North Slope Borough funded and constructed Nuiqsut Natural Gas Pipeline (NNGP) to transport natural gas from the ConocoPhillips-Alaska Alpine production pad to Nuiqsut. The 14.4-mile NNGP shares supports with the Alpine pipelines from the production pad to the west bank of the Colville River where it transitions below-ground and continues to the village.\textsuperscript{245}

The NSB funded the conversion of the village power generators from diesel fuel to natural gas. The NSB also supports the operation and maintenance of the power plant and distribution systems. There is not a natural gas storage facility in Nuiqsut. When issues with the pipeline arise or during regularly scheduled maintenance, the NSB shuts down the pipeline and relies of diesel fuel to power the community. While this practice has rarely be a problem, in April 2022, a natural gas leak at Alpine forced the shutdown of the pipeline. While the community did not have natural gas from Alpine for less than a day, the incident highlighted the need for a storage facility in Nuiqsut.

For homes connected to natural gas, residential furnaces and boilers were converted from diesel fuel to natural gas; as a back-up, Toyo stoves were also installed in homes. The borough connected NSB-owned buildings to the natural gas system and many commercial buildings are also connected to natural gas. These heating systems are connected to a distribution system that is maintained by the Nuiqsut Utility Cooperative (NUC), shown in Map 10. The borough, through arrangements with Kuukpik Corporation, provides natural gas free of charge for home heating with a small fee of $25 per month to cover NUC’s operating costs. Natural gas service is not available along Ericklook and Nuatagmiut streets between First and Second avenues and the subdivision south of the airport off Water Lake Road. While there is electrical service to Ericklook and Nuatagmiut streets, residents have sought natural gas service extended to both of these areas to facilitate much-needed housing development.

Historical data from the Alaska Energy Authority (AEA) Alaska Power Cost Equalization Program (PCE) report is valuable for determining trends in energy consumption, power generation and sales, and electricity rates. The PCE program provides funding subsidies to electric utilities in rural Alaskan communities where the kilowatt-hour charge for electricity can be three to five times higher than the charge in more urban areas of the state; Nuiqsut is an exception due to


\textsuperscript{245} Alaska Department of Natural Resources. 2021. Division of Oil and Gas. Nuiqsut Natural Gas. https://dog.dnr.alaska.gov/Services/Pipelines?pipeline=Nuiqsut%20Natural%20Gas.
the use of natural gas delivered from Alpine. This program pays for a portion of the kilowatt-hours sold by the participating utility. The exact amount of the subsidy varies by village. It is a reliable source of historical power, fuel consumption, and energy cost information for rural Alaska communities. Nuiqsut is one of the 191 Alaskan communities that participated in the PCE program in 2020.246

Because Nuiqsut receives natural gas from the nearby Alpine facility, the electric rate for Nuiqsut residences is significantly lower than most rural Alaska communities at $0.08 per kWh. However, because commercial facilities are charged at a higher rate, there are a very small number of entities in Nuiqsut that qualify for the PCE program.

During the 2020 fiscal year, 111 residential and three community facilities in Nuiqsut were eligible to receive PCE assistance; there were an additional 77 non-PCE customers.247 However, given the relatively low rates for Nuiqsut community members, residential customers did not receive PCE assistance. Electricity costs $15 minimum and $0.08 per kilowatt hour (kWh). Elders and residents with disabilities are charged $0.08 when usage exceeds 0 – 600 kWh. Costs are shown in Table 11.

North Slope communities that do not have access to natural gas (every community except for Utqiagvik and Nuiqsut), diesel fuel is barged, transported via ice road, flown, or transported via a combination of these modes. The resulting cost of transporting diesel fuel is substantial throughout much of rural Alaska. On the North Slope, the NSB provides fuel subsidies to defray costs for residents. One example of the substantial subsidy from the NSB is the comparison between rural communities in Alaska. In 2018, the highest cost per gallon of heating fuel was $15 in Shishmaref; in Atqasuk it was $1.40. The median cost was $4.50 per gallon, which accounted for 26 percent of household income on average.248

The Nuiqsut power plant was constructed in 2000. It supplies all of the power to the village and is located on Sulook Avenue behind the Nuiqsut Trapper School and the community’s water tanks. The building is used solely for power generation and is owned and maintained by the NSB. Remodeling work and upgrades have occurred over the years with renovations to the doors, floor finishes, and HVAC controls in 2012 and 2014.249 In 2020, upgraded equipment was added to the power plant to automate power generation. A new 1,079 square foot addition expanded the power plant that houses a new exhaust system. Erosion along the Colville River and its tributaries is putting some of the community’s infrastructure at risk of a severe flooding event, including the power plant. The power plant includes six generators with a total power capacity of 4,360 Kilowatts (kW). There are two 910 kW diesel generators installed in 2000; one 450 kW diesel generator also installed in 2000; two 820 kW natural gas generators installed in 2008 and one 450 kW natural gas generator was installed in 2012.250, 251

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247 Ibid.
During summer months this peak load drops to about 900 kWh. Records of the daily peak loads show the actual demand from the community by the hour, showing that the peak demand usually occurs between about 12 p.m. and 7 p.m., with the highest demand at noon at 5 p.m.\textsuperscript{252} With current demand loads, the power plant is able to meet the village needs by running two or three generators, most often the two Caterpillar G3516 natural gas generators, sometimes paired with either the Caterpillar 3508 diesel generator or one of the Caterpillar 3512 diesel generators.\textsuperscript{253}

In the extreme climate of arctic Alaska, some energy efficiency improvements, such as LED lighting retrofits and controls programming can provide substantial benefit for a minimal amount of input. The greatest energy efficiency gains take more considerable and coordinated effort to achieve. While Nuiqsut residents enjoy affordable home power and home heating, conservation measures can improve the livability of homes. Future energy conservation strategies may include: 1) weatherization of all structures, 2) conversion to more energy efficient equipment, lighting, and appliances, 3) conversion to electric vehicles, and 4) installation of wind turbines and generators to serve as a back-up to the natural gas power plant and well as a long-term power source for when the non-renewable natural gas resource is depleted.

One way to advance energy efficiency is through better tracking of energy use, for example, smart meters can be utilized that teach energy efficiency and awareness through providing feedback on electrical energy usage to the consumer and/or utility provider. Studies have shown that an average of 20 percent can be saved on electric bills with these devises. A smart energy meter placed within households allows each individual to monitor energy usage and predict monthly electric cost. The smart meter can show energy use in real time and also warns when the power cost equalization or NSB subsidy limit has been reached (600 kWh), the point at which the cost dramatically increases. The average smart meter user can save 5 – 30 percent.

### Table 10: Power Generator Units

<table>
<thead>
<tr>
<th>Unit</th>
<th>Make/Model</th>
<th>Capacity</th>
<th>Serial Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Caterpillar 3512</td>
<td>910 kW</td>
<td>67Z01688</td>
</tr>
<tr>
<td>2</td>
<td>Caterpillar 3512</td>
<td>910 kW</td>
<td>67Z01658</td>
</tr>
<tr>
<td>3</td>
<td>Caterpillar 3508</td>
<td>450 kW</td>
<td>70Z01007</td>
</tr>
<tr>
<td>4</td>
<td>Caterpillar G3512</td>
<td>525 kW</td>
<td>CTM00608</td>
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<tr>
<td>5</td>
<td>Caterpillar G3516</td>
<td>820 kW</td>
<td>ZBA00281</td>
</tr>
<tr>
<td>6</td>
<td>Caterpillar G3516</td>
<td>820 kw</td>
<td>ZBA00305</td>
</tr>
</tbody>
</table>


\textsuperscript{253} Ibid
There are several state and federal programs that provide funding for energy audits and/or weatherization, including the Department of Energy Efficiency and Conservation Block Grant (EECBG) program, the Alaska Housing and Finance Corporation (AHFC), the Department of Energy (USDOE), and the Village Energy Efficiency Program (VEEP). These programs have been particularly successful in the interior northern Alaska region, with an average of 43 percent reduction in energy use and a 29 percent reduction in home energy costs in those homes that have been retrofitted through weatherization programs.254 255 256

Table 11: Utility Costs257, 258

<table>
<thead>
<tr>
<th>Utility</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021 Fuel Rates</td>
<td></td>
</tr>
<tr>
<td>Home heating diesel per gallon, pick-up</td>
<td>$2.05</td>
</tr>
<tr>
<td>Home heating diesel per gallon, delivery</td>
<td>$2.30</td>
</tr>
<tr>
<td>Residential gasoline per gallon</td>
<td>$5.00</td>
</tr>
<tr>
<td>Commercial gasoline per gallon</td>
<td>$6.40</td>
</tr>
<tr>
<td>Residential diesel fuel per gallon</td>
<td>$5.51</td>
</tr>
<tr>
<td>Commercial diesel fuel per gallon</td>
<td>$6.91</td>
</tr>
<tr>
<td>Propane</td>
<td>$180.00</td>
</tr>
<tr>
<td>2021 Residential Electricity Rates</td>
<td></td>
</tr>
<tr>
<td>0 – 100 kWh</td>
<td>$15.00 minimum</td>
</tr>
<tr>
<td>0 – 600 kWh</td>
<td>$0.15 per kWh</td>
</tr>
<tr>
<td>601 + kWh</td>
<td>$0.35 per kWh</td>
</tr>
<tr>
<td>2021 Electricity Rates - Aged or Handicapped (Seniors over 60)</td>
<td></td>
</tr>
<tr>
<td>0 – 600 kWh</td>
<td>No Charge</td>
</tr>
<tr>
<td>601 + kWh</td>
<td>$0.08 per kWh</td>
</tr>
<tr>
<td>2021 Electricity Rates including Heat Trace - Commercial</td>
<td></td>
</tr>
<tr>
<td>0 – 100 kWh</td>
<td>$15.00 minimum</td>
</tr>
<tr>
<td>0 +</td>
<td>$.08 per kWh</td>
</tr>
<tr>
<td>2021 Commercial and Residential Water/Wastewater Piped or Delivered Rates</td>
<td></td>
</tr>
<tr>
<td>0 – 3,000 gallons per month (residential)</td>
<td>$69.00</td>
</tr>
<tr>
<td>0 – 3,000 gallons per month (seniors)</td>
<td>$14.00</td>
</tr>
<tr>
<td>More than 3,000 gallons per month (both residential and seniors)</td>
<td>$0.02 per gallon</td>
</tr>
<tr>
<td>Commercial</td>
<td>$0.08 per gallon</td>
</tr>
<tr>
<td>Wastewater</td>
<td>No charge</td>
</tr>
</tbody>
</table>

256 Household energy savings are computer by using AKWarm, an AHFC-developed building energy modeling software which models expected energy consumption based on a home’s construction, features, appliances, and results from tests conducted on the home by certified energy raters. Since 1997, at least six studies have been undertaken to evaluate the accuracy of AKWarm’s residential energy assessment model and each have concluded that AKWarm produces a statistically accurate estimate of annual home energy.
7.8. Alternative Energy

Based on the 2008 North Slope Borough Utility Master Plan and Emergency Utility Plan, Nuiqsut is a fair location for village-scale wind energy generation of electricity. The study recommended that an anemometer be installed to collect wind data to determine if wind generation would be an economic alternative or could serve as a back-up to the current natural gas electric power generation system. There have not been additional studies on the potential for wind energy in Nuiqsut.

Solar generation is a viable alternative energy option for Nuiqsut and all North Slope communities for power or heat or both. However, there is very little research available. In July of 2009, a prototype home was installed in Anaktuvuk Pass, which included integrated Solar PV panels. Monitoring by the Cold Climate Housing Research Center (CCHRC) indicated that approximately seven percent of the total electrical demand, which averaged 1,100 kWh/month for the prototype home, was offset by the solar energy. The cost of electricity in Anaktuvuk Pass is approximately $1.05/kWh. The resulting cost savings from solar would be about $80 per month. The cost to install a home solar system is not current; the data available is for the home built in Anaktuvuk Pass in 2009. Without more solar system data and installation costs available for the North Slope region, the true cost is difficult to determine due of high transportation costs. The $80 per month would offset a capital investment of approximately $14,000 over a 25-year life. Nuiqsut residents already enjoy relatively inexpensive natural gas; the energy savings may not offset the cost to install solar panels.

7.9. Fuel Storage

Nuiqsut has fuel storage capacity for 70,000 gallons of gasoline and 410,000 gallons of diesel in the bulk tank farm located near the school and power plant. There is a 300,000 gallon and a 100,000-gallon diesel tanks and one 10,000-gallon diesel tank. In addition, there are two 30,000-gallon gasoline storage tanks and one 10,000-gallon gasoline tank. There are also numerous smaller fuel storage tanks scattered throughout the village.

Diesel fuel and gasoline are brought to Nuiqsut by via the ice road that connects to the Dalton Highway through the Spur Road. In an emergency, fuel can be flown into the community.

There is not a natural gas storage facility in Nuiqsut. When issues with the pipeline arise or during regularly scheduled maintenance, the NSB shuts down the pipeline and relies of diesel fuel to power the community. Since this is the warmest time of the year, it rarely poses a problem for residents, who are often subsistence hunting or have scheduled a vacation during the period. However, if an event prevented the delivery of natural gas to the community during the winter, the results could be disastrous. While stored diesel fuel is available, it may not be in sufficient quantities to power the community for longer than a week or two. A natural gas storage facility would remedy this infrastructure deficit and better protect the community’s residents during the harsh winters.

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7.10. Service Subsidies

Due to the enormity of capital investments and the cost of operations, North Slope residents pay a very small share of the costs of receiving service for safe water distribution, wastewater collection and treatment, electricity generation and distribution, home heating fuel, natural gas, and automotive gasoline. The approximate subsidy per residents per water and wastewater, solid waste disposal, and power generation are presented here. These subsidies total approximately $9,821 per Nuiqsut resident annually, show in Table 12. What is not included here is the cost of infrastructure development, expansion, and upgrades which can costs borough tens of millions of dollars annually through the capital program.261

Water & Wastewater Subsidies. The North Slope Borough operates the water and wastewater treatment and distribution system in Nuiqsut. General fund expenses to operate water and wastewater infrastructure exceeded $800 per household per month in 2017. Household utility service rates are $69 per month.

Power Subsidies. The North Slope Borough owns and maintains power generation facilities in all of its communities except Utqiagvik, where BUECI operates the power generation facility. Like the water and wastewater systems, the NSB highly subsidizes power generation, connections, operating costs. Power is managed through the Power and Light Fund. This fund includes the power-generating activities for the North Slope communities of Anaktuvuk Pass, Kaktovik, Nuiqsut, Point Hope, Point Lay, Wainwright, and Atqasuk.

During the 2017 calendar year, expenses to generate and distribute power in the seven North Slope villages totaled $26,839,423. Residents were charged a total of $8,363,574 in service fees. The borough also received an operating grant for $132,138. Thus, the 2017 power subsidy across seven villages totaled $18,363,574 – the amount that it cost the borough to provide power to village residents above the amount received in service fees and grants for the service.262 The approximate 2017 power subsidy per village resident was $6,365. The average subsidy per resident was calculated as an average across all village residents; the exact amount in Nuiqsut would be slightly different based on the cost of operating the power plant and distributing power in Nuiqsut specifically.

Solid Waste Subsidies. The North Slope Borough owns and maintains the solid waste facility in Nuiqsut. For fiscal year 2018 – 2019, the NSB budgeted a total of $355,742 for sanitation services in Nuiqsut.263 Residents are not charged for trash pick-up or disposal. The subsidy for providing these services is the total annual budget, approximately $792 per Nuiqsut resident annually.

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### Table 12: Utility Subsidies

<table>
<thead>
<tr>
<th>Utility</th>
<th>Residential Fee</th>
<th>NSB Cost</th>
<th>Approximate subsidy per home</th>
<th>Approximate monthly subsidy per resident</th>
<th>Approximate Annual Subsidy per Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and Wastewater</td>
<td>$69/month per residence</td>
<td>Approximately $800/month per Nuiqsut residence</td>
<td>$731/month</td>
<td>$222</td>
<td>$2,664</td>
</tr>
<tr>
<td>Power</td>
<td>$8,495,712 annually for seven villages</td>
<td>$18,363,574 annually for seven villages</td>
<td>$6,365</td>
<td></td>
<td></td>
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<tr>
<td>Solid Waste</td>
<td>$0</td>
<td>$355,742 for Nuiqsut annually</td>
<td>$66</td>
<td>$792</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$9,821</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### 7.11. Transportation

Residents travel by boat, ATVs, snow machine, and by car and truck on permanent village and seasonal ice roads. ATVs, snow machines, and boats provide transportation over long distances, often for participation in subsistence activities. Air transport is the primary means of long-distance travel to other communities on the North Slope and beyond. This section includes information on off-road travel, current roads, possible future roads, water travel, and air travel. Map 11 illustrates the transportation system that links North Slope villages.

Snow machines, ATVs, and boats are ideal forms of off-road transportation within the village, allowing for long distance travel over rugged or inaccessible terrain (off-road, over snow, and water). This makes them a preferred form of transportation for subsistence activities because they make remote hunting, fishing, and gathering locations more easily accessible. Cars and trucks are also often used around town.

**Roads.** Like most rural Alaska communities, the community of Nuiqsut is located off the road system. There are local gravel roads as well as a gravel road links the Alpine oilfield to the community of Nuiqsut. However, unlike many other rural Alaska communities, Nuiqsut residents are connected to the industry Spine Road during the winter via ice road. Nuiqsut residents are able to travel eastward on a 17-mile ice road to the Dalton Highway. Nuiqsut is the only North Slope village that is connected via ice road to the rest of Alaska and the rest of the U.S. for approximately four months each year. While other North Slope communities are connected to the Dalton Highway via a snow road that can be traversed in caravans, Nuiqsut...

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264 Average monthly water and wastewater subsidy of $731 was divided by the 3.29 average household size to achieve the average per resident subsidy. The solid waste subsidy was calculated using the 2019 NSB Census population count of 246 residents.
is the only borough village that currently has an ice road connection to the Dalton Highway.

**Local Roads.** There is estimated to be about 10 miles of gravel roads in Nuiqsut. The roads are generally 24 feet wide inside of 60- to 100-foot rights-of-way. There are no sidewalks in the village. There are also two bridges in the community. One leads to the boat launch at the Nigliq Channel and another over a creek that leads to the Freshwater Lake. Roadbed and culvert washout due to spring break-up is one issue impacting the usability of these bridges.

Dust control in the summer season is a priority for Nuiqsut residents. Increased local and industrial traffic paired with low quality gravel material have increased road dust in the community and residents’ concerns about respiratory health and the effects of dust accumulation on subsistence foods on drying racks or being processed outdoors. While there have been efforts in the past to use dust suppressant materials, the NSB only attempts to control the dust through road watering. It is common for the roads to be watered to curb dust, only for the dust to return minutes after being watered. Dust suppressants need to be investigated to better control the dust in the community.

The community has discussed issues with the village roads: there is tundra is showing through on the road to the landfill; general road maintenance is needed to repair potholes, washboarding, and generally poor conditions; and property drainage is needed. Residents are seeking a drainage study for all community roads. Residents have also expressed the need for a public bus for the community.266

To begin to alleviate severely overcrowded housing conditions, the community needs roads and utilities extended to the platted subdivision south of the airport, shown in Map 17: Future Land Use. The importance of developing roads to additional homesite lots has been emphasized by residents in community meetings.267, 268

**CD-5 Access Road.** In 2011, after long delays in obtaining approvals, CPAI received a key permit from the USCOE for the Colville Delta 5 (CD-5) project, including a road to the satellite drill site that also connects with the Alpine Development Project located on the west side of the Colville River delta about six miles from CD-4. In 2014, CPAI installed four bridges and completed the gravel footprint. Other than winter ice roads, there is not a road connection to other North Slope oil developments. During the winter, Industry prepares an ice road from Alpine to the Spine Road, allowing Industry workers and residents to access the Dalton Highway and beyond. Nuiqsut is the only community with a winter ice road.

Nuiqsut residents have expressed concerns about limitations that could be placed on travel through the oil fields during times of heightened security and their inability to access subsistence areas or travel through the region for their own safety. They are also seeking safe and secure parking in Prudhoe Bay specifically for Nuiqsut residents.

267 Ibid
**Kuukpik Spur Road.** The Kuukpik Spur Road was constructed in 2015 by the Kuukpik Corporation with assistance from CPAI. The 5.8 mile, 24-foot-wide road begins at the Nuiqsut landfill access road and connects the village to the Colville Delta 5 (CD-5) road, a part of the Alpine oil field area operated by CPAI. There is a 10-acre gravel pad at its termination, often referred to as K-Pad. There is a multi-story camp here that is managed by Ice Services to provide overflow housing for workers on the western expansion developments, like GMT 2 and Willow as well as areas for staging and storage.

The road was primarily built to allow greater access to caribou hunting and fishing access in the summer and to facilitate access for residents to jobs at Alpine. In addition, it provides a year-round access route to an alternate airport in the event of an emergency. Utilizing the road requires Kuukpik Corporation’s approval. Residents have voiced concern regarding the need for monitoring activities on the Spur Road, specifically related to oil spills and damage to the environment.

**Colville River Access Road.** The community of Nuiqsut had long sought a road that extended south of the village to provide direct access to the Colville River for subsistence activities. The 3.75 single-lane gravel road terminates at the Colville river main channel, north bank with a 100-foot radius turn-around area. There are three stream crossings where culverts were placed to ensure fish passage and to accommodate high water events. The road was constructed by the Native Village of Nuiqsut with funding from the BIA with assistance from a variety of other entities. There is not a boat dock or launch area for subsistence actives. The river is reportedly too shallow in this area to construct a boat dock. The community is evaluating alternative locations for the dock.

**Community Winter Access Trail.** The North Slope Borough, in an effort to provide relief to the high cost of living across the region, builds approximately 300 miles of snow roads for resident access to the Alaska road system at the Dalton Highway. The Community Winter Access Trail (CWAT) program focuses on resident use of existing snow trails to connect residents of Utqiagvik, Atqasuk, Wainwright, Point Lay, and Anaktuvuk Pass to the state road system by use of improved snow trails. Safer travel, reduced cost of search and rescue missions, consolidated travel routes that reduce the impact to the landscape of multiple and uncoordinated trails and routes, lower costs by bypassing barge and aviation transport of goods, and coordination of freight haul are some of the benefits of the CWAT program.

Nuiqsut is not connected to the CWAT. The CWAT trail goes south of Nuiqsut. NSB, ConocoPhillips, and Kuukpik have discussed allowing the CWAT to traverse Kuukpik Corporation land and connect to industry owned gravel roads near Nuiqsut, but this has not occurred due to concerns about non-conforming users of the CWAT, misuse of Corporate lands and industry roads, trespass in Nuiqsut, and the impacts of the trail to the surrounding environment that need to be addressed.

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Although the CWAT program does not provide access for Nuiqsut residents, the NSB should include Nuiqsut in its community engagement efforts to garner input on resident transportation needs and effects of the CWAT program on the community. Although the CWAT program does not provide access for Nuiqsut residents, the NSB should include Nuiqsut in its community engagement efforts to garner input on resident transportation needs and effects of the CWAT program on the community.

**Future Roads.** Additional roads are needed to provide access to lots within a new subdivision located just off the road to Freshwater Lake. Extension of roads to the new subdivision southeast of the village has been identified as a priority project by the community.

There have been discussions about constructing a year-round road to connect the community with the Dalton Highway for decades. A southern route, connecting Nuiqsut to the Dalton Highway was discussed in about 2003; the proposal was a 102-mile road heading south from the community and connecting with the Dalton Highway near Pump Station 2. However, this alternative was not included in the 2004 Northwest Arctic Transportation Plan. Through the Roads to Resources program Proposed, a road would connect Umiat with the Dalton Highway, potentially connecting to Nuiqsut at a date in the future. That project was eliminated in 2015.

