Alaska Wilderness League - Audubon Alaska - Conservation Lands Foundation
Center for Biological Diversity - Defenders of Wildlife - Earthjustice
Friends of the Earth - Great Old Broads for Wilderness - Northern Alaska Environmental Center
Sovereign Iñupiat for a Living Arctic - Sierra Club - The Wilderness Society
Trustees for Alaska

February 2, 2021

Stephanie Rice, Project Lead
Alaska State Office
Bureau of Land Management
222 West Seventh Avenue – Mailstop 13
Anchorage, Alaska 99513
srice@blm.gov

Sent via e-mail

Re: Willow Master Development Plan Supplemental Environmental Impact Statement

Dear Ms. Rice:

On behalf of the above-listed organizations and our members and supporters, we provide the following comments on the Supplemental Environmental Impact Statement (SEIS) to inform the Bureau of Land Management's (BLM) reconsideration of the proposed Willow Master Development Plan (Willow Plan). This project would have significant impacts across the entire National Petroleum Reserve–Alaska (Reserve) and broader region, and its significant greenhouse gas (GHG) emissions will have global consequences. These comments outline many issues that BLM must address in the National Environmental Policy Act (NEPA) review process as it considers whether to approve Willow. As the agency responsible for administering the Reserve's oil and gas program, BLM must ensure the planning process complies with all applicable laws and regulations as well as the management and permitting requirements of its cooperating agencies. BLM is required to fully analyze all potential impacts from this proposed project in a scientifically sound and publicly transparent manner. Any valid scientific review will show that Willow will have unavoidable and un-mitigatable destructive impacts on the western Arctic's wildlife and habitat and on the climate. More fundamentally, Willow is contrary to the action necessary to address the climate emergency and is inconsistent with this administration's priorities and policy commitments. It should not be approved.

The most appropriate path forward is for BLM to prepare a revised draft EIS that can re-examine the project purpose and need and develop an appropriate range of alternatives for detailed analysis. It is troubling that BLM is preparing a supplemental NEPA analysis instead of a revised DEIS, and that it is moving forward without first holding a scoping period. The purpose of scoping is to determine the scale and impacts of the proposed project and identify the significant issues that require in-depth analysis.[1] Scoping provides a valuable opportunity for the public to weigh in on the alternatives BLM should consider and their potential impacts, as well as an opportunity to provide additional new information that should be considered. Scoping can also help inform BLM of new, changed, or insufficiently evaluated direct, indirect, and

[1] 40 C.F.R. § 1501.7(a)(2) (2019).

cumulative impacts of Willow that should be analyzed in any new NEPA process. Formal scoping with a sufficient comment period is a critical step for BLM to seek input from affected communities, tribes, and interested parties, and a vital component of an open and transparent process. It should not be sacrificed for expediency.

The Trump administration's rushed approval of the project was unlawful, as the Alaska District Court recognized in its order vacating BLM's approvals.[2] The Court's decision creates an obligation and opportunity for BLM to fully reconsider Willow and the agency should not limit its analysis to the shortcomings identified by the Court. BLM should not rush this process. Moreover, BLM should not even begin any NEPA process until ConocoPhillips Alaska, Inc. (ConocoPhillips) submits new permit applications for the agency to act on, and only after the Department of Interior (Interior) concludes its review of the Integrated Activity Plan (IAP) for the Reserve and articulates a management direction consistent with the administration's climate and biodiversity goals.

BLM should not rush or truncate the scope of this NEPA review. BLM's prior process to approve Willow provided little time for public involvement or for BLM to conduct a meaningful analysis of impacts. BLM did not provide the public and affected tribes and communities, particularly Nuiqsut, with a sufficiently detailed project description or an adequate amount of time to generate constructive comments, despite requests for additional time and information. A rushed process is particularly inappropriate given that the Court already vacated an insufficient environmental analysis. Simply put, BLM should set a timeline to evaluate Willow based on the need to conduct adequate study and public engagement; this timeline should not be driven by ConocoPhillips' timelines and preferences.