More recently, the State of Alaska has been considering developing a road network in the Alaska Arctic through the Arctic Strategic Transportation and Resources Project (ASTAR). ASTAR is a planned road network extending hundreds of miles across the North Slope, primarily connecting Utqiaġvik to the Dalton Highway in Prudhoe Bay and connecting to other communities in the region. The road network would connect the North Slope's isolated communities to the larger Alaska road network as well as allow for exploration of oil fields within the NPR-A. The ASTAR Strategic Plan identifies four alternative routes: 1) connecting CD-4 to the Tarn-Meltwater Road at DS2L; 2) connecting the Colville River Access Road to the Tarn-Meltwater Road south of DS2N; 3) connecting GMT 2 to the terminus of the Tarn-Meltwater Road at at satellite field Meltwater DS2P; and 4) connecting a future road to the drill site BT5 to the terminus of the Tarn-Meltwater Road DS2P.

Some Nuiqsut residents have expressed concern about negative impacts to subsistence resources and uses if the public, in particular sport/trophy hunters, were allowed access to a road connecting the community to the Dalton Highway. As noted in the ASTAR Strategic Plan, several of the proposed routes would likely not have community support; industry traffic through the village would trigger a host of issues for the community.

**Air Travel and Transportation.** There is a 4,589 foot long, 100 foot wide gravel runway/airport in Nuiqsut open for public use. The airstrip is currently in good condition and has a 1,400 foot Medium-intensity Approach
Lighting System (MALSF) with sequenced flashers.\textsuperscript{279} It is also equipped with high intensity runway edge lights, a rotating beacon, a two light Precision Approach Path Indicator (PAPI), runway end identifier lights, and touchdown points.\textsuperscript{280} Despite the long and cold winter season, only Utqiaġvik, Nuiqsut, and Prudhoe Bay have terminals available for passengers, although the Nuiqsut terminal is not operational. The NSB is renovating it to repair electrical and plumbing issues with the intent to lease it to Wright Air and to use it for additional freight handling space. The community hopes to contribute to the renovation so that they can use a portion of it as a post office. The airstrip is owned and operated by the NSB. Birds and caribou are occasionally found on or within the vicinity of the strip, causing delays or hazards. The airstrip is not monitored or attended.

Flights from Wright Air transport passengers, cargo, and mail from Utqiaġvik, Deadhorse, and beyond to lower Alaska after the closure of Ravn Air, which serviced the North Slope prior to closing down operations to Nuiqsut in early 2020. Air transportation in and out of the community can be difficult at times, largely due to amount of cargo and other passengers coming and going on airplanes with limited space. There were 3,210 enplanements in 2019 and 2,362 in 2018, representing an increase of nearly 35 percent over just one year.\textsuperscript{281}

Recent improvements to widen and lengthen the gravel runway and improve the surface of the taxiway and apron were made by the North Slope Borough after continued deterioration of the runway that resulted in flight cancellations and a frustrated community. The improvements resulted in a better functioning airport, but some residents have expressed comments that the length of the runway should have been extended even further to allow for other commercial airplanes to land. Some comments indicated that private emergency flight ambulances are unable to land since those aircraft require a longer runway (which may not apply to the current NSB Search and Rescue aircraft). In addition, some members of the community have expressed interest in expanding the airport and lengthening the runway to become a regional hub for air traffic within the North Slope villages and the nearby oil fields, with the aim of decreasing air traffic over the tundra overall. Many residents have expressed their frustration of having to fly through Prudhoe Bay which has limited public facilities, services and accommodations during layovers, so there is a desire to fly direct to Fairbanks or Anchorage. Expanded commercial air service would also bring added benefit of improving delivery of mail, goods and commodities, and other supplies to the community. However, other residents have expressed concern about expanding the local airport to accommodate travel for industry, even on limited basis. Residents have said that allowing this traffic in the village could change its character.\textsuperscript{282}

Approximately nine miles east of Nuiqsut there is a CPAI-owned owned and operated airstrip at Alpine. The airstrip is roughly 5,000 feet long and can be accessed by Nuiqsut residents in emergency situations. CPAI has planned for apron expansions recently, requiring 14,000 cubic yards of gravel and 250 cubic yards of erosion protection for the northeast end of the

airstrip, allowing for easier and safer aircraft maneuvering.\(^{283}\)

**Water Travel.** Nuiqsut is situated a few miles inland and west of the main channel of the Colville River and 10 miles south of the head of the Colville River Delta. The Colville River Delta serves as the main waterway connecting Nuiqsut to the Beaufort Sea. The Nigliq Channel runs along the eastern edge of the village. This channel provides only limited water access as it is too shallow for shipping goods to the community and can become clogged with silt at times, restricting boat access. A boat ramp at the Nigliq Channel was funded by the NPR-A Impact Grant Program and constructed in 2015. Nuiqsut does not have barge traffic or other marine shipping service from the coast through the Colville River because the Nigliq Channel is too shallow. Instead, residents wait for the annual construction of the winter ice road that provides access to the Dalton Highway in order to bring in vehicles and other large goods. Residents often arrange to have goods delivered to Prudhoe Bay by truck or barge and then transported by truck in winter via the Spine Road and winter ice road. Supplies can be flown into the village year-round.

7.12. Gravel

Gravel is required in the community for performing road maintenance, providing adequate landfill cover, and for new construction.

There are several stockpiles along the Nigliq Channel. The westernmost stockpile of three

along the Nigliq Channel was mined from the ASRC mine site for the Colville River Access Road, which is mostly depleted. Material for Colville River Access Road was stockpiled on top of approximately 15 cubic yards of material owned by Kuukpik Corporation that had been dredged from the Nigliq Channel. The next two stockpiles are owned by the North Slope Borough and are from the ASRC Mine Site, from 2007 and 2015 respectively.\(^{284}\)

There is need throughout the community to upgrade roads; upgrades to the road to the dump are especially needed. Both the NSB Capital Program and Kuukpik Corporation are planning to upgrade this road in the near future. There is also immediate need for private gravel use to repair damaged driveways due to subsistence. The borough has a program that provides gravel for driveways free-of-charge but there is not a sufficient quality to fill the need. The city needs to develop its own gravel source to provide for local needs that outside sources may not be able to provide.. An investigation into viable gravel sources may require that the city annex land beyond its current boundaries.

ASRC owns a material site approximately 4.5 miles east of Nuiqsut across the Nigliq Channel and Colville River that was originally permitted by the USCOE in 1997. Due to the cost of permitting and reclamation, the pit is only re-opened for large projects. It is a viable source of gravel for road maintenance and other capital projects. The NSB expects to mine gravel in the near future to meet the needs of the community.

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7.13. Capital Project Planning

The NSB’s revenue is largely dependent on taxes from oil and gas infrastructure, and this revenue diminishes as facilities age. This revenue also affects the borough’s bonding rating (i.e., the interest rate on borrowing money). Since bonds are the primary funding source for NSB capital projects, it is increasingly important that Nuiqsut seek alternative funding for capital projects when possible.

Table 13 provides a list of potential capital projects that may be needed or desired in Nuiqsut over the next 5-, 10-, or 20-year period. This list includes major capital investments; current NSB facilities, such as buildings and large vehicles or equipment, should continue to receive normal maintenance and upgrades by NSB to ensure safe and efficient operations for their remaining useful life and thus are not included in the list of potential capital projects. This list does not include vehicles or rolling stock such as graders, water trucks, or buses. Some of the facilities and assets identified in the table would likely be sponsored and funded by NSB general obligation bonds, while others could be sponsored and funded wholly or in part by other entities. Funding for research and capital projects identified in this plan would likely come from state and federal funding sources, the Regional Native Corporation, the NSB Capital Improvement Program (CIP), and other grant sources. While the projects are not prioritized and may require greater detail, including cost estimates, the requesting or sponsoring entity will develop additional information when necessary.

Annually, the NSB meets with each village’s city council to provide updates on capital-fund ed projects. Staff also request a priority listing of projects from each community for potential inclusion and consideration in the annual capital funding cycle. In 2021, the City of Nuiqsut prioritized the following capital projects by resolution for funding by the North Slope Borough Capital Improvement Program:

1. All Areawide Services provided by the North Slope Borough, including gravel stockpiling, road upgrades, power, water, wastewater, equipment and facilities projects
2. Cemetery Upgrades (Phase II) including acquisition of necessary equipment to service the cemetery - backhoe, auger, light plant, small rock saw
3. Housing - 60 units of new SF or MF housing units (4-6 new units annually until need is satisfied)
4. Fresh Water Lake Road
5. Teen Center Renovation
6. Contaminated Sites Cleanup
7. Cultural Center

The North Slope Borough Annual Capital Improvement Program funding allocation process takes several months and is reviewed by numerous elected and appointed officials. Beginning the fall and winter before the process beings, the NSB Planning Department coordinates with local communities, namely the Native village and city governments in reviewing capital needs and assisting with completing any project request submittals. During this time, the NSB Planning Department also coordinates with NSB departments in preparing project and project analysis requests. These requests are usually due the second week of February. The requests are compiled and presented to the Project Review Committee (PRC) during a workshop typically lasting three days in late March. The PRC provides funding recommendations based upon the maximum
bonding amount provided by the NSB Administration and Finance Department. The PRC recommendations are reviewed by the NSB Mayor, who has the authority to make changes to the PRC recommendations before they are presented to the NSB Planning Commission. The Planning Commission reviews the PRC and Mayor's recommendations along with the NSB Six Year Capital Plan at their meeting in May; the Planning Commission also has the authority to edit the recommendations before providing them to the NSB Assembly. The NSB is statutory required to review and adopt via ordinance the capital program by June 15th of the same fiscal year. The capital program is not final until the voters approve the recommendations by ordinance section at the regular election in October.

### Table 13: Potential Capital Projects over a 5, 10 and 20-Year Period

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>1 to 5 Year Period</th>
<th>6 to 10 Year Period</th>
<th>11 to 20 Year Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water and Wastewater</strong></td>
<td>Install/repair/replace heat trace along water and wastewater lines and holding tanks to prevent freeze-ups</td>
<td>Redundant water source Evaluate water storage needs</td>
<td>Evaluate long-term drinking water supply capacity, water quality, treatment and distribution needs</td>
</tr>
<tr>
<td></td>
<td>Sewage outfall and sewage lagoon upgrades</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water and wastewater extensions to the new subdivision and to those homes that do not yet have connections in blocks 7A, 9, and 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Old water tank storage restoration, repurposing, or demolition.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Extend water and wastewater service to the subdivision south of the airport to facilitate housing development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Generation / Natural Gas</strong></td>
<td>Research and construct feasible alternate energy systems</td>
<td>Seek a natural gas storage facility in Nuiqsut</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extend electrical and natural gas service to the subdivision south of the airport to facilitate housing development.</td>
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</tr>
<tr>
<td></td>
<td>Extend natural gas infrastructure to blocks 10 and 11 (western side of Nuatagmuit Street and eastern side of Ericklook Street) to facilitate housing development.</td>
<td></td>
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</tr>
<tr>
<td>Type of Facility</td>
<td>1 to 5 Year Period</td>
<td>6 to 10 Year Period</td>
<td>11 to 20 Year Period</td>
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</tr>
<tr>
<td><strong>Landfill</strong></td>
<td>The road to the landfill needs repairs and upgrades (duplicate under Road / Trails / Maine)</td>
<td>Modernize the landfill and Thermal oxidation system</td>
<td>Expand the landfill to accommodate industrial waste</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investigate the feasibility of installing an incinerator</td>
<td></td>
</tr>
<tr>
<td><strong>Roads / Trails / Marine</strong></td>
<td>Evaluate road maintenance needs, especially those that are showing excessive wear, especially the road to the landfill and any that are rutted with potholes, sinking, or are showing tundra. Plan and implement immediate or long-term repairs and upgrades</td>
<td>Evaluate road maintenance needs, especially those that are showing excessive wear like the road to the landfill and any that are rutted with potholes, and plan for immediate or long-term repairs and upgrades</td>
<td>Evaluate road maintenance needs, especially those that are showing excessive wear like the road to the landfill and any that are rutted with potholes, and plan for immediate or long-term repairs and upgrades</td>
</tr>
<tr>
<td></td>
<td>Implement public bus service</td>
<td>Construct an extension of the new Colville Access Road to a location that is suitable to install a boat ramp</td>
<td>Install a new boat dock along the Colville Access Road</td>
</tr>
<tr>
<td></td>
<td>Dust control: research and implement dust control measures</td>
<td>Dust control: research and implement dust control measures</td>
<td>Dust control: research and implement dust control measures</td>
</tr>
<tr>
<td></td>
<td>Conduct a drainage study and analysis of road conditions</td>
<td>Design and construct a road to the Beaufort Sea coastline for subsistence hunters that travel to Cross Island for whaling</td>
<td>Design and construct a road to the Beaufort Sea coastline for subsistence hunters that travel to Cross Island for whaling</td>
</tr>
<tr>
<td></td>
<td>Inspect and repair / replace / add culverts as needed, especially the ones on Second Avenue</td>
<td>Inspect and repair / replace / add culverts as needed</td>
<td>Inspect and repair / replace / add culverts as needed</td>
</tr>
<tr>
<td></td>
<td>Extend roads to the subdivision south of the airport to facilitate housing development.</td>
<td></td>
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</tr>
<tr>
<td><strong>Housing</strong></td>
<td>Conduct a comprehensive housing needs study</td>
<td>Construct new energy-efficient homes</td>
<td></td>
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<tr>
<td></td>
<td>Rehabilitate existing vacant housing for occupancy providing energy-efficient systems</td>
<td>Retrofit existing housing with energy-efficient systems</td>
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<tr>
<td></td>
<td>Rehabilitate teacher housing</td>
<td>Construct new teacher housing and return to return housing stock to the community</td>
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<tr>
<td>Type of Facility</td>
<td>1 to 5 Year Period</td>
<td>6 to 10 Year Period</td>
<td>11 to 20 Year Period</td>
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<td>--------------------------</td>
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</tr>
<tr>
<td>Airport</td>
<td>Install bathrooms at the airport building and renovate the terminal</td>
<td>Airport commercial development</td>
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<tr>
<td></td>
<td>ASTAC tower by the run is dangerous in foggy conditions and should be relocated</td>
<td>Pave the runway or upgrade with better surface material</td>
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<td></td>
<td>Install new or repair existing fencing where possible</td>
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<tr>
<td>Health Clinic</td>
<td>Evaluate the health clinic facility for current needs and plan for future needs to accommodate community growth</td>
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<td></td>
<td>Additional space for traveling medical professionals</td>
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<td></td>
<td>Redesigned exam rooms to better accommodate multiple family members, public health nursing staff, translators, and others</td>
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</tr>
<tr>
<td>Recreational Facilities</td>
<td>Updated playground equipment and play area for children and the daycare center</td>
<td>Indoor recreation area for youth and adults; could be added to the school facility or as its own facility</td>
<td></td>
</tr>
<tr>
<td>Community Buildings and Facilities</td>
<td>Construct a new washeteria in a new or existing building for community use</td>
<td>Cultural Center</td>
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</tr>
<tr>
<td></td>
<td>Equipment to maintain the cemetery</td>
<td>Install a natural gas filling station</td>
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<td></td>
<td>Replacement fence around the cemetery and gravel parking nearby</td>
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<tr>
<td></td>
<td>Evaluate school current and future space educational and community needs</td>
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<tr>
<td></td>
<td>The City of Nuiqsut needs a maintenance shop</td>
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<tr>
<td>Type of Facility</td>
<td>1 to 5 Year Period</td>
<td>6 to 10 Year Period</td>
<td>11 to 20 Year Period</td>
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</tr>
<tr>
<td><strong>Community</strong></td>
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</tr>
<tr>
<td><strong>Buildings and Facilities (continued)</strong></td>
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<tr>
<td>Expand or relocate the post office to better accommodate the needs of the growing community</td>
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<tr>
<td>Evaluate permafrost thaw beneath the power plant, water plant, and other potentially affected infrastructure</td>
<td>Continue to monitor permafrost thaw beneath public facilities and infrastructure</td>
<td>Continue to monitor permafrost thaw beneath public facilities and infrastructure</td>
<td></td>
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<tr>
<td>The city owned but NSB operated Search &amp; Rescue Facility needs to be upgraded and additional equipment for responders is needed</td>
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<tr>
<td>Investigate and develop a gravel source for both community and private needs</td>
<td>Investigate and develop a gravel source for both community and private needs</td>
<td>Investigate and develop a gravel source for both community and private needs</td>
<td></td>
</tr>
</tbody>
</table>
NUIQSUT COMPREHENSIVE PLAN
2022 – 2042

CHAPTER 7: PUBLIC FACILITIES

Power Utilities
Map 9

Data Source: DCRA Community Map

Power Lines

0 1,200 2,400 Feet

Nechelik Channel

Bulk Fuel Tank Farm

Power Utilities

Sewer Plant

Water Treatment Plant

Nelligik Street

Mallak Street

Ulpletely Street

Nelligk Street

Water Storage Reservoir

Third Avenue

Colville Street

Nelligk Street

Second Avenue

Fourth Avenue

Cemetery Street

First Avenue

Bulk Fuel Tank Farm

Power Plant

School

Power Lines

Feet

Power Utilities

Sewer Plant

Water Treatment Plant

Nelligk Street

Mallak Street

Ul completamente Street

Nelligk Street

Water Storage Reservoir

Third Avenue

Colville Street

Nelligk Street

Second Avenue

Fourth Avenue

Cemetery Street

First Avenue

Bulk Fuel Tank Farm

Power Plant

School

Power Lines

Feet

Nechelik Channel

Bulk Fuel Tank Farm

Power Plant

School

Power Lines
Chapter Eight
Housing

Housing is a fundamental need. It is essential for one to feel secure, be healthy, and be part of a community. Housing quality and availability, including low-income and emergency housing, is a top priority for every household and community. In rural Alaska, communities grapple with not only the high costs of housing, but also high transportation costs, aging infrastructure that is expensive to both maintain and upgrade, and extraordinarily high energy costs. For these and a complexity of other reasons, housing availability is limited and all housing is expensive across rural Alaska and the North Slope.

Housing provision in the North Slope Borough has been a significant issue since its formation in 1972. While the demographics of North Slope households have experienced dynamic change over the last 49 years, according to the 2019 NSB Economic Profile and Census Report, adequate housing has continued to be an underlying issue facing the borough and its residents. In every village across the North Slope, there are housing commonalities: the housing stock is generally older; housing options for residents outside of Utqiagvik have been generally limited to single-family homes; the availability of rental housing is extremely limited, especially in the villages; and excessive overcrowding continues to overwhelm households. There have been strides in easing the housing burden. Homes owned outright have increased substantially and both the NSB and local housing authorities have had measured success in addressing issues by increasing housing opportunities.

Like many communities in rural Alaska and the North Slope, Nuiqsut faces issues with older and deteriorating housing stock, overcrowding, lack of utility infrastructure extended to platted subdivisions, an insufficient number of new homes, and exorbitantly high construction costs of both housing and infrastructure. Local

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governments and housing authorities need creativity and a variety of funding sources to rehabilitate older homes and facilitate new housing construction.

This chapter examines these issues in Nuiqsut, focusing on both existing conditions and current and future housing needs. It also provides guidance and information important to residents, community and borough leadership, and other policy makers about the current and projected status of housing in Nuiqsut.

### 8.1. Current Housing Conditions

Table 14 provides an overview of past and current housing characteristics in Nuiqsut as reported by the North Slope Borough Economic Profile and Census Report over a nine-year period. These are discussed in more detail in this chapter.

#### Table 14: Nuiqsut Housing at a Glance

<table>
<thead>
<tr>
<th>Housing Characteristic</th>
<th>2010</th>
<th>2013</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total Population</td>
<td>402</td>
<td>100%</td>
<td>449</td>
</tr>
<tr>
<td>Total Housing Units</td>
<td>136</td>
<td>100%</td>
<td>128</td>
</tr>
<tr>
<td>Renter-Occupied</td>
<td>53</td>
<td>46.5%*</td>
<td>30</td>
</tr>
<tr>
<td>Owner-Occupied</td>
<td>61</td>
<td>54.5%*</td>
<td>71</td>
</tr>
<tr>
<td>Vacant Units</td>
<td>22</td>
<td>16.2%</td>
<td>21</td>
</tr>
<tr>
<td>Average number of people per household</td>
<td>3.9</td>
<td>4.45</td>
<td>4.3</td>
</tr>
<tr>
<td>Percent of Overcrowding</td>
<td>Not available</td>
<td>Not available</td>
<td>13.5%</td>
</tr>
<tr>
<td>Percent of Severe Overcrowding</td>
<td>Not available</td>
<td>Not available</td>
<td>52.7%</td>
</tr>
</tbody>
</table>

*Percentage value based on total number of occupied units.
**Percentage value based on the total number of 2019 NSB survey responses only.

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Homes and Households. The number of housing units in Nuiqsut has not changed significantly between 2010 and 2019. The 2010 North Slope Borough Economic Profile & Census Report estimated that there were 127 homes in Nuiqsut; the 2015 NSB Census estimated 149 units. And more recently, the 2019 Census, there are 140 housing units in Nuiqsut. The NSB Assessing Office records indicate ten new homes were constructed over the last decade: one in each 2011, 2012, and 2013, and seven in 2014. There is a multiunit apartment building that is constructed and nearly ready for occupation. The majority of homes, 127 units, are single-family residence (SFR), accounting for over 90 percent of the housing stock in Nuiqsut. Thirteen units are multifamily residence (MFR), including the senior housing 5-plex. The NSB Census estimates that of these 140 units, 17 SFR units and five MFR units are considered vacant. The majority of vacant units are considered itinerant, seasonal, or recreational housing and are not accommodating for year-round habitation.

Age and Condition of Housing. The average size home in Nuiqsut is 1,159.7 square feet, including all types of homes – single family houses and multifamily units. The average is just slightly smaller than it was in 2010, at 1,200 square feet. Nuiqsut homes are similar in size to other homes in North Slope villages; the smallest homes are found in Atqasuk, at 1445.13 square feet. Homes on the North Slope are smaller than the average house size in Alaska and in the U.S., which are 1,789 and 1,721 square feet respectively.

The NSB Assessor tracks the age of structures by community and type. The Assessor’s records indicate that the average year of construction of single-family homes in Nuiqsut in 1987. Nearly all homes in Nuiqsut are single family homes. Given the harsh Arctic conditions and a lack of both experience tradespersons and readily available housing maintenance materials, many of the homes are overdue for renovations and weatherization upgrades.

All homes in Nuiqsut are heated with natural gas from nearby Alpine development. Ninety-six percent of homes have running water; 87 percent of homes have piped water piped while 13 percent receive water via truck.

### Table 15: 2019 Nuiqsut Housing Units

<table>
<thead>
<tr>
<th>Housing Statistic</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Housing Units</td>
<td>140</td>
<td>100%</td>
</tr>
<tr>
<td>SFR Units</td>
<td>129</td>
<td>89.4%</td>
</tr>
<tr>
<td>MFR Units</td>
<td>13</td>
<td>9.2%</td>
</tr>
<tr>
<td>Vacant SFR Units</td>
<td>17</td>
<td>11.9%</td>
</tr>
<tr>
<td>Vacant MFR Units</td>
<td>5</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

295 Ibid.
The 2019 NSB Census estimates that eight percent of housing units in Nuiqsut were over 20 years old. Of those, 91 or 80 percent of these structures were at least 30 years old. New housing construction has been slow in Nuiqsut, in part due to obvious constraints of being a remote community without year-round road access but primarily because essential utilities have not been extended to the platted subdivision south of the airport. While many residents would be able to build homes in spite of high construction costs, they cannot overcome the lack of utility service. Nuiqsut does not have local licensed contractors or tradespersons who can assist residents in building new housing or in maintaining or repairing home systems. Skilled carpenters, electricians, plumbers, and other tradespersons are flown into the village for new construction, weatherization upgrades, or when repairs are needed.

Only three new homes were constructed between 2011 and 2013, and another seven were constructed in 2014, all of which were single-family homes. To further address housing concerns, the NSB adopted a plan in 2019 to design and construct a 10-plex apartment building in Nuiqsut. In February 2021, the NSB and contractors began drilling operations to install pilings for the new 10-plex. Pilings were subsequently installed and stitched together, and plumbing and electrical lines were installed in the new 10-plex in March 2021. The expected completion date of the construction of the 10-plex is spring 2022.

Housing Occupancy. The NSB Census reports that the number of homes in Nuiqsut has declined slightly over the last ten years. The Census also indicates that there are approximately 22 vacant homes; 15.7 percent of housing in Nuiqsut is considered vacant, increasing from 14.8 percent in 2015. While the data indicates a high vacancy rate, residents have expressed that there is a severe lack of housing and that more homes need to be constructed or rehabilitated to ease the pressure on overcrowded households.

Home Ownership. Home ownership across all communities of the North Slope has increased steadily over the last twenty years. Since 2010, housing ownership across all NSB communities has increased, from 46 percent to 60 percent. Of the 77 households in Nuiqsut that responded to the 2019 NSB Census survey question regarding home ownership, approximately 71 percent of homes in Nuiqsut are owner-occupied and 29 percent are renter-occupied. The increase in home ownership represents a 30 percent
increase from the 2010 NSB Census and is similar to other North Slope villages of Point Lay and Wainwright.  

Of those that responded to the 2019 NSB Census, most renters indicated that their homes were owned privately. The vast majority of homeowners own their homes without a mortgage.  

**Housing Affordability.** The U.S. Department of Housing and Urban Development defines affordable housing as that which costs no more than 30 percent of the average household’s income. However, this definition is limited in some cases. High transportation costs to bring construction materials to Nuiqsut with the inability of the market to construct homes anywhere near the cost to construct them, makes the measure of affordability largely unreliable in such a unique location.

The average Iñupiat household income in 2019 in Nuiqsut was $50,501. Thirty percent of the average household income is $15,150, indicating that per the HUD definition of affordability, housing would need to cost less than $15,150 annually, or approximately $1,262.53 per month, for the average household in Nuiqsut. The average cost for owner occupied housing was $618.33 and $705.47 for renters. These figures indicate that the majority of homeowners and renters in Nuiqsut are not cost-burdened. However, in addition to mortgage or rental costs, residents also pay, on average, a monthly combined cost of $261 for heating, electricity, and water service, adding to the total cost of maintaining a home.

Property taxes in some areas can significantly add to a homeowners’ financial obligation. Like many communities in Alaska, the North Slope Borough offers exemptions for some homeowners. Exemptions do not affect the tax rate. Rather, they reduce the value of a home that’s subject to taxation. The borough offers a $50,000 property tax exemption for owner occupied homes, $150,000 for senior citizens and disabled veterans, and between $10,000 and $20,000 for volunteer fire fighters or volunteer emergency medical services providers. Some homeowners may be able to significantly reduce or eliminate their property tax burden if they qualify for multiple exemptions. The North Slope Borough also has an income-based grant program for residents that provides property tax relief. The grant program does not provide exemptions. Instead, it provides financial assistance for property tax debt.

In Nuiqsut, the NSB Assessing Office reports that the minimum assessed value of homes in Nuiqsut is $14,500 with a maximum value of $461,600. The average assessed value is $22,501. After applying property tax

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303 Ibid
exemptions, the taxable value of homes in Nuiqsut ranges from $0 to $176,700. Property taxes range from a low of $0 to a high of $3,179. Nuiqsut homeowners pay an average of $737 in property taxes annually.305

The most recent Alaska Construction Cost Survey was prepared in 2015 by the Alaska Housing Finance Corporation. The survey collects contractor pricing for a market basket of materials (building supply, concrete, and shipping companies) determined by the design of a model home. The market basket represents approximately 30 percent of the materials used in the model home; however, it does not represent 30 percent of the total cost to build it.306 It allows comparisons across Alaska’s communities. The report revealed that Utqiagvik had the highest average cost for the market basket of goods of the sample Alaska cities, at $61,510, compared to Anchorage, the lowest, at $23,405 or 263 percent of the Anchorage cost. The market basket cost is also $11,631 more than the next most expensive community, Bethel. These figures require an added perspective: when one considers that Utqiagvik, as the North Slope hub community, is less expensive than Nuiqsut. Transport to Nuiqsut would add substantial additional freight costs to the market basket price for Utqiagvik. The report is also six years old now; the cost of purchasing and transporting building materials has increased in recent years. The COVID-19 pandemic disrupted supply chains and altered demand. Building materials were significantly cheaper than they are today.

The availability of housing and the cost to construct new housing is an issue that significantly contributes to the lack of housing in Nuiqsut. Overcrowding and severe overcrowding may be a larger issue than a household simply being cost-burdened; it is the lack of housing availability that most greatly affects the community.

Table 16: Nuiqsut Housing Ownership

<table>
<thead>
<tr>
<th>Renter-Occupied</th>
<th>Owner-Occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNHA Rental</td>
<td>TNHA (mutual help)</td>
</tr>
<tr>
<td>NSB Rental</td>
<td>Owned w/ mortgage/loan</td>
</tr>
<tr>
<td>UIC Rental</td>
<td>Owned free &amp; clear</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 16: Nuiqsut Housing Ownership

Overcrowding. HUD defines an overcrowded dwelling as one in which more than one person per habitable room resides in the house and a severely overcrowded dwelling as one with one and a half or more people per habitable room.\(^{307, 308}\)

Approximately 6.4 percent of 16,100 of the 257,000 occupied homes in Alaska are overcrowded or severely overcrowded\(^{310}\) while the national housing overcrowding rate is 3.4 percent.\(^{311}\) The percentage of Alaska homes that are too small for the number of occupants is two times greater than the national rate. The highest rates of overcrowding are in rural areas where the population majority is Alaska Native, with nearly half of all households in some areas being overcrowded.\(^{312}\) The 2018 Alaska Housing Assessment estimated that 27 percent of all North Slope households live in overcrowded conditions; 15 percent of the population in the seven remote North Slope villages resided in overcrowded conditions and another 12 percent in severely overcrowded homes, more than eight times the national average.\(^{313}\) Non-hub NSB communities, such as Nuiqsut, experience even higher overcrowding rates (33 percent) with 19 percent classified as overcrowded and 14 percent classified as severely overcrowded.\(^{314}\)

The 2018 rate of overcrowding is essentially unchanged since 2014 when the AHFC Housing Assessment estimated that approximately 26 percent of North Slope households lived in overcrowded conditions: 14 percent were overcrowded and 12 percent were severely overcrowded.\(^{315}\) The 2019 NSB Census provides greater detail on overcrowding in each of the villages. It reports that two-thirds of all households in Nuiqsut are overcrowded: 13.5 percent of homes are considered overcrowded and 52.7 percent are severely overcrowded. This

![Figure 10: Housing Overcrowding](image)

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307 Habitable rooms are any spaces separated by a partial or complete wall, including kitchens, living rooms, dining rooms, bedrooms, etc., but not including bathrooms, porches, balconies, foyers, halls or unfinished basements.


313 Ibid


is significantly higher than any other community; the next highest rate of severely overcrowded homes is in Wainwright, at 33.6 percent followed by Point Lay at 26.2 percent. Nearly all of the overcrowded and severely overcrowded homes in Nuiqsut are Iñupiat households.

Overcrowded and dilapidated housing has been a concern common in all North Slope villages during village comprehensive plan workshops held between 2014 and 2021. The recognition of this issue led the North Slope Borough Assembly to allocating significant capital funds to facilitate housing development during the CIP annual funding process. It has also led to the borough taking a more active role in housing in recent years, starting in 2011 with the formation of the Housing Solutions Group, a governmental division that was housed within the Mayor’s Office, to reestablishing the standalone Housing Department within the NSB government in 2018.

A 2014 unpublished white paper prepared by TNHA identified major housing issues facing North Slope communities. The paper further substantiates the dramatic housing need in Nuiqsut; 120 families were living in overcrowded conditions with a shortage of 68 homes. While this paper analyzed conditions eight years ago, according to the 2019 NSB Census, the housing stock has increased by ten homes increase since 2010. Percentages of overcrowded and severely overcrowded homes are depicted in Figure 10.

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[316] The average number of people per household in North Slope communities in 2019 was: AKP 3.6; ATQ 4.2; KAK 3.29; NUI 4.3; PHQ 3.95; PIZ 4.18; AIN 3.66; UTQ 3.43.


Homelessness. A 2017 national assessment by the Urban Institute for HUD that evaluated American Indian, Alaska Native, and Hawaiian housing needs found that overcrowding issues in Tribal areas are mostly due to households taking in family members who would otherwise be homeless. This is especially true in a region like the North Slope, where the cold climate necessitates housing community members that otherwise would be living on the streets. As the former President/CEO of the Bering Straits Regional Housing Authority, Christopher Kolerok, points out during a 2018 housing forum held in Savoonga “Rooted in a close-knit culture and deep familial links, many families prefer to house people in need, and live in severe overcrowding, rather than let individuals risk certain death if they are unsheltered... Overcrowded housing and the lack of housing are interchangeable conditions in rural Alaska. The lack of safe, sanitary and affordable housing threatens the survival of Native cultures and the villages and towns many Alaska Natives call home. For American Indians and Alaska Natives, overcrowded housing is a manifestation of what would be unsheltered homelessness in other parts of the country.” There is not available data on the rate of homelessness on the North Slope or in Nuiqsut, but anecdotally, residents know that many would be homeless if not for the fellow residents that have taken them in.

Land Availability and Infill Development

Residences and services are generally not segregated in Nuiqsut. There are approximately 102 lots available for development in the subdivision south of the airport. These lots are either owned by Kuukpik Corporation or have been conveyed to Kuukpik shareholders via the shareholder home site program. Kuukpik Corporation has made residential lots available to all of its original shareholders so that all shareholders who desire to have a home in Nuiqsut are able to have one. Kuukpik has provided a lot to all original shareholders who requested one and have satisfactorily met the administrative requirements to receive one. Many lot recipients who would like to construct a home on their lot cannot reasonably do so due to the lack of utilities. However, without extending at least additional roads, natural gas, and electric service to this subdivision, residents are unable to construct homes.

In the heart of the community, there are approximately 71 additional lots for residential development and another eight for commercial or public uses. Map 12: Land Use depicts vacant lots within the community that could be developed. Because water, wastewater, and natural gas lines are already installed in the center of Nuiqsut, the cost savings to fully utilize these infill lots for additional housing rather than developing new lots is substantial. Extending service to the subdivision south of the airport would be considerable. To spur new development, this subdivision requires roads, power connections, natural gas utilities, and water and wastewater service. It is not enough to simply construct roads and assume residents can use water delivery and wastewater holding tanks. The extension of natural gas to new lots is essential.

Water and wastewatersystems are notoriously expensive to develop on the North Slope; in

Nuiqsut, extending piped water and wastewaterservice with road, electric, and natural gas infrastructure to the subdivision south of the airport would cost over $52 million.\textsuperscript{322, 323} Connecting existing lots in the center of town to the water and wastewater system that are already serviced by roads and other utilities would not be as expensive, estimated to cost $23 million. Truck haul water and wastewater service is less expensive; developing road, electric, and natural gas infrastructure with truck haul service would cost significantly less.\textsuperscript{324, 325} Any of these also increases costs for operations, equipment, and expansion of water storage, wastewater treatment, and power generation facilities.

Nuiqsut is the only community with a winter ice road. This allows construction of infrastructure at a lower cost than that of other North Slope communities relying on barge or air transport of goods.

### 8.2. Housing Roles

Housing authorities are independent agencies organized under state law to leverage funding from HUD. The HUD places certain guidelines on housing authorities’ operations. However, they have their own boards, managers, and often rules and guidelines. A housing authority’s day-to-day operations are overseen by an executive director. There is not a housing development industry in Nuiqsut as there are in most communities in the U.S. Without this industry, the NSB, the regional housing authority, the City and Native village of Nuiqsut, and residents must navigate the path without private industry assistance.

Tağiugmiullu Nunamiullu Housing Authority. TNHA is the regional housing authority for the North Slope. Five tribes have authorized TNHA to act on their behalf as their Tribally Designated Housing Entity (TDHE): the Native Village of Atqasuk, the Native Village of Kaktovik, the Native Village of Nuiqsut, the Native Village of Point Lay, and the Naqsragmiut Tribal Council (Anaktuvuk Pass). TNHA manages housing projects and block grant funding through the Native American Housing and Self-Determination Act (NAHASDA) and other federal and state programs. TNHA offers homeownership assistance that includes admissions and occupancy, counseling, inspections, and work order fulfillment.

TNHA designed and constructed five low-cost energy efficient single-family homes in Nuiqsut in 2013-2014. These homes were built to arctic-climate specifications in coordination with the Cold Climate Housing Research Center. This project, named the TNHA Sustainable Housing Project Generation V, focused on constructing homes that are self-sustained. Construction for each house included super-insulation to reduce fuel usage, portable and adjustable foundations, solar hot water collection, integrated heating and ventilation, and an individual water and wastewater system. Preliminary planning for areawide evaluation for housing needs across all North Slope villages is anticipated to take place summer 2022.\textsuperscript{326}
Native Village of Nuiqsut. The Native Village of Nuiqsut manages a Tribal housing program for the community. Like THAN, Nuiqsut is a TDHE and eligible for some housing program funds, including NAHASDA. NVN is struggling to manage its programs due to reduced staff capacity due to COVID-19 as well as maintenance needs to its offices. TNHA could serve as a mentor to assisting tribe in applying for and managing grant funds.

North Slope Borough Housing Department.

The NSB Housing Department was created in 2018 to address critical housing needs across the Arctic Slope. The NSB plans to build a 10-plex in Nuiqsut, but construction has slowed due to the COVID-19 pandemic. The NSB Housing Department does not currently have any other planned projects for the village of Nuiqsut.

8.3. Housing Needs

There is a current need for additional housing units in Nuiqsut. TNHA estimated a shortage of 68 houses in Nuiqsut in 2014.327 With population growth, the 2020 need was approximately 80 homes. A new ten-plex multi-family building was constructed over the last couple of years. Accordingly, with a medium growth rate over the next twenty years, a total of approximately 89 houses would be needed by 2040 if no new homes are constructed.

Additional apartments are desired by residents to alleviate severe overcrowding and would assist in relieving additional housing need.328 Residents have noted in public meetings that homes could be easily constructed in the platted subdivision south of the airport.329 Roads and utilities need to be extended to this subdivision before lot owners could construct homes. They have also noted that new homes should be designed in a way that is more compatible with the environment and local lifestyle. Arctic entries, increased insulation, and proper ventilation are just some of the ways that new homes must complement residents’ needs. In 2019, Nuiqsut Tribal leaders considered an innovative approach to combating the lack of housing. They approached TNHA about 10 – 15-year old Joint Base Elmendorf-Richardson (JBER) barracks available to rural communities. However, the costs for rehabilitating the barracks to arctic standards and transferring the barracks to Nuiqsut via truck on the ice road outweighed the cost to develop new housing units. TNHA plans to evaluate the need for new homes in Nuiqsut in 2022 and anticipates constructing new multi-family housing units by 2025.330

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329 Ibid
9.1. Economy

The cash economy involves earned income, corporation dividends, and government payments. This section contains an overview of the contribution of subsistence to the local economy followed by a discussion of employment income and other income.

As in other North Slope villages, both subsistence activities and cash contribute to the economy. The local economy is bolstered by the subsistence economy, which includes harvesting plants and animals, trade of subsistence resources within and outside of the village, bartering food and services, and sharing food with elders and others who cannot participate in harvest activities.

**Subsistence Contribution to the Economy.** Subsistence activities undoubtedly contributes a significant amount of economic value through provision of goods and services. Considering the high costs of goods, fuel, and transportation, subsistence harvests reduce food costs by providing a local source of nutrition. In addition to its economic contribution, subsistence provides cultural identity and spiritual sustenance. Subsistence activities are not oriented towards sales, profits, or commercial accumulation of cash, but instead are focused on meeting the nutritional and clothing needs of families and the community.

It is difficult to associate a direct cost to economic benefits of the subsistence economy. According to the 2019 North Slope Borough Economic Profile and Census Report, all Nuiqsut Iñupiat households’ diets include at least some subsistence foods, with 88 percent of households whose diets consisted of half or more of subsistence foods.331

The economic basis in Nuiqsut depends on a combination of wage employment, dividend income, and subsistence activities. The

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331 Percent of households whose diets consisted of half or more of subsistence foods is based on a survey of 52 Iñupiat households.
sustainability of this mixed subsistence-market economy is dependent upon a tradeoff between the amounts of time necessary to achieve subsistence harvest versus the amount of time spent participating in the wage economy. Therefore, residents in Nuiqsut who participate in the wage economy often prefer roles of employment that complement a flexible or seasonal work schedule to allow for proper engagement in subsistence activities.  

Subsistence activities require substantial amounts of both time and finances to purchase necessary equipment for fishing, whaling, and hunting. Income from wage employment and dividends provide the financial means to purchase the necessary tools for subsistence activities. Some financial aspects of subsistence have been quantified. The 2019 Census includes data about subsistence-related expenses. Subsistence users incur significant expenses for fuel and equipment, including snow machines, ATVs, boats, motors, guns, ammunition, and nets. Annual expenditures for subsistence activities for Iñupiat residents in Nuiqsut has generally stayed the same since 2010, as shown in Table 17. In 2019, the average household expenditure for subsistence was $7,109, a seven percent increase from 2015 expenditures as adjusted for inflation based on the Bureau of Labor Consumer Price Index (CPI) inflation of approximately six percent.  

This brief discussion on the economic aspects of subsistence supplements the information presented in Chapter 6 that is dedicated to subsistence in Nuiqsut.

**Employment.** Opportunities for employment in Nuiqsut mainly consist of jobs in local government, the school district, and village corporations.

The labor force in Nuiqsut includes all individuals aged 16 – 64. Between 2003 and 2019, the labor force has fluctuated, from a high of 68.1 percent of the total population in 2015 to 55.9 percent in 2019. Table 17 summarizes age groups in 2003, 2010, 2015, and 2019 from the 2019 NSB Census. The 0 – 15 age group has increased to its highest percent of the total Nuiqsut population since 2003; the 65+ age group has remained fairly steady over the years. It is at its lowest point by two percent since 2015.

<table>
<thead>
<tr>
<th>Year</th>
<th>Avg HH Cost</th>
<th># HH Surveyed</th>
<th>Avg HH Cost</th>
<th># HH Surveyed</th>
<th>Avg HH Cost</th>
<th># HH Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$7,135</td>
<td>69</td>
<td>$6,144</td>
<td>64</td>
<td>$7,109</td>
<td>42</td>
</tr>
<tr>
<td>2015</td>
<td>$6,513</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>$7,109</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*I*ndicates Iñupiat households only


334 Ibid.
### Table 18: Individuals in Labor Force by Age Group\(^{335}\)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2003</th>
<th>2010</th>
<th>2015</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>35.4%</td>
<td>25.7%</td>
<td>31.0%</td>
<td>39.5%</td>
</tr>
<tr>
<td>16-64</td>
<td>59.4%</td>
<td>68.1%</td>
<td>62.4%</td>
<td>55.9%</td>
</tr>
<tr>
<td>65+</td>
<td>5.2%</td>
<td>6.2%</td>
<td>6.7%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

At the same time that the proportion of individuals in the labor force has decreased, Nuiqsut has experienced an increase in the percent of residents that have permanent full-time employment, as shown in Table 19. Of the 167 survey respondents in the labor force in 2019, 76 held full-time jobs, 17 worked seasonal jobs, 10 worked part-time jobs, and 20 were retired.

### Table 19: Labor Force by Survey Year\(^{337}\)

<table>
<thead>
<tr>
<th>Type of Employment*</th>
<th>2003</th>
<th>2010</th>
<th>2015</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Full-Time</td>
<td>23.6%</td>
<td>36.3%</td>
<td>47.3%</td>
<td>45.5%</td>
</tr>
<tr>
<td>Temporary / Seasonal</td>
<td>9.3%</td>
<td>12.7%</td>
<td>12.2%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>9.0%</td>
<td>11.2%</td>
<td>3.1%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>10.2%</td>
<td>29.3%</td>
<td>28.2%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Retired</td>
<td>6.8%</td>
<td>10.4%</td>
<td>9.2%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Still in School</td>
<td>41.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*The labor force includes all individuals aged 16-64.

Forty-four 2019 NSB Census survey respondents were unemployed, representing a 26.3 percent unemployment rate, up from 10.2 percent in 2003. The unemployment rate in Nuiqsut is over 6.5 times higher than the 2018 national unemployment rate of 3.9 percent.\(^{336}\)

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\(^{336}\) Ibid

\(^{337}\) Ibid
The major employers in Nuiqsut from 2003 to 2019 for Iñupiat residents have been the North Slope Borough and the Native village corporation, Kuukpik Corporation. Employment at Kuukpik Corporation has declined significantly between 2003 and 2019, as shown in Table 20. For non-Iñupiat residents, the major employer in Nuiqsut has historically been the North Slope Borough School District. The percentage of non-Iñupiat residents employed by the North Slope Borough increased significantly in 2019. However, because there are few non-Iñupiat residents, adding just a few new employees to the payroll can show a significant percentage increase.

**Income.** The average annual household income for Iñupiat households in Nuiqsut in 2019 was $50,501 with a per capita income of $9,880. This is an increase from the 2015 NSB Census, which estimated the average Iñupiat household income at $44,346 with a per capita income of $10,840. Seventy percent of Nuiqsut’s Iñupiat total household income is derived from dividend payments, primarily from Kuukpik Corporation, ASRC, and the Alaska PFD. In contrast, the average household income for non-Iñupiat households in Nuiqsut in 2019 was $85,985 with a per capita income of $46,300. Ninety-eight percent of Non-Iñupiat household income is derived from wages.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Employer*</th>
<th>2003</th>
<th>2010</th>
<th>2015</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iñupiat</td>
<td>NSB</td>
<td>27.6%</td>
<td>33.0%</td>
<td>36.1%</td>
<td>21.3%</td>
</tr>
<tr>
<td></td>
<td>NSBSD</td>
<td>9.2%</td>
<td>-</td>
<td>12.5%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Village Corp.</td>
<td>37.8%</td>
<td>22.7%</td>
<td>15.3%</td>
<td>13.5%</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>-</td>
<td>12.9%</td>
<td>-</td>
<td>21.3%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>12.5%</td>
<td>-</td>
</tr>
<tr>
<td>Non-Iñupiat</td>
<td>NSB</td>
<td>8.3%</td>
<td>14.3%</td>
<td>31.6%</td>
<td>73.3%</td>
</tr>
<tr>
<td></td>
<td>NSBSD</td>
<td>75.0%</td>
<td>57.1%</td>
<td>52.6%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>-</td>
<td>-</td>
<td>10.5%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-</td>
<td>11.4%</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

340 Ibid
341 Ibid
According to the 2019 NSB Census, the three major sources of income for Iñupiat households in the North Slope Borough are wage income (49 percent), Native corporation dividends (38 percent), and PFD dividends (eight percent). For Nuiqsut Iñupiat households, wages comprise 27 percent of total income, Native corporation dividends 57 percent, and PFD dividends 13 percent. Other major sources of income in Nuiqsut include social security/pension/retirement income and food stamps/child support income. Figure 11 details the average Iñupiat household contribution of income sources in Nuiqsut.