As described, BLM needs to hold a formal scoping period. However, in light of BLM's lack of clarity about a scoping period, we provide the comments in the attached document now for BLM's consideration

The scope of the Willow project is significant. As previously proposed, Willow would involve the construction, operation, and maintenance of a massive oil and gas development project including a new central processing facility with satellite drill pads, a new system of roads, an airstrip, pipelines stretching back to the Alpine facility, a new gravel mine, and use of an offshore island and massive ice bridge to support module delivery via sealift barges. ConocoPhillips estimates that Willow may produce up to 200,000 barrels of oil per day for at least 30 years, resulting in 260 million metric tons carbon dioxide equivalent (CO_2E). BLM is obligated to consider all of the known direct, indirect, and cumulative impacts of this proposal in the Willow Plan SEIS.

Climate change effects are already occurring in the Reserve and are expected to increase. The Willow project will intensify these impacts by causing further changes to wildlife behavior, hydrology, permafrost, and subsistence hunting patterns. BLM is obligated under NEPA to analyze not only the effects of proposed actions on climate change, but also the implications of climate change on the environmental impacts of this proposed action. BLM's prior analyses did

[2] *Sovereign Iñupiat for a Living Arctic v. Bureau of Land Mgmt.*, __ F. Supp. 3d __, Nos. 3:20-cv-00290-SLG, 3:20-cv-00308-SLG, 2021 U.S. Dist. LEXIS 155471 at *86 (D. Alaska, Aug. 18, 2021) ("SILA Order").

not adequately analyze these impacts. BLM should not rush forward to approve this proposal without first undertaking careful studies of the project area in light of the changing climate and understanding the significance of the project's emissions in the context of the climate crisis.

In addition to the sheer scale of industrial infrastructure and GHG emissions contemplated by the Willow Plan, the location also warrants close attention. The proximity of the project to the community of Nuiqsut and the potential adverse impacts of the project on subsistence resources and activities are gravely concerning. The speed of development in and adjacent to the Reserve is staggering. Oil and gas development and associated industrial activities in the Greater Mooses Tooth Unit, Harrison Bay, and nearby state lands are encircling Nuiqsut. BLM must fully analyze the potentially significant adverse effects of the Willow Plan on culture, subsistence, public health, and environmental justice in the context of this rapidly increasing development. BLM and Interior should consider how to empower and support local communities and economies in a just transition to a future without new oil development.

ConocoPhillips' proposed project is also within and adjacent to the Teshekpuk Lake Special Area, one of the most productive wetland complexes in the Arctic and an important calving and foraging ground for the Teshekpuk Lake Caribou Herd, an important subsistence resource for communities on the North Slope. It would also place infrastructure in the Colville River Special Area, which provides important habitat to birds as well and subsistence resources. Expanding development in these areas would harm biodiversity and fragment otherwise intact habitat.

In sum, the scope, timeline, and alternatives considered for any new NEPA process for Willow should be driven by the goal of ensuring robust public input and recognition of the need to use the best scientific information. We remain deeply concerned about the significant, irreparable harm that Willow would cause to the resources and values of the Reserve and to the climate. We believe a robust analysis will demonstrate that the only alternative that is consistent with the need to address the climate emergency, protect biodiversity, and otherwise best serve the needs of the public is the no action alternative.

If you have any questions about these comments, please contact Bridget Psarianos at Trustees for Alaska, 907-233-2011, bpsarianos@trustees.org, or Jeremy Lieb at Earthjustice, 907-792-7104, jlieb@earthjustice.org.

Sincerely,

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I. OVERVIEW OF THE NORTHEASTERN RESERVE

A. THE EXCEPTIONAL VALUES IN THE NORTHEASTERN RESERVE.

The Reserve is home to many of our nation's Arctic treasures, including two large caribou herds, globally significant migratory bird populations, polar bears, extraordinary lakes, ponds, rivers, floodplains, wetlands, and upland areas, and sensitive coastal resources. These values are central to the subsistence livelihood and cultural identify of Alaska Natives and our nation's conservation heritage.