**Permanent Fund Dividends.** The Alaska Permanent Fund provides an annual dividend to each qualifying resident. The PFD was created to allow Alaskans to share in a portion of the State’s nonrenewable minerals revenue, which benefits present and future generations. The dividend amount varies each fiscal year depending on annual oil investment revenues, and equal payments are generated annually to qualifying Alaska residents. In 2018 the PFD amount was $1,600; $1,100 in 2017; $1,022 in 2016; $2,072 in 2015; $1,884 in 2014; and $900 in 2013.343

In 2019, 464 Nuiqsut residents applied for the PFD and 427 of those applicants qualified to receive the Alaska PFD. As shown in Figure 11, the PFD accounts for 13 percent of the total household income of Nuiqsut Iñupiat residents. Since 2010, the number of residents in Nuiqsut who applied for the PFD has increased by 17 percent, and the number of qualifying residents to receive the Alaska PFD has increased by 16 percent.

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Native Corporation Dividends. Kuukpik Corporation was established in 1973 and owns surface rights to land in the vicinity of Nuiqsut. Original enrollment included 212 original Class A shareholders, who each received 100 shares. As of 2015, approximately 384 Nuiqsut residents were enrolled as shareholders. These new holders acquired shares by inheritance or gift only and likely hold less than 100 shares, creating disproportionate dividend funds in the community.

In December 2019, the shareholders of Kuukpik Corporation voted to create a new class of shareholders. Kuukpik successfully enrolled a new generation of shareholders in 2020/2021, allowing many more local and non-local shareholders to participate in and benefit from the Corporation’s success.344

Kuukpik Corporation plans to bring qualifying Class B shareholders on board in 2021 and will add two new board seats for Class B shareholders. Kuukpik Corporation dividends will continue to be distributed quarterly and will be divided equally amongst Class A and Class B shareholders.

ASRC was established in 1972 and owns subsurface titles to land in the vicinity of Nuiqsut. As of 2010, 97.4 percent of Nuiqsut residents are ASRC shareholders, each holding 100 shares. In 2014, ASRC began distributing dividends quarterly instead of semiannually.

Oil and Gas. Oil and gas revenues play a significant role in the economics of Nuiqsut. Nuiqsut has been identified as the NSB village most directly impacted by oil and gas activities, as it is closer to current oil and gas facilities than other NSB communities.345 In March 2014, the U.S. Army Corps of Engineers (USACE) approved permits for a 5.8-mile road connecting the community of Nuiqsut at the landfill access road to the industrial CD-5 Access Road.346 The Kuukpik Corporation constructed, owns, and maintains the 24-foot wide road and the 10-acre gravel pad located at the junction with the CD-5 road. The spur road provides Nuiqsut residents’ access to the ConocoPhillips Alaska, Inc. Alpine Development Project for training and job opportunities; satellites in the Colville River Delta and in NPR-A; winter ice roads that connect to the Spine Road; and subsistence areas. The Spur Road also provides local employees the opportunity to return home each day rather than participate in the typical two week on two weeks off rotation, allowing these employees the time to engage in subsistence activities. Kuukpik Corporation (through Kuukpik Works), Kuukik subsidiaries, CPAI and Santos are collaborating to deliver more employment opportunities for Nuiqsut residents to work during the day and come home at night. These

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subsidiaries are involved in ice road construction, gravel mining and hauling, drilling, oil field security, and other seasonal work.

Private Infrastructure and Business. According to the Alaska Department of Commerce, Community, and Economic Development, there are seven active business licenses in Nuiqsut licensed by the State of Alaska:

Active business licenses:
- Eunice Mary Brower
- Kuukpik Hotel
- Kuukpikmiut Subsistence Oversight Panel (2 licenses)
- Manu 2, LLC
- Ullaaq & Qannik Pop Shop
- West Wind Rental, LLC

Private Buildings and Facilities. Private buildings and infrastructure include churches and various businesses, including the Kuukpik Corporation offices, the AC grocery store, fuel station, a construction camp/hotel, the Nanuq Inc. construction services company, and various telecommunication facilities.

Employment Perceptions. Residents have expressed concern over the high unemployment rate and the need for local jobs. Seasonal and temporary jobs are beneficial to the community members because they provide the flexibility to pursue seasonal subsistence activities while participating in the wage economy. These jobs are often construction work. However, there is concern that when these jobs are available in the community for building community facilities and infrastructure, outside hires take those jobs, even when there are qualified locals. When there are not qualified locals to fill jobs, the community would like contractors to hire and train locals so that they are able to learn new skills and be able to maintain the buildings and infrastructure without having to wait for tradespeople from outside Nuiqsut to return to the community.

Nuiqsut residents have expressed the need for economic summits to be held specifically for Nuiqsut as well as for the North Slope region. The summits would be a gathering of both existing and potential business, industry, and community and government leaders to share ideas, ask questions, learn about the possibility for new initiatives, and explore opportunities and collaborations.

9.2. Health

Public Health Services. Nuiqsut has an NSB-operated health clinic staffed by two health aides. It is open weekdays and for emergencies. The Fire Department operates an ambulance that serves the clinic. Residents report that the ambulance is often in Alpine and unavailable for local use and that often volunteer ambulance drivers are not available when the need arises. Temporary duty travel (TDY) eye doctors come to the village twice a year and dentists and medical doctors visit the village every three months for one-week stays.

The two health aides in Nuiqsut are part of the Community Health Aide Program (CHAP). CHAP is a program designed to provide quality health services to rural, remote, and culturally distinct populations. Community health aides are the

backbone to providing health care in Alaska’s villages that may otherwise not have consistent health services.

CHAP programs received formal federal recognition and congressional funding in 1968 and today, they function as part of a regional team to assess and provide emergent, acute, and chronic medical care in remote Alaskan communities. Bringing care closer to home is not just a benefit to the psychological well-being of the patient, it is also more efficient and cost-effective.

Currently the Nuiqsut clinic rooms are designed for a medical provider and patient without space for others. Health clinic staff has expressed the need for clinic exam rooms designed for multiple family members, public health nursing staff, translators, and others. Redesigned exam rooms that make space for a holistic and systematic approach to health care is more consistent with the community’s needs and its culture.

Access to Healthcare. Nuiqsut health services are provided by three different organizations: North Slope Borough Health and Social Services Department, Arctic Slope Native Association (ASNA), and the Iñupiat Community of the Arctic Slope.

North Slope Borough Health and Social Services Department provides the following services:
- Village health clinic facility and staffing of community health aides
- Eye clinic
- Arctic Women in Crisis (AWIC) assistance
- Woman, Infant & Children (WIC) program
- Children & youth services
- Public health nursing
- Senior services
- Public health office/Veterinary clinic services
- Behavioral health services
- Counseling and suicide prevention

ASNA provides the following services:
- Primary health care services
- Dental services
- Medical travel
- Screening for Life Services:
  - Mammograms and clinical breast exams
  - Pap tests
  - Prostate cancer screening tests
  - Colorectal cancer screening tests
  - Lung cancer screening tests
  - Health education
- Help with coordinating assisted care
- Behavioral health services
- Medical housing
- Funeral assistance
- Funeral travel assistance
- Childcare development fund

ICAS provides the following services:
- Stephanie Tubbs Jones child welfare services
- Promoting safe and stable families
- Indian Child Welfare Act assistance

Personal Health. The overall health of the Nuiqsut community depends on many factors that include access to resources such as quality and affordable housing, employment opportunities, quality education, recreational opportunities, income and employment, living conditions, food, cultural well-being, environment, public infrastructure, and a safe community and homes. This chapter examines personal health as well as some community health issues. Other chapters in this plan examine health related to issues such as housing and infrastructure.
The 2019 North Slope Borough Economic Profile and Census Report contained a health survey, conducted to better understand the health issues facing North Slope communities, to work more effectively within villages on addressing community health issues, and to inform, planning and policy decisions that impact community health. Health conditions were gathered using a self-reporting survey by heads of households. Self-reported health information has been gathered by the North Slope Borough for previous census reports, offering longitudinal data on certain issues.

In both 2010 and 2015, 39 percent of Nuiqsut residents reported themselves to be in Very Good or Excellent health while 22 percent were in Fair or Poor health.\textsuperscript{351, 352} In 2019, only 32 percent of residents considered themselves to be in Very Good or Excellent health.\textsuperscript{353} One significant health issue in Nuiqsut is smoking. On average, 50 percent of NSB Inupiat individuals that are over the age of 16 smoke. However, in Nuiqsut the number of smokers is higher, on average 62 percent in 2010 and 2015, however there is evidence smoking is decreasing.\textsuperscript{354, 355} In 2019, 59 percent of Nuiqsut residents reported smoking. Data analysis from 2015 implied that younger people in Nuiqsut are being recruited into smoking in increasingly higher numbers. This is the opposite of trends within the U.S. (as fewer and fewer young people smoke) and implies for Nuiqsut increasing rates of morbidities (diabetes, heart and breathing problems) as their younger cohort of household heads age.\textsuperscript{356} Specific health indicators from 2010 to 2019 are provided in Table 20.

### Table 21: Health Indicators

<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>Nuiqsut</th>
<th>NSB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good or excellent general health</td>
<td>39%</td>
<td>86.4%</td>
</tr>
<tr>
<td>Good health</td>
<td>36.8%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Fair to poor general health</td>
<td>22%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>62%</td>
<td>69%</td>
</tr>
<tr>
<td>Obesity – heads of households</td>
<td>38%</td>
<td>40.3%</td>
</tr>
</tbody>
</table>

One particular health concern in Nuiqsut and most rural communities in Alaska is the prevalence of cancer. Cancer is the leading cause of death among Alaska Native people. The four leading cancers (breast, colorectal, lung, prostate) account for more than 50 percent of all cancers diagnosed among Native Alaskans. In the U.S., lung, colon and rectum, stomach, kidney and nasopharynx cancers are more common in Alaska Native people than among white people. In the past, cancer rates were similar between Alaska Natives and U.S. white women but over the past 20 years, cancer rates among Alaska Native women have increased, now 20 percent higher than white women in the U.S.\textsuperscript{357} Avoiding tobacco, keeping physically active, eating healthy, and scheduling age-appropriate cancer screenings.\textsuperscript{358}

Adequate access to healthy food is critical in achieving and maintaining a nutritious diet. Healthy eating is associated with a lower risk for chronic diseases such as diabetes, hypertension, and obesity. According to the U.S. Department of Health and Human Service’s Office of Disease Prevention and Health Promotion, healthy eating and regular physical activity can help maintain good health while also reducing the risk of chronic disease. The 2015 – 2020 Dietary Guidelines provide five overarching guidelines that encourage healthy eating:

- Follow a healthy eating pattern across the lifespan;
- Focus on variety, nutrient density, and amount;
- Limit calories from added sugars and saturated fats and reduce sodium intake;
- Shift to healthier food and beverage choices;
- Support healthy eating patterns for all.

Harvesting local subsistence food has been central to the culture of many Alaska communities, including Nuiqsut. The evolution to partial cash economy, however, often means greater reliance on store-bought food. In Nuiqsut, like much of rural Alaska, the quality and availability of store-bought food is subject to fluctuations outside the control of local residents. Access is dependent on the schedule of the barge or flight, the weather, as well as a person’s ability to pay high prices that can be twice as much or more than the cost of food in Fairbanks or Anchorage. Options are limited to what is available on the shelves. Perhaps most importantly, store-bought foods do not fulfill the important roles that traditional foods play in Nuiqsut.

Generally, local harvested foods are more affordable than store-bought foods. Many believe that wild foods provide better protection against the cold weather, and that harvesting and processing local foods requires considerable exertion which sharpens physical and mental well-being. The North Slope Borough Wildlife Management Department regularly tests samples of harvested wildlife to monitor the overall health of subsistence animals and their ability to provide nutrients and dietary health to Borough residents.

Nuiqsut is a “dry” community meaning that the sale, importation, and possession of alcohol is banned, although drugs and alcohol are


\textsuperscript{358} Ibid.
smuggled illegally into the community. In 2010, Twenty-eight percent of households in Nuiqsut stated that a member had been hurt by drugs or alcohol within the past 12 months.

Physical activity is essential to good health. Regular exercise helps maintain healthy weight and reduces the risk of high blood pressure, type 2 diabetes, heart attack, and stroke. Planning efforts that promote physical activity might include pedestrian safety initiatives, access to a park and playground, a swimming pool and gym, or other recreational facilities which facilitate physical activity. The Nuiqsut Trapper School provides a gymnasium for community use. Nuiqsut also has a softball field.

Healthy Environment. The environment plays a significant role in shaping a safe and healthy community. Environmental factors that can affect community health include exposure to hazardous substances in the air, water, soil, and food; physical hazards, such as noise or slips/falls; and weather hazards. In addition to basic needs, a healthy environment supports safety and social interaction.

Physical features of a community can affect personal health and quality of life. How a community is planned, designed, built, and used, such as land use, road network, pedestrian safety, and the location or existence of parks, recreation facilities, and other services can contribute to an active way of life or a more sedentary one. People tend to be more active when they can easily walk or have access to recreational facilities. Comprehensive planning and land use regulations can be used to positively guide land use.

Poor indoor air quality and ventilation is a significant issue for many Alaska homes built in the 1970s and 1980s. Older homes often have a higher risk of moisture and air quality issues than newer homes. Of the 140 housing units in Nuiqsut, only 10 were constructed after 2008. Other housing issues relate to overcrowding; over 66 percent of homes in Nuiqsut are either overcrowded or very overcrowded. Relieving overcrowded conditions can boost both physical and mental health. The physical benefits of relieving overcrowding include reduced spread of illness; the less people, the fewer the opportunities to transmit diseases. Better hygiene is also related to alleviation of overcrowding because it is easier to keep a home clean and in good condition when not in constant use. Also associated with easing overcrowding is healthy sleep patterns; reduced noise and activity couples with additional sleeping space allows for better sleeping. The mental health benefits of mitigating overcrowding include preventing depression and domestic conflict as well as helping children to do better in school because they have space and a quiet environment to study and learn.

More information on overcrowding can be found in Chapter 8.

Airborne dust is problematic, causing respiratory problems such as bronchitis, asthma, and a high incidence of sinus infection. Periods of poor air

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quality have been reported in Nuiqsut. Annual quality measurements taken in the community reveal several periods annually of moderate and/or unhealthy airborne particulate matter. Research has shown that children exposed to outdoor particulate matter are more likely to develop asthma and need emergency room or hospital treatment for it.364

Infants and children are especially vulnerable to adverse environmental conditions and require special protections in risk assessments, regulations, and laws. Infants are highly sensitive to toxic chemicals or other hazardous exposures. Even very small exposures can cause profound and lasting impacts on health. Exposures in utero or early life can cause lifelong damage. Likewise, children are not small adults; they take in more air, food, and water than adults on a body-weight basis and their development is easily disrupted by exposures that would cause significantly less harm to an adult.365

Patterns of disease in children and children's environments have both have changed profoundly since 1950. The prevalence of autism, asthma, attention deficit hyperactivity disorder (ADHD), obesity, diabetes, and birth defects have increased substantially in children around the world. As the incidence of environmental health conditions rise, more than 80,000 new chemicals have been developed and released into the global environment. In 2001, the World Health Organization attributed 36 percent of all childhood deaths worldwide to environmental factors. In North America, environmental conditions are on the rise, including the prevalence of asthma, childhood leukemia, and some birth defects. Developmental disabilities such as dyslexia, ADHD, autism and others are also on the rise, affecting 10 to 15 percent of all children in 2001.366 During 2019-2020, the rate of children 10 – 17 years of age that were overweight or obese was 16.2 percent of youth. During the same timeframe, 28.7 percent non-Hispanic Americans, American Indian/Alaska Native youth had the highest rate of obesity of the groups studied.367

Living near oil and gas wells increases air pollution exposure, leaving people at greater risk of preterm births, asthma, respiratory disease and cancer.368, 369 One recent study analyzed fourteen years of air quality data across California, finding higher levels of air pollutants within two and a half miles of oil and gas wells. The oil and gas wells emit particulate matter (PM2.5), carbon monoxide, nitrous oxide, ozone, and volatile organic compounds (VOCs).370 The findings align with other smaller-scale studies that have measured emissions from a handful of wells. Many California residents are calling for a buffer around oil and gas facilities to limit chronic exposure. Closer to home, CPAI conducts studies of air quality in and around Nuiqsut in effort to appease residents’ concerns about the air quality. More information is found in Section 5.3.

Recorded wind data since the 1980s has shown that instead of circulation based on pressure, wind along the Beaufort Sea coast is affected primarily by the arctic sea breeze and the mountainous Brooks Range. Primary sources of wind-borne dust in rural communities are gravel infrastructure, exposed riverbeds, unpaved airfields, gravel pits and/or stockpiles, all of which can be found in Nuiqsut and the surrounding lands. Elevated concentrations of airborne dust have been witnessed when silt is lifted from the Colville River banks during periods of high winds. Wind measurements from 2019 at the Nuiqsut Airport meteorological station indicated highest winds occurred from the east northeast, from the direction of the main channel of the Colville River and gravel material sites across the river. Oil and gas gravel infrastructure, currently encompassing 165 acres at the ConocoPhillips Alaska Inc. Alpine development alone, and growing with the CPAI CD-5 development, is an additional source of airborne dust. Roadway and airport dust is also blown onto drying subsistence foods, which can cause them to be inedible. Approximately 7 percent of adults in Nuiqsut report having breathing problems, which is in line with the North Slope Borough as a whole.

Pedestrian safety is an issue that effects the entire community. Many unnecessary injuries and fatalities occur as a result of intoxication or inattentiveness of either the driver or the pedestrian. Residents are much more likely to walk through a community when they feel safe. Pedestrian safety measures include ensuring that roadway shoulders and rights-of-way are clear of obstructions such as dumpsters or large utility service barrels that would force residents to walk into the roadway, ample visibility for oncoming traffic so they can see pedestrians, and sufficient lighting for pedestrians. Pedestrian safety may also be increased by ensuring gravel roadway watering in town and on industry roads during the summer when gravel is exposed.

There are also health risks due to living in the Arctic environment. Extremely cold weather can put increased stress on a person’s cardiovascular system, causing blood vessels to constrict, shallow breathing, and slight thickening of the blood. These changes can cause chest pain in people with heart disease. The cold is also difficult for some asthma sufferers because it can cause the lungs’ air passages to constrict, making it difficult to breathe. It can also negatively affect those with skin conditions; the dry cold air can exacerbate existing issues. For everyone, colder weather can increase the likelihood of getting sick. The flu virus is more stable during cold and dry conditions and is able to stay in the air longer than in warmer conditions. There are also health benefits to being in a cold environment. Studies indicate that exercising in the cold burns more calories. The cold can also treat some pain and inflammation issues, such as rheumatism and fibromyalgia.

between State, local, and tribal entities. In 2015, a North Slope Borough Local All-Hazard Mitigation Plan was updated to include the risk assessments for all North Slope communities into one document. The plan identifies hazards specific to Nuiqsut, including erosion, snowmelt flooding, severe storms, and subsidence as major issues. The plan also considers critical facility vulnerabilities, potential economic losses, management tools, and financial resources. Natural events would affect all segments of the community, including individuals, businesses and public services. The goals of the All-Hazards Mitigation Plan are to be aware of the potential hazards reduce their impacts.

The NSB is in the process of developing its first Comprehensive Emergency Management Plan (CEMP). A CEMP addresses the natural and man-caused hazards that could threaten a region. It also describes the system that will be used to prevent, prepare for, respond to, and recover from an emergency or disaster. It also identifies and assigns specific areas of responsibility for coordinating resources to support the response to an emergency or disaster.

The community of Nuiqsut should have input during the development of the CEMP. Developing emergency response and hazard mitigation planning by and for the community in parallel with the development of the CEMP would ensure that the community is well-prepared in the event of an emergency.

The Coronavirus Disease 2019, or COVID-19, is a respiratory illness that can spread from person to person. While there are many types of human coronaviruses, including some that commonly cause mild upper-respiratory tract illnesses, COVID-19 is a new disease that has not been previously recorded in humans. The spread of COVID-19 has led to travel restrictions, delayed deliveries, and economic impacts to the community of Nuiqsut. The only airline that served Nuiqsut, Ravn Alaska, declared bankruptcy in April 2020 after a 90 percent drop in revenue due to the pandemic. Wright Air has filled the void left by Ravn, but the change has revealed vulnerabilities to North Slope communities relying on one air carrier to provide travel in and out and deliver the majority of goods. A vulnerability assessment and plan should be developed to ensure that Nuiqsut is prepared for disruptions to travel in and out of the community in the future.

9.3. Education

Nuiqsut Trapper School is operated by the North Slope Borough School District and provides education for students from pre-school through 12th grade. NSBSD also provides a number of services, including:

- Bus service for students;
- An early childhood education program for three- and four-year old children that operates five hours each weekday;
- Iñupiaq classes from the early childhood education level through eighth grade that is also open to students in other grade levels; and
- A culture camp each fall.

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The school district is governed by the North Slope Borough School District Board of Education. The Board has seven seats: four members representing Utqiagvik; one member in Wainwright representing Wainwright and Atqasuk; one member in Kaktovik representing Kaktovik, Anaktuvuk Pass, and Nuiqsut; and one member in Point Hope representing Point Hope and Point Lay. There is not a school board representative from Nuiqsut. The community has expressed concern that they do not feel that their school and the students in Nuiqsut are given adequate representation and would like their own seat on the School Board.

### Enrollment

The 2020/2021 school year (SY), the most recent year that data is available, had an enrollment of 156 students. The current student enrollment is just eight students higher than it was over twenty years ago, during the 1999 – 2000 SY. The year with the highest student enrollment over the last twenty years was during the 2001 – 2002 SY, when 162 students were enrolled at Nuiqsut Trapper School. The lowest student enrollment period was between 2006 – 2007 SY and the 2014 – 2015 SY, when there were between 68 to 96 students. Figure 12 illustrates the Nuiqsut Trapper School enrollment. Often school enrollment increases or decreases with the population, providing insight into future educational resource needs and the size and make-up of the future workforce. Although the population has fewer reliable data points, it appears as though the community population did not decline and rebound in the way that the student population did during the late 2000s and early 2010s.

![Figure 12: Nuiqsut Tapper School Enrollment, 1999-2021](Photo courtesy of Kuukpik Corporation)
During the 2019 – 2020 school year, the total spending per student was $42,692 from both state, local funds, and federal funds.\textsuperscript{375}

**Educational Attainment.** The percent of residents that have earned a high school diploma as the highest level of educational attainment has increased from 38 – 42 percent of the population to over 50 percent in both 2015 and 2019. The percent of Nuiqsut residents that have sought additional education beyond high school has remained fairly constant over the 16-year period shown in Table 22. In 2003, 12 percent of residents had some training or formal education beyond high school; in 2010 the percent had increased slightly to 13 percent, then decreasing to 9 percent in 2015. However, 2019 witnessed a little rebound of residents that have sought higher education, increasing to 14 percent.

Residents are concerned about both the high school dropout rate and the need for Drug Abuse Resistance Education (D.A.R.E) officers to combat drug and alcohol use by students.\textsuperscript{376}

### Table 22: Educational Attainment, 2003 – 2019

<table>
<thead>
<tr>
<th>Individual Highest Level of Education</th>
<th>2003</th>
<th>2010</th>
<th>2015</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Has not started school</td>
<td>32</td>
<td>40 %</td>
<td>2</td>
<td>2.3 %</td>
</tr>
<tr>
<td>Elementary school</td>
<td>0</td>
<td>0 %</td>
<td>5</td>
<td>5.8 %</td>
</tr>
<tr>
<td>Middle school</td>
<td>0</td>
<td>0 %</td>
<td>9</td>
<td>10.5 %</td>
</tr>
<tr>
<td>High school</td>
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<td>0 %</td>
<td>2</td>
<td>2.3 %</td>
</tr>
<tr>
<td>Did not finish high school</td>
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<td>0 %</td>
<td>12</td>
<td>14.0 %</td>
</tr>
<tr>
<td>High school diploma</td>
<td>31</td>
<td>38.8 %</td>
<td>36</td>
<td>41.9 %</td>
</tr>
<tr>
<td>GED</td>
<td>7</td>
<td>8.8 %</td>
<td>9</td>
<td>10.5 %</td>
</tr>
<tr>
<td>Vocational/tech graduate</td>
<td>2</td>
<td>2.5 %</td>
<td>2</td>
<td>2.3 %</td>
</tr>
<tr>
<td>Some college</td>
<td>7</td>
<td>8.8 %</td>
<td>7</td>
<td>8.1 %</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>1</td>
<td>1.3 %</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>0</td>
<td>0 %</td>
<td>1</td>
<td>1.2 %</td>
</tr>
<tr>
<td>Professional degree</td>
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<td>0 %</td>
<td>1</td>
<td>1.2 %</td>
</tr>
<tr>
<td>Other</td>
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<td>0 %</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100 %</td>
<td>86</td>
<td>100 %</td>
</tr>
</tbody>
</table>


School Facility. Trapper School is located at 3310 Third Avenue. It consists of the main school building (28,465 square feet), warm storage (3,040 square feet), vocational building (4,400 square feet), and gymnasium (15,760 square feet). All facilities were constructed 1980 with renovations to the gymnasium in 1998 and to both the school and gymnasium in 2011. The 2011 school building renovations included repairing a settlement issue along the east wall along the pool area against the cafeteria and kitchen. Floors were replaced in much of the area; additional work included refinishing and repainting the walls, and replacing ceiling panels, exterior doors, and windows. A major renovation to the pool room included repairing walls and ceiling from moisture penetration and damaged insulation that required the installation of a new moisture barrier as well as replacing the pool itself.  

There are 14 classrooms, 12 of which are used as traditional classrooms with a teacher and students. One of the remaining classrooms is in the process of being converted to a science, technology, engineering, and mathematics (STEM) lab where all teachers, especially those teaching the elementary grades, can take students to conduct experiments and other activities. The last classroom is used as the Positive Behavior Intervention and Support (PBIS) room which allows the school to have a positive reward place for kids; a rewards store shares this space as well.

With the exception of the principal’s office, there is one additional office space used for Special Education and other small administrative functions.

School staff have expressed need for additional services and facilities to improve the educational experience they can provide to Nuiqsut’s youth, including additional Career Technical Education (CTE) space, a permanent office for a school counselor, shared indoor space for supplies, additional indoor kitchen freezers, and more electrical plug-ins along the exterior of the building for car heaters.

There is currently a shop, but it is not large enough to work on vehicles or to teach small engine repair. More space for welding is also needed. An indoor playground at the school would provide a much-needed recreation space for the community and students. This would also help to alleviate scheduling issues with P.E. classes and recess.

As the student population in Nuiqsut grows, classrooms that are being used for other programs may have to be converted back to classrooms. A school facility space needs assessment would better enable the school district and principal in planning for the future needs of students and the community.

Teacher Housing. There is one five-plex and one triplex dedicated to teacher housing in Nuiqsut. Community residents report that both the school and teacher housing are in disrepair. Given overcrowding in the community, residents hope that the school district will construct new teacher housing and return the housing that is being used for teachers back to the community.

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Additional Educational Opportunities. Given their close proximity to Alpine, Trapper School students can become involved in a unique program to learn about employment at the oil field. After graduation, residents can participate in internships designed to provide training and experience needed for employment. However, Alpine is designed to accommodate rotational workers; the work schedule and living conditions do not easily accommodate workers from Nuiqsut that wish to return home every evening. Residents have also stated that industry is unable or unwilling to be flexible with subsistence activities that may take them away from work.380

Ilisaġvik College maintains a satellite computer station at the NSB Village Coordinator’s Office that offers a variety of online courses for community residents. While residents are able to take Ilisaġvik classes free of charge, residents seek a facility to train residents for local jobs, including carpenters and plumbers. Temporary jobs that allow residents to gain experience that then lead to permanent jobs are desired.381

381 Ibid
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Chapter Ten

Photo courtesy of George Sielak
The land of the North Slope has been used by the Iñupiaq since time immemorial. It is only relatively recently that the residents here have been subject to the western concept of land ownership. While the village adheres to this new concept of land ownership, when utilizing the land for subsistence hunting, the land is not owned, it is shared.

The surrounding natural environment is one of the Nuiqsut’s greatest assets and highly valued by its residents. Natural resource extraction within the North Slope Borough is already the primary economic contributor to the region and to Nuiqsut. Large portions of land surrounding Nuiqsut are owned and managed by the federal and State of Alaska. The relatively small amount of privately held land in the area is owned by individual landowners or by Kuukpik Corporation and is primarily concentrated within and immediately surrounding the community. This land use and land management chapter provides information on the multiple layers of land use and ownership in the community and the surrounding area as well as a discussion on local and regional issues concerning land management and future growth of the community.

10.1. Native Restricted Land

There are two types of protected (restricted) land for Native Alaskans: Native allotments and restricted townsite lots. Restricted land is inalienable; the property owner cannot lease, sell, or convey the land, or any inherited interest in the land, without first obtaining approval from the BIA. Generally speaking, restricted land is also not subject to state or local laws, including
taxation and land use regulations, such as zoning. Native restricted land will remain tax-exempt unless changed by the U.S. Congress or the restrictions are removed with the expressed approval by the BIA.  

Generally, restricted lots were distributed via two federal statutes: the Alaska Native Allotment Act of 1906 and the 1926 Alaska Native Townsite Act. The Alaska Native Allotment Act of 1906 granted individual Alaska Natives ownership of up to 160 acres of vacant, non-mineral and unappropriated land if they could demonstrate past use. The majority of Native allotments are near villages and along rivers, streams, lakes, and coastal waters. There are 27 Native allotments and 42 camps and cabins within 25 miles of Nuiqsut. Native allotments and camps and cabins in the vicinity of Nuiqsut are shown in Map 12. Residents have expressed concern about industry development so close to Native allotments; its noise and activity level can alter the caribou migration through the area and affect hunters’ ability for a successful hunt.

In 1971, the Alaska Native Claims Settlement Act repealed the authority to grant Native allotments, with the exception of applications that had already been submitted. Native allotment land is still being conveyed by the BLM; over 16,000 parcels have been conveyed to Alaska Natives and there are approximately 251 remaining parcels to be processed. The Alaska Native Vietnam Veterans Allotment Act of 1998 authorized BLM to provide a new 18-month filing period to Alaska Native Vietnam-era veterans who were unable to file because of active-duty service before the repeal of the Native Allotment Act of 1906. The Alaska Native Vietnam Era Veterans Land Allotment Section of the 1998 Dingell Act allows any Alaska Native Vietnam veteran who served between August 5, 1964 and December 31, 1971 and did not already receive a Native allotment to apply for up to 160 acres of land. This Act removed the requirement related to use and occupancy. The heirs of deceased eligible Alaska Natives can also apply. Lands available for selection will be identified prior to accepting applications; there will be a five-year application period.

The 1926 Alaska Native Townsite Act was passed by the U.S. Congress for the purpose of conveying public lands to Native Alaskans for homes within villages. All townsite acts were repealed by the passage of the Federal Land Use Policy and Management Act (FLPMA) in 1976 but lots that were already designed as Native restricted under the Townsite Act did not lose their status. Restricted deeds are managed for Native landowners by the federal government. The owners’ ability to sell or transfer the property is limited, but since federal law limits state and municipal jurisdiction over land uses on property held in trust by the U.S. government, restricted lots are not subject to NSB land use regulations, nor are they subject to property tax or foreclosure. Nuiqsut is the only North Slope community that is not an Alaska Native townsite so there are no restricted lots within the village boundaries. However, a landmark 2014 rule by

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387 Ibid
the U.S. Department of Interior (USDOI) allows federally recognized Alaska tribes, such as the Native Village of Nuiqsut, to place land they own into trust, an option that had previously only been allowed for Tribal nations in the continental U.S. Tribal lands that are placed into trust makes them eligible for federal programs that further Tribal sovereignty and economic development related to energy, infrastructure, health, and housing programs. Perhaps more importantly, it also clarifies and affirms tribal sovereign powers over the land.\textsuperscript{389} NSB zoning and land use regulations as well as taxation do not apply to lands held in trust by the federal government.

Just as lands can be placed into trust, Native restricted land can become unrestricted. Once the restricted status is removed, the land can be taxed or sold without BIA approval or oversight. For example, if a restricted property is sold or willed to a non-Native, it will be conveyed to that person in an unrestricted status. Natives that chose to will a restricted property to a non-Native can opt to leave it as a life estate. The non-Native heir would use the property during his or her lifetime and when he/she passes away, the property is transferred to the second choice named in the owner’s will, thus potentially returning it to restricted status.\textsuperscript{390}

There are several land use concerns with Native restricted property that are worthy of consideration if the Native Village of Nuiqsut sought placing lands into trust. If a structure on a restricted property becomes a safety hazard for the community, local land use regulations cannot require that property owners mitigate the property to remove the risk. Another issue is fractionalization. Because some owners of restricted properties do not always have wills that specify beneficiaries, heirs in common inherit the land, often for several generations. Some property may have multiple owners and with each passing generation, the portions of property interest become smaller and smaller, causing the property to become fractionalized. Even without probate issues, it may be difficult to reach a consensus amongst multiple property owners, a status which often jeopardizes the usefulness of a property.

\textbf{10.2. Alaska Native Claims Settlement Act}

The Alaska Native Claims Settlement Act was passed in 1971. This Act was intended to settle outstanding Native Alaskan land claims and establish clear title to Alaska’s land and resources. ANCSA recognized the rights of Alaska Natives to a small portion of the lands they have traditionally occupied for thousands of years through land distribution to regional and village Native corporations and provided $962.5 million for land lost in the settlement agreement. Generally, Native village corporations received title to the surface estate in and around villages while regional corporations selected lands from within the larger regional ANCSA boundaries. Alaska Native regional corporations received title to the subsurface estate of much of the land they selected. Consequently, most Alaska Native regional corporations balanced their land selections between areas that had significant cultural or subsistence value and areas that had potential economic value for natural resource development.\textsuperscript{391}


Kuukpik Corporation. Section 12(a) of ANCSA entitles village corporations to select all of the township in which any part of the village is located, plus an area that will make the total selection equal to the acreage to which the village is entitled. The 12(b) entitlement is land distribution from the regional corporation to village corporations after considering historic use, subsistence needs, and population.\(^{392}\) Under ANCSA, nearly 400,000 acres of land in the Colville Delta were set aside as a withdrawal area from which Kuukpik Corporation could select the 115,200 acres to which it was entitled. Kuukpik Corporation was also entitled to 30,933.81 acres of land to be reallocated from ASRC. In total, Kuukpik Corporation has selected and received title or interim conveyance of approximately 144,000 acres of surface estate in and around the community through the ANCSA Section 12(a) and 12(b) conveyances, more than 63,000 acres of which is within the boundaries of the National Petroleum Reserve – Alaska.\(^{393}\) The remaining Kuukpik Corporation entitlement is 1,953.13 acres, which have not yet been conveyed.\(^{394}\)

Under ANCSA Section 14(c)(3), a village corporation must convey to a municipal corporation (city), or the state in trust (where an incorporated city does not exist, such as Point Lay), lands identified for present and future community needs, such as community expansion, rights-of-way, and other community needs.\(^{395}\)\(^{396}\) Because the land is transferred from the village corporation, the city receives only the surface estate. The most important factor in determining the amount of land to be transferred is the agreement of both the city and the village corporation on which land is to be conveyed and for what purpose(s). The 14(c) process is not complete for Nuiqsut; Kuukpik Corporation has not reconveyed title to any of its lands pursuant to 14(c).\(^{397}\)

Arctic Slope Regional Corporation. ASRC owns nearly five million acres of land on Alaska’s North Slope in areas that have either known resources or are highly prospective for oil, gas, coal, and base metal sulfides making it one of the state’s largest private landowners. ASRC has received the majority of the lands it is entitled to under the provisions of the ANCSA.

17(b) Easements. ANCSA also established 17(b) easements, which are easements reserved to the U.S. and located between communities, airports, docks, and marine coastline. They take the form of 60-foot-wide roads, 25- and 50-foot trails, and one-acre sites for short-term uses. There are not 17(b) easements across public lands. The purpose of most 17(b) easements is to allow the public to cross private property to reach public lands and major waterways. Hunting, fishing, or other recreational activities are not allowed on 17(b) easements because the land is privately owned. There are a number of 17(b) easement trails near Nuiqsut. Map 11 in Chapter 7 illustrates a few segments of 17(b) easements sites in the vicinity of Nuiqsut.

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10.3. Private Ownership

The small amount of privately-owned land in the Nuiqsut area is primarily concentrated within and immediately surrounding the community. There are approximately 38 privately owned residential lots within Nuiqsut. The 144,180.87 acres of Kuukpik Corporation land is also privately owned.

10.4. North Slope Borough Ownership

The NSB owns land in Nuiqsut associated with its public works facilities. These facilities include the airport, bulk fuel tank farm, landfill, sewage lagoon, wastewater treatment plant (WWTP), water treatment facility, power plant, shop facilities, the school and teacher housing, health clinic, fire station, power generation, water and wastewater systems, public works buildings, and several residential lots.

10.5. State of Alaska Ownership

The State of Alaska owns lands and waters within the NSB, including submerged lands. The federal Submerged Lands Act of 1953 recognizes title by states to the submerged, navigable lands within its boundaries at the time of statehood. These lands include onshore navigable waterways and offshore marine waters extending three nautical miles seaward from the coast.

The State of Alaska also owns most of the area between the NPR-A and ANWR, including the Prudhoe Bay region. The Alaska Department of Natural Resources (DNR) recently completed the North Slope Area Plan in effort to establish a balanced combination of land for public and private uses for over 11 million acres. The Planning Area is primarily the along the Dalton Corridor and in Prudhoe Bay, the Brooks Range foothills, Chandalar, and the Arctic Tidelands from Icy Cape to the Canadian border and forms the basis for the management of land and waters that are state-owned or state-selected. DNR’s goal is to effectively manager state resources while considering the sustained yield of renewable resources while also balancing environmental concerns and public access.

There are six planning regions identified in the plan. While the community itself lies just outside all of the planning regions, the Nuiqsut Area of Influence is affected by policies and decisions made for every planning region with the exception of the Chandalar region near Atigun Pass. Nuiqsut is immediately adjacent to the Arctic Coast Planning Area; slightly farther away is the Central Slope Planning Area.

The Arctic Coast Region is approximately one million acres and is situated between the eastern boundary of NPR-A along the Colville River and the western boundary of ANWR on the Canning River, encompassing industrial areas of Deadhorse, Prudhoe Bay, Kuparuk, and Alpine. There are no major, state-owned or maintained roads within these regions. Ice and snow roads are utilized in the winter months to support oil and gas exploration and development. Just south of the Arctic Coast Planning Region is the Central Slope Planning Area.
Slope Planning Region which spans the Dalton Highway to the ANWR boundary.

10.6. Federal Ownership

The federal government owns over half of the land within the North Slope Borough. Federal land in the North Slope Borough include: ANWR, NPR-A, portions of the Gates of the Arctic National Park (GARR), the Noatak National Preserve, the Alaska Maritime National Wildlife Refuge, federal waters of the Outer Continental Shelf (OCS), and DEW Line sites scattered across the coastline, among others. Most federal land in the vicinity of Nuiqsut lies within the NPR-A.

U.S. Air Force. The Distant Early Warning Line, also known as the DEW Line or Early Warning Line, is a system of radar stations along the Alaska’s northern coast and Aleutian Islands as well as the northern Arctic region of Canada, Faroe Islands, Greenland, and Iceland. It was set up in early 1950s to detect incoming Soviet bombers during the Cold War and provide early warning for a land-based invasion. Now, they are abandoned or minimally staffed. The DEW Line stations closest to Nuiqsut are at Oliktok and Point Lonely, followed by the Kogru and Lonely stations. The Oliktok and Lonely stations still have structures; the Kogru station is now just a landing strip.

National Petroleum Reserve – Alaska. At approximately 23 million acres, the NPR-A is the largest area of federally managed land in the United States, overseen by the Bureau of Land Management (BLM). Its boundary extends eastward from Icy Cape near Point Lay, along the Chukchi Sea coast, and to the highest water mark on the western bank of the Colville River. The NPR-A makes up more than a third of the North Slope Borough. The western, northern, and southern portion of the Nuiqsut Area of Influence lies within its boundaries. Nuiqsut itself is located at the eastern edge of the NPR-A, shown on Map 3.

The reserve’s natural resources and scientific value are immense, including two caribou herds, many raptors, millions of migratory birds, tens of thousands of molting geese, large concentrations of beluga whales and other marine mammals, vast wilderness landscapes, wild rivers, and rich geological, scientific, archaeological, and paleontological sites. It is also important for subsistence activities for the people of the North Slope.

President Harding, aware of the land’s potential petroleum value, issued Executive Order No. 3797-A in 1923 creating the Naval Petroleum Reserve No. 4, also known as Pet-4. In 1976, the Naval Petroleum Reserves Production Act (NPRPA) transferred management of the reserve from the U.S. Navy to the BLM within the U.S. Department of the Interior and renamed it the NPR-A. Oil and gas leasing in the NPR-A is authorized under the NPRPA and the Department of Interior Appropriations Act of 1976 (42 U.S.C.6501 et seq.), as amended including The Department of the Interior Appropriations Act of 1981 (94 Stat. 2964). Act. The BLM holds annual oil and gas lease sales for the NPR-A. In 2019, the NPR-A

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402 Regulations for NPR-A oil and gas leasing, exploration and operations are found in 43 Code of Federal Regulations (CFR), Parts 3130, 3150, 3160, respectively. The Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.) and related regulations do not apply to leasing in the NPR-A.
generated more than $56 million in oil and gas lease revenue.403

The BLM manages NPR-A lands and resources through the Integrated Activity Plan (IAP) accompanied by an environmental impact statement (EIS). The June 2020 IAP/EIS and the associated December 31, 2020 Record of Decision (ROD) provides the current management direction for the NPR-A. Of the five alternatives considered, the selected alternative makes the most land open to leasing (approximately 18.7 million acres, or 82 percent of the NPR-A’s subsurface estate). The only areas completely closed to mineral leasing are in the western portion of the NPR-A where there is low oil and gas potential. Under the selected alternative, the area closed to new infrastructure would decrease to approximately 4.3 million acres from the 2013 IAP/EIS. This represents an increase of land open to oil and gas leasing by about seven million acres. For Nuiqsut, the percentage of use areas open to oil and gas leasing has increased forty percent.404

Infrastructure prohibitions in the NPR-A do not apply in the following cases: subsistence camps and cabins, community infrastructure, single season ice road infrastructure, single season exploratory wells, science and public safety infrastructure, and facility renovation or replacement at existing gravel pads.

There were five special areas within the NPR-A: Colville River, Kasegaluk Lagoon, Peard Bay, Teshekpuk Lake, and Utukok River Uplands. Details on these special areas are provided in Table 23 and shown in Map 14.

The 2020 IAP does not change the management of the Peard Bay and Kasegaluk Lagoon Special Areas. These areas are largely unavailable for leasing.405 Sand and gravel mining are authorized through the normal review process and new infrastructure may be allowed to support offshore oil and gas development or community needs.406

There are changes to portions of the Utukok River Uplands Special Area under the 2020 IAP. This area has a core that would be unavailable for leasing and new infrastructure. Two allowable uses would facilitate essential road and pipeline crossings: a corridor where leasing and infrastructure is allowed subject to a timing limitation and a caribou migration corridor along the southern boundary that is also available for leasing subject to no surface occupancy.

Under the 2020 ROD, the Colville River Special Area raptor protections now apply to the entire NPR-A. This special area is effectively eliminated because its protections are no longer specific to the Colville River area.407

405 Ibid
406 Ibid
407 Ibid
Any exploration within the Utukok River, the Teshekpuk Lake areas, and other areas designated by the Secretary of the Interior containing any significant subsistence, recreational, fish and wildlife, or historical or scenic value, shall be conducted in a manner which will assure the maximum protection of such surface values to the extent consistent with the requirements of this Act for the exploration of the reserve.

Naval Petroleum Production Act of 1976

The Teshekpuk Lake Special Area is one of the most important wetlands in the Arctic – it is a unique, wildlife-rich wetland wilderness supporting tens of thousands of migrating bird populations from all seven continents, the Teshekpuk Lake caribou herd, and other wildlife. Millions of acres in the southwestern portion also provide important calving locations and migration routes for caribou herds.408 It is one of the most important wetland complexes in the circumpolar Arctic. The Teshekpuk Lake area is also used extensively for subsistence activities for the people of Nuiqsut and other North Slope communities. Consequently, the area around Teshekpuk Lake has been spared from oil and gas development for more than 40 years. Recent discoveries of oil fields in the Bear Tooth and Nanushuk deposits in the Teshekpuk Lake area have made it vulnerable to development. Also, in 2016 Caelus Energy, announced that it had made an enormous oil discovery in Smith Bay, in state waters just one mile offshore of the NPR-A and the Teshekpuk Lake Special Area. Tapping into that discovery would require either a pipeline under the Chukchi Sea or a pipeline traversing the North Slope close to or through Qupałuk, the northeast corner of Teshekpuk Lake that attracts high numbers of birds to near-pristine tundra, wetland, and open water habitat.409, 410

The 2013 ROD included safeguards to protect birds and wildlife as well as riverine, lake, and coastal fish habitat; bays, inlets, and coastlines important for marine mammals; and coastal waters and river routes that North Slope residents rely on for harvesting subsistence resources.411, 412

The 2020 ROD represents a significant departure from the 2013 NPR-A ROD for the Teshekpuk Lake Special Area. The selected alternative stipulates that nearly all of the Teshekpuk Lake Special Area is available for leasing except for 132,000 acres, which will not be available for leasing ten years when a deferral established for the area expires. The selected alternative indicates that impacts on caribou calving habitat and important bird habitat will be partially mitigated through no surface occupancy stipulations and timing limitations. No pipeline corridors would be needed because more areas would be open to new infrastructure, including where pipelines may be needed to transport oil.

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and gas from offshore leases. The IAP selected alternative seeks to assuage concerns of North Slope residents by including leasing deferral areas, setbacks along important subsistence rivers, and flexibility for potential community infrastructure projects.413

Table 23: 2010 Major Subsistence Resource Hunting Season Harvests

<table>
<thead>
<tr>
<th>Land Management Plan</th>
<th>Jurisdiction/Agency</th>
<th>Acreage</th>
<th>Zone of Influence</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPR-A IAP</td>
<td>BLM</td>
<td>23,599,999 acres</td>
<td>North Slope of Alaska, west of the Colville River through to the Chukchi Sea coast.</td>
<td>Originally designated for ensuring U.S. oil reserves, with provisions applying to exploration/production activities and protection of subsistence activities.</td>
</tr>
<tr>
<td>NPR-A IAP</td>
<td>BLM</td>
<td>7.06 million acres</td>
<td>The foothills of the Brooks Range mountains, tundra and coastal wetlands.</td>
<td>To protect habitat used by the Western Arctic Caribou Herd for calving and insect relief.</td>
</tr>
<tr>
<td>NPR-A IAP</td>
<td>BLM</td>
<td>107,218 acres</td>
<td>Along the northern coast of Alaska.</td>
<td>Established in the 2013 IAP. Designated area restricts oil and gas activities within the designated boundaries, for habitat protection: haul outs and near shore waters for marine mammals, high use staging/migration for shore and water birds.</td>
</tr>
<tr>
<td>NPR-A IAP</td>
<td>BLM</td>
<td>97,408 acres. Spanning 125 miles along Chukchi Sea coast</td>
<td>Encompassed within the NPR-A.</td>
<td>Designated area restricts oil and gas activities within the special area boundaries due to the area’s importance for marine mammal habitat and extensive lagoons and barrier islands.</td>
</tr>
<tr>
<td>NPR-A IAP</td>
<td>BLM</td>
<td>3.65 million acres</td>
<td>Inclusive of Teshekpuk Lake, north to the Beaufort Sea and Smith and Harrison Bay. Area extends southeast and southwest of Teshekpuk Lake. Encompassed within the NPR-A.</td>
<td>Set aside for special management because of its unique environmental value. Designated area restricts oil and gas activities within the designated boundaries.</td>
</tr>
</tbody>
</table>

415 Ibid
10.7. Zoning and Land Use Regulations

A major component of local planning is zoning, the division of areas into land use districts and the regulation of lands within those districts. Zones are designed to accommodate current and potential uses on both public and private land. Detailed regulations guide how each district can be used. The NSB is charged by the State of Alaska with administering platting and zoning on behalf of its residents. Through Title 19 the borough exercises its zoning and land use authority. All areas within the borough have been assigned to a zoning district, as depicted on the official zoning map. In addition to several districts that apply only to Utqiagvik, there are five zoning districts: Village, Conservation, Scientific Research, Resource Development, and Transportation Corridor. The Assembly must approve any zoning changes after review by the NSB Planning Commission.

Chapter 19.40 describes the purpose of each zoning district and which activities require an administrative approval, a development permit, or a conditional development. In addition to policies related to individual districts, Title 19 requires projects to be evaluated by additional policies, including Economic Development Policies (§ 19.70.030), Offshore Development Policies (§ 19.70.040), Coastal Management Policies (§19.70.050), and Transportation Corridor Policies (§19.70.050). The NSB’s Coastal Management Policies remain in effect under the NSBMC even though the statewide program has ended. Provisions in Title 19 address implementation enforcement related to traditional land uses as well. There may be additional state and federal requirements for proposed projects. NSB land use regulations do not apply to Native restricted properties.

A consideration at the North Slope Borough Planning & Community Services Department is to create village zoning commissions, similar to the Utqiagvik Zoning Commission, whose purpose is to “implement the Comprehensive Development Plan for Utqiagvik and aid in fire prevention and the delivery of emergency medical services.” If the community is interested in implementing such a commission, there would need to be significant coordination between the community leadership and the North Slope Borough.

Village Zoning District (§19.40.060). The entirety of the city of Nuiqsut is contained within the Village District, with the exception of landfill, a portion of which is outside the city boundaries and the Village Zoning District; according to the NSB Official Resource Development District Zoning Map, a portion of the road to the landfill is within the CD-5 District and a small portion of the community on the eastern side, including the road that heads east near the Kuukpik Maintenance Shop and the northeastern portion of the airport tract are within Alpine District. A small portion of the eastern side of the village is within Alpine. The surrounding area outside of the municipal boundaries is within the Conservation District. Table 24 describes uses that are allowed in these two districts.

The Village District is described in the NSBMC Title 19 (§ 19.40.060). The intent of the Village District is to accommodate uses which:

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416 Activities listed as a conditional development require approval by the NSB Planning Commission.
419 The Village District is described in the NSB Zoning Regulations Section 19.40.060, and the Conservation District is described in Section 19.40.70.
Reinforce traditional values and lifestyles;
Are in accord with the North Slope Borough Comprehensive Plan, Capital Improvements Program and Comprehensive Development Plan for the village; and
Are in accord with the desires of the residents of the village.

The land uses that are permitted in the Village District include:

For Administrative Approval. The following can be administratively approved by the borough’s Land Administrator without public notice:
1. Placement of fill in a wetland in accordance with the Army Corps of Engineers general permit.

For a Development Permit. The following may be permitted upon approval by the Land Administrator after public review:
1. Public facilities;
2. Commercial development; and
3. Any use or structure within the watershed that provides the community’s drinking water.

For a Conditional Use Permit. The following are conditional and may be established upon approval of the NSB Planning Commission:
1. Resource extraction; and
2. Any use “elevated” by the Land Administrator for Commission review by the NSB Land Administrator, pursuant to § 19.50.020.

Also, within Title 19 (§19.70.020) are Village Policies that are intended to guide the approval of development and uses in the Village District:
1. Development and uses will not be allowed which grossly violate guidelines on the rate or amount of growth adopted by a village as a part of its Comprehensive Development Plan;
2. Development and uses in a village are required to be consistent with the relevant adopted village Comprehensive Development Plan;
3. Development and uses are encouraged which provide or materially contribute to lower-cost fuel or power; and
4. Development and uses are encouraged which provide local employment in the villages.

Conservation Zoning District (§19.40.070). This district generally encompasses the undeveloped areas of the borough and is intended to conserve the natural ecosystem for all the various plants and animals upon which borough residents depend for subsistence. Subject to this overall intent, land within this district be used for limited resource exploration and development. Major resource development project areas must be rezoned to the Resource Development District (RDD).

Land uses permitted within a Conservation District include:
For Administrative Approval. The following can be administratively approved by the NSB Land Administrator without public notice:

1. Temporary use (including fuel storage) of existing gravel airstrips in support of pre-exploration activities;
2. Archaeological surveys;
3. Tundra travel; and
4. Minor alterations to existing development.

For a Development Permit. The following may be permitted upon approval by the Land Administrator after public review:

1. Commercial recreation;
2. Ice roads and ice pads;
3. Exploration, prospecting or limited development in anticipation of resource extraction; and
4. Offshore development in compliance with the policies of § 19.70.040.

For a Conditional Permit. The following may be established upon approval of the Planning Commission:

1. All conditional and other development permit applications elevated by the Land Administrator under § 19.50.020.

Table 24: Uses Allowed in the Village and Conservation Districts by Permit Type

<table>
<thead>
<tr>
<th>Village District (§19.070.020)</th>
<th>Administrative Approval</th>
<th>Development Permit</th>
<th>Conditional Use Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement of fill in accordance an Army Corps of Engineers general permit.</td>
<td>Public facilities, commercial development and any use or structure within the watershed for the community’s drinking water.</td>
<td>Resource extraction and any projects elevated to the Planning Commission.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conservation District (§19.70.070)</th>
<th>Administrative Approval</th>
<th>Development Permit</th>
<th>Conditional Use Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Temporary use (including fuel storage) of existing gravel airstrips in support of pre-exploration activities 2. Archaeological surveys 3. Tundra travel 4. Minor alterations to existing development</td>
<td>1. Commercial recreation 2. Ice roads and ice pads 3. Exploration, prospecting or limited development in anticipation of resource extraction; and 4. Offshore development in compliance with the policies of §19.70.040</td>
<td>All development elevated by the Land Administrator under §19.50.020</td>
<td></td>
</tr>
</tbody>
</table>
10.8. Current Land Use

The Nuiqsut community was built using a grid system with the main thoroughfares of Nigliq, Pausanna, and Anaktuvuk streets running in a generally north-south orientation, as shown in Map 7: Community Facilities in Chapter 7. Typical residential lots range from nearly a quarter acre to nearly a half-acre in size. The subdivision lots between Pausanna Street and Taalak Street are approximately 100 by 80 feet while most other residential lots are larger, at about 100 by 100 feet. Each block has an unimproved 10-foot utility easement and streets have a 60-100-foot right-of-way.

Residential and commercial areas are mixed. Residences are interspersed with the Trapper School, water plant and water storage tanks, AC Value Store and other commercial and public uses. There is some clustering of North Slope Borough services along Nigliq and Pausanna streets between 1st and 2nd avenues; the NSB Fire Station, Health Clinic, itinerant housing, Public Safety Office, Coordinator’s Offices, and teacher housing are all located along these two streets. The Teen Center and Kisik Community Center are nearby.

A largely undeveloped residential subdivision located south of the center of the community and airport off Water Lake Road as it heads out of town and turns into Colville River Access Road. There are approximately 35 residential lots owned by Kuukpik Corporation; the remaining 68 lots are owned by Kuukpik Corporation shareholders, conveyed to them as part of the corporation’s shareholder home site program.\footnote{Nuiqsut Utilities Cooperation. 2022. Resolution No. 2022-04 Response to Nuiqsut Draft Comprehensive Plan Public Review. May 27, 2022.}

Identifying land by the type of use is an important foundation for current and long-range land use planning. Map 16 illustrates current land use. These land uses are not delineated in NSBMC Title 19 but are included here to distinguish certain areas within the community. General categories of current land uses are provided in Table 25.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Single-family and multi-unit housing</td>
</tr>
<tr>
<td>Commercial</td>
<td>Grocery stores, repair shops, hotels, bed &amp; breakfast establishments, fuel distribution centers, churches, bingo halls, recreation facilities, senior and youth centers, daycare centers and other public services</td>
</tr>
<tr>
<td>Industrial</td>
<td>Public facilities such as public works shops, water and sewage treatment plants, telecommunications facilities, warehouse and storage yards, the airport, cemetery, gravel pits, fuel tank farms, landfills, resource development areas, and similar uses</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>Residential uses and small-scale commercial uses that are compatible with residential areas, such as small grocery stores, day care facilities, post office yet exclude industrial and resource development uses</td>
</tr>
</tbody>
</table>
10.9. Future Land Use

There are sufficient number of parcels already available for future housing development, primarily in the subdivision south of the airport and also through infill within the community. Map 17 illustrates the areas for future housing development. There is also sufficient land within to accommodate increased infrastructure capacity as the community grows.

While much of this plan is focused on resident concerns and capital infrastructure and facility needs within the community, the land use surrounding the community has as large an effect on residents as what happens within the city boundaries. Much of the area immediately surrounding the community is already leased for oil and gas exploration and development, as shown in maps 19 through 24. The future of surrounding land uses is important to the residents; increasingly encroaching development affects many aspects of daily life. Access to subsistence areas as well as air quality and noise nuisances are all concerns of Nuiqsut residents that transcend political boundaries.

Chapter 11 examines the oil and gas industry and how its development has affected the community. The community can use its collective voice to try to alleviate some of the worst negative aspects of current and future nearby industrial development.
Nugusut Comprehensive Plan
2022 – 2042

CHARTER 10: LAND USE AND ZONING

Land Use Map 16

0 1,400 2,800 Feet

Data Source: North Slope Borough
Future Land Use
Map 17
10.10. Contaminated Sites and Hazardous Materials

Contaminated sites are defined by the Alaska Department of Environmental Conservation (ADEC) as “location[s] where hazardous substances, including petroleum products, have been improperly disposed.” An online database of these sites is maintained by the ADEC along with site designations by the Department for each site. A search of the database reveals 49 contaminated sites in surrounding areas, located from the DEW Line Station at Point Lonely to the BLM Legacy Wells near Umiat. There is only one contaminated site within the community: the NSB power plant. Each site falls into one of three categories assigned by the ADEC: Cleanup Complete, Cleanup Complete – Institutional Controls, and Open. Of these, 23 have been given a Cleanup Complete status by the ADEC and two a Cleanup Complete – Institutional Controls status. The remaining 24 are designated as Open, including the Nuiqsut power plant.

All associated sites are listed in Table 26: Contaminated Sites in the Nuiqsut Area. Some pertinent background and location information is also provided in the table. A geographic depiction, Map 18: Contaminated Sites, is provided as well. Greater in-depth information addressing these sites, including site status details, cleanup chronology logs, and other associated documentation are found on the ADEC Sites Program website.

Active Sites. There is currently one active site within the village of Nuiqsut. This spill occurred near the NSB Nuiqsut Power Plant. Petroleum contaminated soil was discovered in July 2012 with Diesel Range Organics (DRO) concentrations above designated levels. No other contaminants were detected above cleanup levels at that time. The release was identified when underground fuel piping between the NSB plant and the washeteria area in Nuiqsut was being installed. Some Gasoline Range Organics (GRO) and Residual Range Organics (RRO) contamination was further identified in 2014. Further characterization of the site is pending.

There are a number of contaminated sites (21), which are southwest of Nuiqsut, most of which are near the Umiat camp that is located roughly 70 miles southwest of Nuiqsut. The U.S. Navy performed exploratory drilling of the National Petroleum Reserve beginning in the early to mid-1940s and lasting until the early 1980s in the Umiat area. Because of this, there are a handful of exploratory oil drilling test wells scattered in and around the Umiat area referred to as BLM legacy wells. These sites tend to have DRO, GRO, and RRO contaminants along with some accompanying polychlorinated biphenyl (PCB) and lead contamination in the soil and groundwater. Their proximity to the Colville River poses some potential for concern. There is also a landfill and an airstrip with associated contamination in this area along with some other infrastructure.
In addition to these sites, there are two active sites upstream called BLM Legacy Well Gubik #1 and #2. In October of 2018, limited sampling was performed. Site 1 showed petroleum hydrocarbon contamination in drilling muds that were below clean-up levels, but lead contamination was found in the surface soil. Site 2 showed RRO and lead contamination in surface soil.

There is one active site, also a BLM Legacy Well, called the BLM Legacy Well Cape Halikett Drill Site. This site is about 50 miles northwest of Nuiqsut and was drilled in the mid-70s. Contamination here was classified as Total Petroleum Hydrocarbons (TPH). Much of the land for this site is underwater for parts of the year, making further delineation difficult.

As indicated in the Table 26, many sites are designated as Formerly Used Defense Sites (FUDS). The U.S. Army is the Department of Defense’s (DOD) lead agent for the FUDS Program. The U.S. Army Corps of Engineers executes the FUDS Program on behalf of the U.S. Army and DOD.

Cleanup Complete – Institutional Controls Sites. There is a very large cluster of these sites (50+) situated just east of Nuiqsut, located in the nearby oilfields. Only the two sites closest in proximity to Nuiqsut are included in this section. Many were former operational drill sites and pads of oil and gas companies.

One site, the ConocoPhillips West Sak 18, is located on a former drill pad and has DRO contamination. ConocoPhillips is the lease holder and the Department of Natural Resources is the landowner. Presently, all identified contaminants were below levels which posed risk to human health. The site may be subject to additional cleanup requirements if further contamination is discovered.

The other site, ConocoPhillips Itkillik River Unit #1 is a former drill pad. It had one or more diesel spills during the 1970s. The spills have impacted the tundra immediately adjacent to the site. Analysis for DRO, polynuclear aromatic hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, and xylenes (BTEX) were performed. ConocoPhillips Alaska has assumed responsibility for this site although it was utilized by British Petroleum (BP) as well.

Cleanup Complete Sites. There are 15 sites classified under this designation clustered on the coastline of the Beaufort Sea, a few miles west of Point Lonely and 70 miles northwest of Nuiqsut. They are generally referred to as “Camp Lonely” and represent a smattering of infrastructure such as a pump house, vehicle maintenance shop, incinerator building, landfills, pads, and drum storage all associated with the Point Lonely DEW Line site. Many of these sites had BTEX, PAH, and GRO, DRO, and RRO contamination but have been remediated. About 20 miles southeast are two former landfill sites, now remediated, and a former legacy well.
site on the eastern shore of Teshekpuk Lake, now cleaned as well.

**Informational Sites.** The U.S. Navy and the United States Geological Survey (USGS) drilled 136 well sites between 1944 and 1981 within the NPR-A. A number of these well locations are located within the Nuiqsut area, with the majority being active.437 The ADEC instated an informational site regarding this area.

### Table 26: Contaminated Sites in the Nuiqsut Area

<table>
<thead>
<tr>
<th>ADEC HAZ. ID</th>
<th>SITE NAME</th>
<th>ADDRESS</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>770</td>
<td>Kogru River/FUDS Main Cantonment Area</td>
<td>West Side of Harrison Bay</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>773</td>
<td>Umiat Former Air Force Station</td>
<td>North Bank Colville River</td>
<td>Open</td>
</tr>
<tr>
<td>777</td>
<td>Umiat Airstrip Complex (FUDS)</td>
<td>North Bank Colville River</td>
<td>Open</td>
</tr>
<tr>
<td>778</td>
<td>Umiat Main Gravel Pad (FUDS)</td>
<td>South of the Airstrip</td>
<td>Open</td>
</tr>
<tr>
<td>781</td>
<td>Umiat Landfill and Seasonal Slough</td>
<td>Unknown</td>
<td>Open</td>
</tr>
<tr>
<td>2362</td>
<td>ConocoPhillips Itkillik River Unit #1 (ARCO)</td>
<td>7.5 Mi. Up Itkillik River</td>
<td>Cleanup Complete - Institutional Controls</td>
</tr>
<tr>
<td>2652</td>
<td>BLM Legacy Well East Teshekpuk #1</td>
<td>52 Miles WNW of NUI; E. Peninsula in Teshekpuk Lake</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2689</td>
<td>BLM Legacy Well Cape Halkett Drill Site</td>
<td>~104 Miles SE of Barrow</td>
<td>Open</td>
</tr>
<tr>
<td>2923</td>
<td>Lonely AFS Dewline - Diesel Tank SS10</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2924</td>
<td>Lonely AFS Dewline - Beach Diesel SS003</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2925</td>
<td>Lonely AFS Dewline - Hangar Pad SS13</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2926</td>
<td>Lonely AFS Dewline - Landfill LF007</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2927</td>
<td>Lonely AFS Dewline - Diesel Spills SS05</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2928</td>
<td>Lonely AFS Dewline - POL Storage SS04</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2932</td>
<td>Lonely AFS Dewline - Garage SS09</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2933</td>
<td>Lonely AFS Dewline - Landfill LF011/SS006</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2934</td>
<td>Lonely AFS Dewline - Sewage Disposal SS01</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2935</td>
<td>Lonely AFS Dewline - Drum Storage SS02</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>2936</td>
<td>Lonely AFS Dewline - Module Train SS012</td>
<td>Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>3078</td>
<td>BLM Legacy Well Umiat Test Wells #2 &amp; #5 (FUDS)</td>
<td>2 Mi N. of Umiat Airstrip</td>
<td>Open</td>
</tr>
<tr>
<td>3079</td>
<td>BLM Legacy Well Umiat Test Well #4 (FUDS)</td>
<td>~2 Miles North of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3080</td>
<td>BLM Legacy Well Umiat Test Well #6 (FUDS)</td>
<td>~1.5 Mi NE Umiat Airstrip</td>
<td>Open</td>
</tr>
<tr>
<td>3081</td>
<td>BLM Legacy Well Umiat Test Well #8 (FUDS)</td>
<td>~2 Miles North of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3082</td>
<td>BLM Legacy Well Umiat Test Well #10 (FUDS)</td>
<td>~2 Miles North of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3083</td>
<td>BLM Legacy Well Umiat Test Well #11 (FUDS)</td>
<td>~3 Miles NE of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3084</td>
<td>Umiat Lake (FUDS)</td>
<td>~1-2 Miles NE of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3090</td>
<td>BLM Legacy Well Umiat Test Well #1 (FUDS)</td>
<td>4.5 Mi. W &amp; 2.5 Mi. N. of</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>3091</td>
<td>BLM Legacy Well Umiat Test Well #7 (FUDS)</td>
<td>~0.75 Mile NE of Umiat</td>
<td>Open</td>
</tr>
<tr>
<td>3092</td>
<td>BLM Legacy Well Umiat Test Well #3 (FUDS)</td>
<td>~2 Miles NE of Umiat</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>3093</td>
<td>BLM Legacy Well Umiat Test Well #9 (FUDS)</td>
<td>~1.5 Miles NW of Umiat</td>
<td>Open</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADEC HAZ. ID</th>
<th>SITE NAME</th>
<th>ADDRESS</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3854</td>
<td>ConocoPhillips West Sak 18</td>
<td>North Slope</td>
<td>Cleanup Complete - Institutional Controls</td>
</tr>
<tr>
<td>4113</td>
<td>Camp Lonely Landfill</td>
<td>1 Mile West of Pt. Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>4179</td>
<td>Camp Lonely AOC Bulk Fuel Tank Storage Area</td>
<td>1 mile West of Pt. Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>4180</td>
<td>Camp Lonely AOC Incinerator Utility Bldg. Area</td>
<td>1 mile West of Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>4181</td>
<td>Camp Lonely AOC Vehicle Maint. Shop Area</td>
<td>1 Mile West of Point Lonely</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>4223</td>
<td>Lonely AFS Dewline - AOC 1,2,&amp;3</td>
<td>Point Lonely Dewline</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>25759</td>
<td>Kogru River / FUDS Western Landfill Cell 4</td>
<td>W Side of Harrison Bay; 100 Miles W of Deadhorse</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>25760</td>
<td>Kogru River / FUDS Western Landfill Cells 1, 2, 3</td>
<td>W Side of Harrison Bay; 100 Miles W of Deadhorse</td>
<td>Open</td>
</tr>
<tr>
<td>25937</td>
<td>NSB Nuiqsut Power Plant</td>
<td>Utilidor NE of Washeteria; N of Warm Storage Bldg</td>
<td>Open</td>
</tr>
<tr>
<td>26775</td>
<td>FAA Umiat Radio Range</td>
<td>~2 Miles W of Umiat Airstrip; ~69 Miles SSW of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>26935</td>
<td>Umiat Drum Mound (FUDS)</td>
<td>1.6 Miles NE of Umiat Camp; ~64 Miles SW of Nuiqsut</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>26943</td>
<td>BLM Legacy Well Umiat Test Well #9 Drainage (FUDS)</td>
<td>1.5 Miles NW of Umiat Camp</td>
<td>Open</td>
</tr>
<tr>
<td>26966</td>
<td>FAA Knifeblade Ridge NDB</td>
<td>Knifeblade Ridge; ~69 Miles WSW of Umiat; ~119 Miles SW of Nuiqsut</td>
<td>Cleanup Complete</td>
</tr>
<tr>
<td>27013</td>
<td>BLM Legacy Well Square Lake #1</td>
<td>~31 Miles WNW of Umiat; ~71 Miles SW of Nuiqsut; E Bank of Key Creek</td>
<td>Open</td>
</tr>
<tr>
<td>27014</td>
<td>BLM Legacy Well Titaluk #1</td>
<td>~60 Miles W of Umiat; ~102 Miles SW of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>27015</td>
<td>BLM Legacy Well Wolf Creek #3</td>
<td>~35 Miles W of Umiat; ~83 Miles SW of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>27016</td>
<td>BLM Legacy Well Grandstand #1</td>
<td>~28 Miles S of Umiat; ~89 Miles SSW of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>27017</td>
<td>BLM Legacy Well Gubik #1</td>
<td>~16 Miles E of Umiat; ~54 Miles S of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>27018</td>
<td>BLM Legacy Well Gubik #2</td>
<td>~17 Miles E of Umiat; ~55 Miles S of Nuiqsut</td>
<td>Open</td>
</tr>
<tr>
<td>26125</td>
<td>BLM Legacy Wells General</td>
<td>23 Million Acre Area 200 Miles North of Arctic Circle</td>
<td>Informational</td>
</tr>
</tbody>
</table>
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Industry

“We the Eskimos have hunted for these animals for survival. We cannot live without the animals. Even if we can get some money to get food with, we the Eskimos cannot live without the animals we hunt. Right now we are fighting for the survival of these animals from the oil companies who are looking for oil. We do not wish to see our animals disappear from the land for we use them to survive. We do not wish to see the danger to these animals. And we have been talking to let the oil company people know that we do not wish to see the danger to these animals we use for survival. We the Iñupiaq have worked hard to survive in the Arctic. I don’t want to see any changes made in the Iñupiaq way of living.”

Samuel Kunaknana, 1978

Long before contact with Westerners, the ancestors of today’s Iñupiat knew of oil seepages and oil shale in Northern Alaska. Around 1830, an agent from the Hudson Bay Company reported oil seepages around Cape Simpson. Charles Brower, a Yankee whaler, had oil from Cape Simpson assayed in San Francisco, but he determined the deposit was so remote that “it was of no use to anyone”. Today, the network of oil and gas exploration on the North Slope is extending in all directions – eastward, potentially into the Alaska National Wildlife

Refuge, further westward into the National Petroleum Reserve – Alaska, and southerly along the Dalton Highway.

The North Slope, and the community of Nuiqsut in particular, have a complex relationship with the management agencies of state and federal lands on the North Slope. The revenue from the development of oil and gas resources underpins the NSB government and provides revenue, both directly and indirectly, to the regional and village corporations. At times, oil and gas development is in conflict with the values of the Iñupiat people and the resources that they depend upon, both spiritually and for survival. This chapter provides insight into the oil and gas development on the North Slope, including the history of exploration and development, local concerns and environmental impacts, and funding.

11.1. History of Oil and Gas Development on the North Slope

National Petroleum Reserve – Alaska. The National Petroleum Reserve in Alaska is an area of land on the Alaska North Slope owned by the U.S. federal government and managed by the Department of the Interior, Bureau of Land Management. It lies to the west of the Arctic National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service. At a size of approximately 23 million acres, the NPR-A is the largest tract of undisturbed public land in the United States.441

A report by the U.S. Navy in 1900 provided the first written documentation about petroleum resources in the region by verifying oil shale deposits along the Etivluk River, a tributary of the Colville River. The U.S. Geological Survey followed this report in 1901 by completing the first comprehensive survey for the region. The survey results, published in 1904, noted the presence of geological formations that could have petroleum deposits and natural oil seepages near Cape Simpson, located along the Beaufort Sea.

These early investigations led President Warren G. Harding to issue Executive Order 3797 establishing the 37,000 square-mile National Petroleum Reserve Number 4 in 1923. Since 1923, exploratory programs were undertaken, first by the U.S. Navy and then by the USGS; results were published in the 1930 USGS Bulletin 815. The Bulletin included topographic maps and analysis of petroleum and coal resources.442, 443

A renewed demand for petroleum by World War II led to renewed interest in the North Slope region. The 1943 Public Land Order 82 issued by the Secretary of the Interior withdrew areas for petroleum development followed by additional investigations by the U.S. Bureau of Mines, U.S. Navy, and USGS. By 1944, the U.S. Navy had begun a more detailed exploration program that included field mapping, seismic profiling, and aeromagnetic surveys along with 45 shallow core tests and up to 91 test wells. While no commercial deposits were found in this remote and isolated land, oil found at Umiat, Cape Simpson, and Fish Creek provided the foundation for future exploration.444 Of the eight total small oil and gas fields, only one was actually on the verge of production. The Fish Creek well dating back to 1947, and its

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441 For additional information on the NPR-A, see Chapter 10: Land Use & Zoning.
associated oil pool, is in the middle of the present-day Willow Development area and immediately north of the GMT 1 and GMT 2 developments.

Motivated by private industry’s 1968 discovery of oil at Prudhoe Bay and the oil embargo of 1973, the U.S. Navy authorized a new exploration program in the PET–4. Between 1974 and 1977, seven test wells were drilled in the northeast corner; no significant accumulations were found. In 1976, the Naval Petroleum Reserves Production Act (Public Law 94-258) renamed the reserve the National Petroleum Reserve in Alaska and transferred it from the U.S. Navy to the U.S. Department of the Interior, required studies of the reserve’s resources, and convey surface selected surface land to Native village corporations as laid out in ANCSA.445 The USGS was again involved in assessing the oil and gas potential of the NPR-A discovering commercially producible petroleum accumulations. From 1974 to 1982, extensive seismic surveys were conducted and 28 test wells were drilled, nearly every one of which indicated the presence of oil and gas. Two additional natural gas accumulations were discovered that were later turned over to the North Slope Borough to supply the community of Utqiaġvik.446

The 1980 Interior Department Appropriations Act directed the Bureau of Land Management to conduct oil and gas leasing. Four lease sales were held between 1981 and 1984. One exploratory well was drilled on a lease in 1985; it was dry. Additional lease sales were not held again until May 1999. While there was not development in this region for several decades, the exploration from these early leases built on the early NPR-A exploration by the U.S. Navy and USGS that would eventually lead to exploration and development expanding westward. The area was left essentially as a wilderness until the late 1990s.

State of Alaska. Under the statehood act, the new State of Alaska was authorized by the federal government to select 100 million acres of federal land to develop. The State selected land in the Prudhoe Bay region, with hopes that oil and gas would be discovered. It is the largest oil field ever found on the North American continent and lead to the significant oil and gas exploration and development today.447

Establishing a Village. Parallel to the imminent oil and gas development in the late 1960s and early 1970s, North Slope leaders were organizing to ensure that revenue from natural resource extraction benefitted the local communities. In 1971, Congress passed ANCSA, which authorized Alaska Natives to take ownership of lands that they had occupied for thousands of years. But on the North Slope, the state had already selected Prudhoe Bay; the federal government had already set aside both the NPR-A and ANWR. After both the North Slope Borough and ASRC were incorporated in 1972 to provide representation for the Iñupiat people living on the North Slope, the newly formed entities worked closely with Alaska’s senators to ensure their interests were represented in the Naval Petroleum Reserves Production Act, which lays out how the proceeds from lease sales in the NPR-A are allocated to the federal government,
state government, and the local communities. It provides the legal basis for sharing revenue from NPR-A leases.

The village of Nuiqsut was not actively occupied during these years of early exploration although the lands have been used since time immemorial for subsistence activities. Prior to the resettlement of Nuiqsut in 1973, North Slope leaders sought to establish communities that coincided with use of traditional homes that were also in strategic locations. On state land, the Prudhoe Bay region was readying for production, the Trans-Alaska Pipeline had been designed and was working its way through the National Environmental Policy Act (NEPA) process, and exploratory wells being drilled in the Kuparuk field looked promising, an area that would eventually become the second largest oil field in Alaska. Thus, when considering their ANCSA land selections, both the NSB and ASRC encouraged families to resettle the Colville Delta region. Under ANCSA, newly settled communities like Nuiqsut would be entitled to land selections and federal support. The resettlement of the community would also enable ASRC to claim subsurface rights to the same land the newly formed village Native corporation, Kuukpik Corporation, had claimed surface rights. In 1973, 27 families completed a historic trek traveling by foot, dog sled, and snow machine from Utqiaġvik to the Colville River delta to permanently resettle the Kuukpikmiut ancestral homeland. While the Kuukpikmiut were aware of oil under the land in the Colville Delta region, the primary purpose they had in resettling the area was to maintain use of their historical lands area for cultural and subsistence activities.448

Continued Exploration and Development. In the two decades following the 1968 discovery of the Prudhoe Bay oil field, exploration focused on similar-scale, multibillion-barrel fields because fields containing less than a billion barrels were not economically viable then. Technological advances have reduced the costs of exploration and development. Exploration increased on the North Slope in the mid-1990s when several viable fields were discovered, including the 429-million-barrel Alpine field in 1994.449 With these discoveries, industry interest in the NPR-A increased, leading to the federal government reopening part of the NPR-A to leasing in 1999. New development has been marching westward since the production at Prudhoe began to wane in the mid to late 1990s.

The Colville River Unit, often referred to as Alpine, is located eight miles north of Nuiqsut and began production in 2001. It is the fifth largest oil discovery on the North Slope and the first on Native-owned lands. Kuukpik Corporation owns the surface rights to portions of the oil field and receives a small royalty from the production of oil and gas.450 The Colville River unit includes pads CD1 through CD5 in the west portion of the Colville River delta and south toward Nuiqsut, including Fiord West. Exploration and development has expanded further westward to GMT 1 and GMT 2 with expected production well drilling in 2021. Exploration is expanding into the Bear Tooth Unit, with the discovery of Willow that is approximately 30 miles from Nuiqsut and with anticipated production expected in 2024 -

2025.\(^{451}\) Just east of the Colville River Unit is the Nuna Unit, which CPAI purchased from Caelus in 2019. Nuna is an onshore oil development field located on the south side of the main channel of the Colville River.

Immediately east of the Colville River Unit is the Pikka Unit. Oil Search recently acquired the Nanushuk oil field in the Pikka Unit in 2018 and is pursuing phase 1 development with anticipated oil production in 2024.

The Italian company Eni owns and operates both the Oooguruk and Nikaitchuq oil fields, both offshore in the Beaufort Sea. Oooguruk is an 11-acre gravel island in the Beaufort Sea located about 2.5 miles northwest of the Colville River Delta. ARCO Alaska discovered the prospect in 1992 and the field began producing oil in 2008. Oil produced at Oooguruk is piped to the mainland where CPAI processes the oil at its Kuparuk facility. Nikaitchuq is an off-shore facility on an artificial island named Spy Island built in 2010. It is located inside the natural barrier island also named Spy Island about four miles north of Oliktok Point and 35 miles northeast of Nuiqsut.

The Kuparak River Unit is owned and operated by CPAI, with Chevron and ExxonMobil together owning just under six percent interest. Kuparak is one of the largest onshore producing fields in the U.S. It is located approximately 45 miles east Nuiqsut. Kuparak satellites include Meltwater, Tabasco, Tarn and West Sak fields.

Endicott and Northstar are man-made oil production islands lie within the Nuiqsut whaling areas. Their activities create marine traffic, noise and vibrations that affect Bowhead whales’ migration routes and, therefore, the ability, costs and safety of whalers of Cross Island, the Kuukpikmiut traditional whaling area.

In 2016, Caelus Energy announced that it had made an enormous oil discovery in Smith Bay, in state waters just one mile offshore of the NPR-A and Teshekpuk Lake Special Area. Tapping into that discovery would require either a pipeline under the Chukchi Sea or a pipeline traversing the North Slope close to or through Qupałuk, the northeast corner of Teshekpuk Lake that attracts high numbers of birds to near-pristine tundra, wetland, and open water habitat.\(^ {452}\) \(^{453}\) The leases are now held by the Smith Bay Company, which is planning to continue appraisal drilling in 2022 – 2023.\(^ {454}\) While Smith Bay is sixty miles from Nuiqsut, transporting oil may require developing a pipeline through the subsistence areas frequented by Nuiqsut residents.

11.2. Environmental and Historic Protections

Development abides by federal laws, including the National Historic Preservation Act, Endangered Species Act, Marine Mammals Protection Act, and the Clean Water Act. A federal nexus occurs for projects on federal land, using federal funding, or for an action that requires a federal permit. Many of these laws


were enacted right before oil exploration and development grew on the North Slope.

The National Historic Preservation Act was enacted in 1966. Although there had been previous historic preservation laws like the Antiquities Act of 1906 and the Historic Sites Act of 1935, none of them were as sweeping and comprehensive as the National Historic Preservation Act. For oil and gas exploration, each federal agency must identify and assess the effects of actions on historic resources, including considering public view and concerns when making final project decisions.

The 1970s brought about significant environmental protections laws, just as oil and gas was beginning gain momentum in the Arctic. The Environmental Protection Act was signed into law on January 1, 1970. It requires federal agencies to assess the environmental effect of proposed actions prior to making decisions. The range of actions that NEPA covers is broad; they include: making decisions on permit applications; adopting federal land management actions; and constructing highways and other publicly-owned facilities. NEPA allows federal agencies to evaluate not just the environmental effect of proposed actions, but also social and economic effects with opportunities for public review and comment.455 The Marine Mammals Protection Act (MMPA) was passed in 1972. The Act prohibits the take of marine mammals in U.S. waters and by U.S. citizens with exceptions made for some groups of people, such as Alaska Natives. Also in 1972, the 1948 Federal Water Pollution Control Act was significantly reorganized and expanded to become the Clean Water Act (CWA) which regulates discharge of dredged and fill materials into U.S. waters, including wetlands. On the heels of the MMPA and the CWA came the Endangered Species Act (ESA), which was passed in 1973. ESA is meant to both protect and recover imperiled species and the ecosystems upon which they depend.

States control fresh waters and tidelands within their jurisdiction. In Alaska, the Department of Fish and Game manages Essential Fish Habitat (EFH) to identify and protect habitat that is necessary for marine species to complete their lifecycles. Additionally, the Alaska Department of Fish and Game is solely responsible for maintaining anadromous waters data as well as revision to and publication of the Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes and its associated Atlas. The Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes and its associated Atlas (the Catalog and Atlas, respectively) currently lists almost 20,000 streams, rivers or lakes around the state which have been specified as being important for the spawning, rearing or migration of anadromous fish. The U.S. Army Corps of Engineers also has jurisdictions to issue permits for discharge into wetlands and streams under the CWA.

Just six years after NEPA was enacted, the 1976 Naval Petroleum Reserves Production Act was passed. NPRPA contains provisions that apply to any exploration or production activities within areas “designated by the Secretary of the Interior containing any significant subsistence, recreational, fish and wildlife, or historical or scenic value.”456 Based on this authority, in 1977, the Secretary of the Interior designated three

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Special Areas within the NPR-A where activities were to "be conducted in a manner which will assure the maximum protection of such surface values to the extent consistent with the requirements of this Act for the exploration of the reserve." The Teshekpuk Lake Special Area was created to protect migratory waterfowl and shorebirds; the Colville River Special Area was created to protect the arctic peregrine falcon (an endangered species at that time); and the Utukok River Uplands Special Area was created as critical habitat for caribou of the Western Arctic Herd. The Teshekpuk Lake and Colville River special areas were enlarged in the Northeast NPR-A Record of Decision of 1998.\textsuperscript{457}

In 2004, the Secretary created the Kasegaluk Lagoon Special Area.\textsuperscript{458} Additional raptor protections were added to the Colville River Special Area in 2013. These protections were essentially eliminated with the 2021 Record of Decision because they were extended to the entire NPR-A.\textsuperscript{459}

There are additional environmental protections at the regional and local levels. The North Slope Borough, through Title 19 of its Municipal Code, enacts zoning regulations as environmental protections. Locally, Kuukpik Corporation owns land that some industry is using for exploration and development. Kuukpik Corporation, as the landowner, is able to set requirements.

Through federal, state, and local laws, oil and gas development on the North Slope, oil and gas development is heavily regulated with stringent requirements that restrict seasonal activity, buffers, setbacks and other requirements.

\textbf{11.3. Local Concerns}

The Native Village of Nuiqsut represents the interests of its Tribal members, most of whom live in Nuiqsut. The Native Village of Nuiqsut has opposed much of the recent oil and gas exploration over concerns about its effect on resident health, community safety, economic security, and the traditional way of life. There is a sense in the community that development is occurring too quickly and that the ramifications cannot be assessed given the speed of development.

The Native Village of Nuiqsut has requested that the BLM and any other federal agencies clearly define the process for government-to-government consultation so that all involved in the process understand and abide by it. The Tribal members of Nuiqsut assert that the federal government should improve its government-to-government consultation by:

1. Requiring the incorporation of traditional knowledge in its decision-making;
2. Sharing information and studies with the Native Village of Nuiqsut in a meaningful and accessible way;
3. Explaining what happens if the Native Village of Nuiqsut or other local governmental entity and the BLM disagree on a proposal, finding, or decision;
4. Providing adequate time for the Native Village of Nuiqsut and the community to understand and provide feedback on all projects; and
5. Effectively incorporating the Native Village of Nuiqsut and other community feedback into project considerations to ensure


\textsuperscript{458} Ibid


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Additionally, considering each project in isolation rather than a piece of the whole of development in the region is flawed fails to understand and consider cumulative impacts. The Native Village also maintains that the BLM is not providing adequate review time, public engagement, or consideration of its position and comments.

Also difficult for the community is the influx of seasonal workers that burden local infrastructure and services as well as creating additional noise and traffic. Locals assert that rotational workers do not respect their community and culture.

Baseline data is not adequate and does not fully consider the effects of exploration and development in the area over the last ten years. Baseline data should include subsistence, socioeconomic, cultural, recreation, and aquatic resources, as well as water quality, air quality, and health outcomes. It is important that these studies are conducted in coordination with the local community and by organizations that do not have interest in oil and gas development and are completely independent of influence.

The protection of subsistence resources is paramount. While the 2020 IAP requires multiple stipulations and best management practices to protect subsistence areas and resources, the Native Village of Nuiqsut maintains that industry should not be involved in these studies; they should be conducted independently to avoid the appearance of a conflict of interest. Construction, noise, traffic, roads, pipelines, and other industrial activity and infrastructure are harming subsistence resources, directly affecting the community’s ability to hunt for their food and resources for their families. So much infrastructure affects caribou migration and restricts hunters’ ability to shoot in traditional hunting grounds. Although subsistence hunters are allowed to use firearms in the region, they can only shoot in certain areas and directions, greatly limiting their success and enjoyment of this traditional activity. Increasingly, residents are forced to travel further from the village than in the past.

There are additional concerns regarding the effect of industry on polar bears. With climate change forcing the bears to spend more time on land, there is an increased chance of human-bear interactions and harassment. Because residents spend their lives in the region, they know the polar bears’ habits and needs. Yet the BLM consults with the USFWS, which studies the bears but does not understand them the way living in the region and having traditional knowledge passed down generations does. This is another way that all levels of government need to actively work with local governments and residents as well as incorporate traditional knowledge into its decision-making.

Industry and BLM are not doing enough to monitor and analyze the effects of oil and gas development on air quality. Residents have witnessed worsening air quality in the region and have great concern on its effect on their personal health. The additional and development raises the likelihood of toxic air pollution from normal operations, as well as the risk of blowouts that
can cause dramatic increases in air pollution. It is imperative that the BLM require an independent study of air quality and the surrounding region before approving additional projects. A comprehensive health impact analysis is also needed and should be conducted. The effects of contaminants that are emitted from industry are also a concern for the health of wildlife, fish, birds, and the land.461

Resident concerns also focus on what they view as excessive use of the local water supply, light pollution from industry in nearly all directions, and excessive industry traffic, including staging equipment and vehicles within the community increasing the already large emission footprint of industry. They have also stressed that industry needs to build relationships with the community by keeping the community informed and ensuring that roadways do not block subsistence access.462

The area around Nuiqsut has always been part of a larger Conservation Zoning District of the North Slope Borough. Regardless of the protections that have been added or removed for subsistence hunters over the years, one of the highest priorities for the Nuiqsut community is that subsistence species are maintained at a healthy population so that residents can support a healthy and traditional diet. Working collaboratively to reduce both the number of trails and trail use conflicts are important to the community.

One of the most critical issues for the Nuiqsut community is the feeling that the North Slope Borough and other outside agencies do not listen enough to the community concerns, particularly in respect to the human health impacts the village residents face. There is also a feeling that the borough wants to take over primacy of local control from the community. In the simplest terms, the community need frequent and meaningful dialogue with the NSB Mayor and NSB leadership as well as federal and state agency officials. Constant meetings where outsiders tell the community what is going to happen is not meaningful participation.

There are social impacts to industry being so close to the community. With road connectivity to the rest of the state much of the year and a seemingly constant battle for subsistence access, residents are concerned about the overall well-being of the community, including recreational opportunities that may be needed now more than ever before, the increased availability of drugs and alcohol, and the need for counseling and suicide prevention. These are just some of the effects of industry’s presence and many residents feel that industry should assist in planning for these needs.

Lastly, the Kuukpikmiut will remain in Nuiqsut long after industry has left. Before industry leaves the North Slope, the residents of Nuiqsut and the North Slope as well as the state and federal governments and industry must plan for their eventual departure, including the timing, expectations, process, and funding for Decommissioning, Removal, and Restoration (DR&R) activities. In addition to planning for eventual DR&R of the region, Nuiqsut, the North Slope Borough, industry, and state and federal agencies must consider the needs of residents, namely the need to relinquish existing access roads and bridges to the local or regional

government for the benefit of residents. The North Slope will also face declining revenues. Recognizing and planning for these challenges will make weathering them more manageable.

11.4. Community Funding

Exploration in the NPR-A lead to the development of the NPR-A Impact Mitigation Grant Program in 1980. Although the federal government manages the NPR-A, federal statute requires that 50 percent of funds received by the federal government from the “sales, rentals, bonuses, and royalties on leases issued...” must be paid to the State of Alaska. Those funds are required to be used by the state for planning; construction, maintenance, and operation of essential public facilities; and other necessary provisions of public service. The funds must go to subdivisions of the state that are most directly or severely impacted by the development of oil and gas. The grant funds are focused on the communities of Anaktuvuk Pass, Atqasuk, Nuiqsut, Utqiagvik, and Wainwright and the North Slope Borough in implementing projects and programs for these five communities.

The funds that the State of Alaska receive from the federal government are deposited into the National Petroleum Reserve Alaska Special Revenue Fund. These funds are used to support the NPR-A Impact Mitigation grants to communities that are most directly or severely impacted by oil and gas development in addition to also going toward the Alaska Permanent Fund, Public School Trust Fund, Power Cost Equalization and Rural Electric Capitalization Fund, and the state’s General Fund.

Since its inception, the NPR-A Impact Mitigation Grant Program has provided $222,510,747 in funding to five North Slope communities. Nuiqsut has received approximately $39,221,013, 17.6 percent of the total grant funds distributed to communities in the North Slope region. Nuiqsut’s 2021 population is 6.8 percent of the total population of communities that receive NPR-A Impact Mitigation grants. The impact is greater for them than for other North Slope communities so most or all NPR-A Impact Mitigation funding should benefit Nuiqsut. Others contend that other communities need help too and want them to also receive funding. However, without legislative guidance, it is impossible to determine the percent of funds that Nuiqsut should receive as the community most severely impacted by oil and gas development.

Industry provides aid to Nuiqsut that is not accessible to other North Slope communities. CPAI provides some employment and internship opportunities to Nuiqsut residents and job training opportunities. Residents work at Alpine, have seasonal employment during construction, exploration and ice road season, and serve as subsistence monitors. CPAI has also held a job fair in Nuiqsut, offers a career program for high school students, provided funding for students to participate in the Alaska Native Science and
Engineering Program and attend Microsoft Excel classes.⁴⁶⁴

CPAI provides operation funds for the Kuukpik Subsistence Oversight Panel.

As part of compensatory mitigation, Oil Search is in the process of adding a septage receiving station to the Nuiqsut wastewater treatment plant, anticipated to cost. This facility is currently in design and is estimated to cost between $12 and $14 million.⁴⁶⁵

Additionally, ASRC and Kuukpik Corporation own surface and subsurface rights on land that has been developed by CPAI. Although most of the Kuukpik surface ownership and ASRC subsurface ownership are within the NPR-A, all revenues associated with their land is not deposited into the NPR-A Impact Aid Program – but is paid directed to them. The revenue from these activities is provided back to Nuiqsut residents in the form of shareholder dividends.

The accuracy of this map is subject to pending decisions currently on appeal and other administrative actions. Please visit www.dog.dnr.alaska.gov/Information/MapsandGIS to see our most current maps.
Working Interest Ownership of North Slope Units

State of Alaska, Department of Natural Resources, Division of Oil and Gas, as of Sept 2021

This map is for illustrative purposes only and should not be relied upon for title research. Working interests may differ between producing and non-producing acreage and producing and non-producing depths. These interests do not reflect any pending assignments. To see our most current maps, please visit www.dog.dnr.alaska.gov/Information/MapsandGIS to see our most current maps.
North Slope Lease Ownership by Notification Lessee*

Division of Oil and Gas
Department of Natural Resources
State of Alaska
August 2021

* Notification Lessee is defined by 11 AAC 88.185(20) as a lessee or agent authorized by the lessees to receive notices on behalf of all lessees from the state in connection with a lease.

This map displays issued and pending State leases and active State lease sale tracts. It was created, edited and published by the Division of Oil and Gas. The information displayed is for graphic representation only and is subject to change. The source documents remain the official record. Base map data are in North American Datum 1983, Alaska Albers Projection.
CHAPTER 11: INDUSTRY

North Slope Oil and Gas Activity
State of Alaska, Department of Natural Resources, Division of Oil and Gas, as of December 31, 2020

Oil Search & Repose
ExxonPikka to reach initial commercial oil in 2023. Milparr prospect oil planned to process through Pikka facilities in a third development phase. Sirkup prospect likely to become its own development hub in the future. Majority of oil production to come from the shallow conventional Nanushuk formation.

Hilcorp
According to the 3rd plan of development filed with the Division of Oil and Gas, anticipates drilling into 17 new wells and 20 workovers during the fall of 2022. Four development wells and four additional wells with AGOCO.

Great Bear
Amend Unit granted effective Nov 2. POE includes two wells from gravel pads for long-term production tests to take place through Spring 2021. Talikhi Unit granted effective November 12, POE includes reworking 3-D seismic and drilling two wells, Talihi A winter of 2021 and Talihi B winter of 2022.

BP – Hilcorp Transfer
Regulatory Commission of Alaska allows Hilcorp affiliate company Harvest Alaska LLC to take possession of BP’s stake in the Trans-Alaska Pipeline System (TAPS) and Mine Point and Point Thompson pipelines.

BLM

Explanatory Wells

Assessable Energy

Accumulable Energy

Division of Oil and Gas
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University of Edinburgh. 2020. *Climate shifts prompt shrubs and trees to take root in open areas.*


Appendices

Appendix A: State of Alaska Community Profile Maps
Appendix B: Adaptation Strategies for Climate Change Impacts
Appendix C: Resolutions of Plan Support/Adoption
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## Appendix B: Adaption Strategies for Climate Change Impacts

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<th>Weather-related physical change</th>
<th>Potential impacts to the village</th>
<th>Adaptive Response Options</th>
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<td>Warmer weather causes thinner lake, river and sea ice. Thawing permafrost. Permafrost soils throughout the Arctic contain almost twice as much carbon as the atmosphere. Warming and thawing of these soils increases the release of carbon dioxide and methane through increased decomposition. Thawing permafrost delivers organic-rich soils to lake bottoms where decomposition in the absence of oxygen releases additional methane in these water bodies.⁴⁶⁶</td>
<td>Flooding or damage to ice cellars result in food contamination and food insecurity. This forces families to eat non-traditional and less healthy/nutritious packaged “store bought” food flown in at great expense. Hunters would have to spend greater financial resources and more time, encompassing greater hazards, to find riverine and terrestrial species—beyond the 10 to 15 miles ideal distance—and into unsafe sea ice conditions. Unknown ice thickness creates hazards for hunters and other winter travelers on snow machines. Traditional knowledge cannot be relied upon as the thinner ice conditions change seasonally and can be exacerbated yearly. Warmer water in lakes and streams cause fish to die in nets, fish texture “softer” and drying of fish is more difficult.</td>
<td>Each village establishes a communication system with residents traveling to hunt, fish and gather foods and travelers on the ice are required to carry emergency GPS tracking devices. Village Search &amp; Rescue teams are properly equipped to rescue travelers in trouble. Permit stipulations for Oil &amp; Gas or commercial tourism travel could require a subsistence mitigation fund which would provide funds to hunters to cover the costs to purchase adequate boats, fuel and equipment to find and harvest subsistence resources at the greater distance from their traditional migratory routes. Aerial “flyovers” of traditional routes with specialized equipment to measure the depth of ice and then posting and advertising to the village the safest route to take on the ice for hunting expeditions and for traveling to common destinations such as the nearby village.</td>
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<td>allows use of propellers,</td>
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<td>along with parking areas</td>
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<tr>
<td>Weather-related physical change</td>
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<td>Adaptive Response Options</td>
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<td>(continued) Warmer weather causes thinner lake, river and sea ice. Thawing permafrost. Permafrost soils throughout the Arctic contain almost twice as much carbon as the atmosphere. Warming and thawing of these soils increases the release of carbon dioxide and methane through increased decomposition. Thawing permafrost delivers organic-rich soils to lake bottoms where decomposition in the absence of oxygen releases additional methane in these water bodies.</td>
<td>Methane rising to tundra—changes “taste” of lichen, moss, etc. for caribou and other land animals</td>
<td>NSB Wildlife biologists and subsistence hunters should observe the behaviors of tundra-dependent animals to determine if this is a significant problem. If it is, it may be necessary for the NSB to experiment and “grow” lichen and moss seeds and spread them around a traditional caribou migratory route or create a new migratory route with the plant life that they find suitable.</td>
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<tr>
<td>Less stable ground, subsidence and differential settlement of structures. Sanitation and health problems result from broken wastewater and water lines within the villages.</td>
<td></td>
<td>Among other measures, the NSB could assist the villages in procuring gravel to shore up buildings, roads and other infrastructure. It may be fruitful to partner with research universities to create a new material that can be produced locally in each village that functions like or better than gravel.</td>
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<tr>
<td>Flooding and structural failure of ice cellars. This can result in food contamination and, if ice cellars need to be abandoned, can lead to food insecurity as there is no room in village homes for storage of a freezer. This would lead families to be dependent on “store bought” food which lacks the nutrients of traditional, local foods.</td>
<td></td>
<td>Although culturally difficult to adjust to, it may be necessary for the village leaders to build a community or co-op ice cellar in a convenient location. The location should be convenient to hunters as well as to family members retrieving the foodstuff.</td>
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<td>Early snow melt.</td>
<td>Early snow melt on land exposes the mushy/marshy tundra and reduces the hunting season and tundra travel is too difficult. Early snow melt may alter subsistence species’ migratory schedule and routes, causing hunters to travel greater distances to find the resource.</td>
<td>Early snowmelt results in reduced days for oil &amp; gas industry to traverse frozen ground for exploration, development or transporting the resource to market. Limited season for ice roads.</td>
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<td>Increased inland rain.</td>
<td>Increased rain on snow events during winter cause a layer of ice to form over tundra vegetation preventing grazing by animals like caribou and muskoxen; this causes die-offs of these animals.</td>
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<tr>
<td>Warmer temperatures on the tundra. Caribou herds will face a variety of climate-related impacts resulting in changes in their migration routes, calving grounds, forage availability and drinking water sources as snow and river ice conditions change, permafrost thawing results in tundra subsidence and methane gas release into fresh water lakes, and warmer weather dries the tundra making it susceptible to wildfires.</td>
<td>Warmer weather inland causes drying of tundra which makes the land susceptible to lightning-caused fires which can spread for many miles. Warmer weather also causes lakes to dry up from evaporation, along with the thawing permafrost and resulting draining.</td>
<td>Increase fire-fighting capabilities for both wild fires and structures. Protect drinking water lakes or develop new reservoirs with lining that protects against leaks and methane releases from underlying permafrost.</td>
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<td>(continued) warmer temperatures on the tundra. Caribou herds will face a variety of climate-related impacts resulting in changes in their migration routes, calving grounds, forage availability and drinking water sources as snow and river ice conditions change, permafrost thawing results in tundra subsidence and methane gas release into fresh water lakes, and warmer weather dries the tundra making it susceptible to wildfires.</td>
<td>Drier tundra soil cause berries to ripen early and spoil faster. Warmer weather increase insect harassment for berry harvesters. Intrusion of non-native species that may cause environmental harm; some species such as salmon species and cold-tolerant crab may increase in abundance in arctic waters. This may attract commercial fishing industries to the arctic seas which could diminish subsistence resources.</td>
<td>Tundra ecosystems could change to spruce/aspen forests and grasses could be incorporated into the tundra. Shrubs entering the tundra could attract moose while decreasing the lichen for caribou.</td>
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<td>New plant species could attract new species of pests which could annoy caribou.</td>
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<td>Declining or shifting wetlands could affect migratory or resident bird species.</td>
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<td>Industrial development relying on ice roads for access to development sites could be stymied by a reduced supply of water to create the roads.</td>
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### Weather-related physical change

(continued)

*Warmer temperatures on the tundra. Caribou herds will face a variety of climate-related impacts resulting in changes in their migration routes, calving grounds, forage availability and drinking water sources as snow and river ice conditions change, permafrost thawing results in tundra subsidence and methane gas release into fresh water lakes, and warmer weather dries the tundra making it susceptible to wildfires.*

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<td>A drier tundra: Although rain will increase, evapotranspiration and water drainage from cracks in the permafrost will cause a drier tundra that will be susceptible to more numerous and intense tundra fires releasing carbon and contaminants like mercury into the atmosphere.</td>
<td>Villages do not have the trained staff or equipment to extinguish wildfires which threaten homes, traditional foods, food sources for wildlife and creates smoke which causes or exacerbates respiratory illness in humans and animals. Wildlife change their migratory routes in subsequent years due to the damage to their foodstuff and nesting/calving lands.</td>
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<tr>
<td>Slow recovery of vegetation or vegetative shifts after fires can profoundly affect wildlife. Lichens, a critical winter food for caribou, recover extremely slowly. Loss of food for caribou cause the herd to change routes which may be a greater distance from the village causing economic hardships (gas, equipment repair, time) and hazards (thinning ice) for subsistence hunters.</td>
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<td>Acid Rain. Toxins such as DDT, PCBs, dioxin, pesticides and heavy metals are carried by both air and ocean currents thousands of miles to the colder arctic ecosystem. The cold Arctic environment is a “sink” or settling area for these contaminants which circulate around the globe northward in air and ocean currents. They settle out in Arctic waters, sea ice, and land, where they remain for long periods and break down very slowly because of the colder climate. The effects of these toxins are magnified as they are ingested by animals rising up the food chain. This is causing a health crisis among the Inuit people in the Arctic Circle. As a result, both land and sea dwelling animals ingest the toxins. On land the toxins are deposited into the plant life and eaten by Caribou, once source of food for the Inuit. In the water, the toxins are found in plankton, which fish in turn eat. These fish then become a source of food for seals and polar bears. (continued)</td>
<td>The North Slope is fortunate that major contaminant transport pathways tend to lead elsewhere, such as Canada and Greenland. The Slope receives some contaminants from Asia but levels are still relatively low. Consumers of subsistence-harvested foods from the North Slope are fortunate that the scientific analysis that the NSB Wildlife Management Department conducts have shown very low levels of POPs to be present in many of the subsistence foods that we eat and are below levels of public health concern. They studies demonstrate that subsistence foods are healthy foods.</td>
<td>The NSB Wildlife Management Department continues to monitor and analyze subsistence animals for human dietary health benefits as well as for potential impacts of consuming toxins. Hunting and harvesting marine and riverine animals and air and terrestrial animals is an important part of the Iñupiaq lifestyle. It is not only an important part of their culture, passed down through the generations, but it also provides food. Traditional subsistence foods provide relatively inexpensive and readily available nutrients, essential fatty acids, antioxidants, calories, protein, and many health benefits. Some of these benefits include protection from diabetes and cardiovascular disease, improved maternal nutrition and neonatal and infant brain development. Severely limiting the consumption of traditional foods may result in harm because reduction of the consumption of foods that have health benefits may increase the consumption of less healthy “store bought” foods.</td>
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<td>These toxins are called Persistent Organic Pollutants (POPs) because they are persistent: they travel long distances; they persist long after they are released at their source and move from air and water into spoil, plants, animals and humans; they magnify in living organisms and accumulate in fat, organs and muscles; they can reduce the animal’s ability to conceive and carry offspring; they decrease the animal’s ability to fight off disease; they can impair brain function; and a number of POPs are carcinogenic, causing cancers.</td>
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<td>Migratory birds can have 100 times higher concentrations of POPs compared to birds that do not migrate.</td>
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<td>In the Arctic, human exposure to toxins occur primarily through eating of subsistence foods.</td>
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### Weather-related physical change

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<td>Higher levels of ultraviolet (UV) radiation. Due to greenhouse gas effects of the stratospheric ozone temperatures, UV radiation in the Arctic is projected to remain elevated.(^{473})</td>
<td>Increased IV exposure can cause skin cancer, cataracts, and immune system disorders in humans. Elevated UV can disrupt photosynthesis in plants and can have detrimental effects on the early life states of fish and amphibians. Risks are greatest in the Spring when sensitive species are most vulnerable, and warming-related declines in snow and ice cover increase exposure for organisms normally protected by such cover.</td>
<td>Vigilance and adaptation to changing conditions are required. Alaskan Native communities have for centuries adapted to scarcity and environmental variability and, thus, have developed deep cultural reservoirs of flexibility and adaptability; this tradition must continue.</td>
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Appendix C: Resolutions of Plan Support/Adoption
NORTH SLOPE BOROUGH
ORDINANCE SERIAL NO. 75-06-76

AN ORDINANCE ADOPTING THE NUIQSUT
COMPREHENSIVE DEVELOPMENT PLAN

WHEREAS, the Planning Commission is charged under North Slope Borough Code of Ordinances (NSBMC) § 2.12.160(a) and 2.12.160(a)(1) with the responsibility to prepare and recommend to the Assembly a comprehensive plan (Plan) for the systematic development of the Borough; and

WHEREAS, the Planning Commission is further charged under NSBMC § 18.20.020 to establish one or more districts using approved Village Comprehensive Plans as a guideline; and

WHEREAS, the Planning Commission is further charged under NSBMC § 19.040.060 (A)(2) to ensure that the incorporated villages accommodate uses in accordance with both the Borough Comprehensive Plan and Comprehensive Development Plan for the community; and

WHEREAS, the Planning Commission is further charged under NSBMC § 19.70.020 to follow policies intended to guide the approval of development and uses in the village districts consistently with the relevant adopted Village Comprehensive Plan; and

WHEREAS, the common goals of local control and self-determination, the protection of the land, water and subsistence resources, mitigation of the impacts which may occur as a result of oil and gas development and other developments, the maximization of economic benefits and employment opportunities for Nuiqsut today and into the future are fully shared by all of the organizations working together on this project; and

WHEREAS, the Nuiqsut Comprehensive Plan (the Plan) was developed with significant public involvement, including public meetings in Nuiqsut in 2010, 2015, and 2022, numerous meetings with stakeholders, and opportunities for residents and other stakeholders to provide comments; and

WHEREAS, the City of Nuiqsut adopted Resolution 2022-15 on July 26, 2022, recommending approval of the Plan as developed by the North Slope Borough; and

WHEREAS, the Kuukpik Corporation adopted Resolution 2022-26 on August 4, 2022, recommending approval of the Plan as developed by the North Slope Borough; and

WHEREAS, the Native Village of Nuiqsut has participated in leadership and community meetings discussing the direction and contents of the draft Plan and has received copies of the Plan for review; however, the Tribal Council has not met to provide final comments or consider a resolution in support; and
WHEREAS, the Planning Commission adopted Resolution 2022-12 on September 29, 2022, recommending the Assembly approve of the Plan; and

WHEREAS, the Nuiqsut Comprehensive Development Plan is found to be a sufficient guide to future development in Nuiqsut for the next 20 years.

NOW, THEREFORE, BE IT ENACTED:

SECTION 1. Classification. This ordinance is a non-code ordinance.

SECTION 2. Severability. If any provision of this ordinance or any application thereof to any person or circumstance is held invalid, the remainder of this ordinance and the application to other persons and circumstances shall not be affected thereby.

SECTION 3. Effectiveness. This code ordinance shall become effective immediately upon adoption.

SECTION 4. Adoption of Comprehensive Plan. The North Slope Borough Assembly hereby adopts the Nuiqsut Comprehensive Development Plan, attached as Exhibit B, as recommended by the City of Nuiqsut, the Kuukpik Corporation and the North Slope Borough Planning Commission.


INTRODUCED: 11/01/2022  
ADOPTED: 12/06/2022

Vernon A. Edwardsen, President  
Date: 12/06/2022

ATTEST:  
Sheila Burke, Borough Clerk  
Date: 12/06/2022

Harry K. Brower, Jr., Mayor  
Date: 12/06/2022
NORTH SLOPE BOROUGH PLANNING COMMISSION
RESOLUTION 2022-12

A RESOLUTION RECOMMENDING TO THE
ASSEMBLY APPROVAL OF THE NUIQSUT
COMPREHENSIVE PLAN

WHEREAS, the Planning Commission is charged under North Slope Borough Code of Ordinances (NSBMC) § 2.12.160(A)(1) with the responsibility to prepare and recommend to the Assembly a comprehensive plan (Plan) for the systematic development of the Borough; and

WHEREAS, the Planning Commission is further charged under NSBMC § 18.20.020 to establish one or more districts using approved Village Comprehensive Plans as a guideline; and

WHEREAS, the Planning Commission is further charged under NSBMC § 19.040.060 (A)(2) to ensure that the incorporated villages accommodate uses in accordance with both the Borough Comprehensive Plan and Comprehensive Development Plan for the community; and

WHEREAS, the Planning Commission is further charged under NSBMC § 19.70.020 to follow policies intended to guide the approval of development and uses in the village districts consistently with the relevant adopted Village Comprehensive Plan, and

WHEREAS, the common goals of local control and self-determination, the protection of the land, water and subsistence resources, mitigation of the impacts which may occur as a result of oil and gas development and other developments, the maximization of economic benefits and employment opportunities for Nuiqsut today and into the future are fully shared by all of the organizations working together on this project; and

WHEREAS, the Nuiqsut Comprehensive Plan (the Plan) was developed with significant public involvement, including public meetings in Nuiqsut in 2010, 2015, and 2022, numerous meetings with stakeholders, and opportunities for residents and other stakeholders to provide comments; and

WHEREAS, the City of Nuiqsut adopted Resolution 22-15 on July 26, 2022, recommending approval of the Plan as developed by the North Slope Borough, and is attached hereto and incorporated herein as Exhibit A.; and

WHEREAS, the Kuukpik Corporation adopted Resolution 2022-26 on August 4, 2022 recommending approval of the Plan as developed by the North Slope Borough, and is attached hereto and incorporated herein as Exhibit B; and

WHEREAS, the Native Village of Nuiqsut has participated in leadership and community meetings discussing the direction and contents of the draft Plan and has received copies
of the Plan for review; however, the Tribal Council has not met to provide final comments or consider a resolution in support;

WHEREAS, the Nuiqsut Comprehensive Plan is found to be a sufficient guide to future development in Nuiqsut for the next 20 years; and

NOW, THEREFORE, BE IT RESOLVED THAT:

The North Slope Borough Planning Commission recommends to the North Slope Borough Mayor and the North Slope Borough Assembly the approval of the Nuiqsut Comprehensive Plan.

THAT a copy of this Resolution be forwarded to the North Slope Borough Clerk.

INTRODUCED: 9/29/22
ADOPTED: 11/17/22

[Signature]
Paul Bodfish Sr., Chairman
Date: 9/29/22

[Signature]
Esther S. Hugo, Clerk
Date: 9/29/22
CITY OF NUIQSUT
RESOLUTION No. 22-15 [as AMENDED]
A RESOLUTION OF THE CITY OF NUIQSUT ENDORSING THE
NUIQSUT COMPREHENSIVE PLAN

WHEREAS the City of Nuiqsut is a second class city within the North Slope Borough;

WHEREAS the North Slope Borough and its consultants have worked with the community to develop the Nuiqsut Comprehensive Plan (Plan);

WHEREAS, the process to develop the Plan involved a collaborative effort of the City of Nuiqsut, the Native Village of Nuiqsut, and the Kuukpik Corporation;

WHEREAS, the Plan furthers the common goals of local control and self-determination, the protection of the land, water, and subsistence resources, and seeks to mitigate the negative impacts of development;

WHEREAS, the Plan provides a vision for the future, identifies current and projected future land uses, and addresses issues important to the community;

WHEREAS, the Plan incorporates the principles and addresses the objectives of the Paisanich which the North Slope Borough Iñupiat History, Language, and Culture Commission, by Resolution 2021-01, endorsed as the guiding principles for Nuiqsut development and served as the beginning point in the development of the village comprehensive plan;

WHEREAS the Plan establishes goals, objectives and strategies to achieve the community’s vision for the future and to improve its quality of life; and

WHEREAS, the City of Nuiqsut Council has reviewed the Nuiqsut Comprehensive Plan and the North Slope Borough and its consultants Eskimos, Inc. and UMIAQ Environmental have incorporated the City’s comments into the Final Draft dated July 2022;

WHEREAS, the City Council of the City of Nuiqsut approved this Resolution 22-15 with the proviso that the DRAFT Comprehensive Plan dated July 20, 2022 be amended as follows: (1) add language on Page xvi to read “2. Preserve, protect and maintain Iñupiaq traditions...”; (2) add language on Page 21 to read “Goal 2 Preserve, protect and maintain Iñupiaq traditions and cultural activities”; (3) add language on Page 28 to read “Goal 2 Preserve, protect and maintain Iñupiaq traditions...”; and (4) add language on page 63 to read “expanding fluency in Iñupiaq to preserve, protect and maintain traditional culture and values.”

Resolution 22-15, July 26, 2022, as AMENDED
Resolution 22-15
Endorsing the Nuiqsut Comprehensive Plan with requested amendments
July 26, 2022
Page 2 of 2

NOW, THEREFORE BE IT RESOLVED, the City of Nuiqsut endorses the July 20, 2022, Final Draft of the Nuiqsut Comprehensive Plan with the amendments as requested in the last WHEREAS hereto and recommends approval of the Plan by the North Slope Borough Assembly.

PASSED AND APPROVED by a duly constituted quorum of the City Council of the City of Nuiqsut, Alaska, at a Special City Council Meeting this 26th day of July 2022.

The Honorable Rosemary Ahtuangaruak
Mayor

Attest:

Alize Kallenbach, City Clerk
RESOLUTION 2022-26
A RESOLUTION OF THE KUUKPIK CORPORATION ENDORSING THE
NUIQSUT COMPREHENSIVE PLAN

WHEREAS, the North Slope Borough and its consultants have worked with the community to develop the Nuiqsut Comprehensive Plan (Plan);

WHEREAS, the process to develop the Plan involved a collaborative effort of the Kuukpik Corporation, the City of Nuiqsut, and the Native Village of Nuiqsut;

WHEREAS, the Plan furthers the common goals of local control and self-determination, the protection of the land, water, and subsistence resources, and seeks a balance between the benefits and the negative impacts of development;

WHEREAS, the Plan provides a vision for the future, identifies current and projected future land uses, and addresses issues important to the community;

WHEREAS, the Plan incorporates the principles and addresses the objectives of the Pâsanîch which the North Slope Borough Inupiat History, Language, and Culture Commission, by Resolution 2021-01, endorsed as the guiding principles for Nuiqsut Development and served as the beginning point in the development of the village comprehensive plan;

WHEREAS, the Plan establishes goals, objectives, and strategies to achieve the community’s vision for the future and to improve its quality of life; and

WHEREAS, the Kuukpik Corporation has reviewed the Nuiqsut Comprehensive Plan and the North Slope Borough and its consultants Eskimos, Inc. and UMIAQ Environmental have incorporated Kuukpik’s comments into the Final Draft dated July 2022;

NOW THEREFORE BE IT RESOLVED, Kuukpik Corporation hereby endorses the July 20, 2022, Final Draft of the Nuiqsut Comprehensive Plan and recommends approval of the Plan by the North Slope Borough Assembly.

PASSED AND APPROVED by a duly constituted quorum of the Board of Directors of the Kuukpik Corporation, at a Special Board Meeting on this 4th day of August 2022.
Dated this 4th day of August, 2022

ATTEST:

Secretary

[Signature]

President