Since 1977, and pursuant to the Naval Petroleum Reserves Production Act (NPRPA), various Secretaries of the Interior have upheld Interior's responsibility to identify and protect Special Areas, including the Teshekpuk Lake, Utukok River Uplands, Colville River,[3] Kasegaluk Lagoon,[4] and Peard Bay[5] Special Areas. The 2013 IAP Record of Decision (2013 IAP ROD) protected approximately 11 million acres within Special Areas, while leaving parts of the Teshekpuk Lake Special Area, Utukok River Uplands Special Area, and much of the lower portion of the Colville River Special Area open for leasing and development. Protecting these, and other undeveloped areas, is consistent with BLM's obligation to provide maximum protection for these areas based on their significant subsistence, recreational, fish and wildlife, historical, and scenic values.[6]

Former Secretary Zinke issued an order in May 2017, which, in relevant part, directed "development of a revised Integrated Activity Plan for the [Reserve] that strikes an appropriate statutory balance of promoting development while protecting surface resources."[7] In June 2020, BLM released its final EIS developed in response to this order; the process concluded with Interior's issuance of the 2020 IAP Record of Decision (2020 IAP ROD) on December 31, 2020. This decision adopted the most development-intensive IAP alternative analyzed in the 2020 final environmental impact statement (EIS) and opened nearly 82 percent of the Reserve to oil and gas leasing, including lands in the especially biologically sensitive Teshekpuk Lake Special Area. In addition to making significantly more lands available for leasing, the 2020 IAP ROD also eliminates the Colville River Special Area and contains other changes that reduce environmental protections in favor of further promoting oil and gas development. The 2020 IAP ROD is subject to multiple lawsuits,[8] and is currently undergoing a review at Interior that is likely to result in the adoption of a different alternative.[9] Interior recently indicated that BLM is proposing to select Alternative A from the 2020 IAP, the no action alternative, "together with certain more

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[3] National Petroleum Reserve in Alaska Designation of Special Areas, 42 Fed. Reg. 28,723 (June 2, 1977).
[4] Designation of Addition to Special Areas in National Petroleum-Alaska; Alaska, 70 Fed. Reg. 9096 (Feb. 24, 2005).
[5] 1 BUREAU OF LAND MGMT., NATIONAL PETROLEUM RESERVE-ALASKA FINAL INTEGRATED ACTIVITY PLAN/ENVIRONMENTAL IMPACT STATEMENT 17 (2012) [hereinafter 2012 IAP Final EIS].
[6] 42 U.S.C. §§ 6504, 6506a(n)(2); 43 C.F.R. § 2361.1(c).
[7] Secretarial Order 3352, *National Petroleum Reserve – Alaska* (May 31, 2017).
[8] *N. Alaska Envtl. Ctr. et al v. Haaland et al*, Case No. 3:20-cv-00207-SLG (D. AK); *Nat'l Audubon Soc'y et al. v. de la Vega et al.,* Case No. 3:20-cv-00206-SLG (D. AK).
[9] BLM could complete its evaluation of the 2020 IAP as soon as January 2022. Principal Deputy Assistant Secretary Land and Minerals Management Laura Daniel-Davis, Memorandum for the Bureau of Land Management re: Evaluation of 2020 NPR-A IAP/EIS and Related Documents for Adequacy (Sept. 3, 2021).

protective threatened and endangered species related lease stipulations and required operating procedures from the 2020 IAP."[10] Because Interior and BLM are currently reconsidering the decisions made in the 2020 IAP ROD, and are poised to adopt a different alternative and potentially different mitigation measures, and because of the impacts that oil development would have on the Reserve's resources, BLM should refrain from allowing Willow and its extensive infrastructure to undermine the protections for Teshekpuk Lake and the Colville River Special Areas, and areas adjacent to them.[11]

The Teshekpuk Lake Special Area was first established in 1977 and is an area of international conservation importance. It is also one of the areas Congress expressly recognized as having significant subsistence, recreational, fish and wildlife, and historical and scenic values, for which BLM is obligated to provide maximum protections.[12] The Teshekpuk Lake Special Area contains one of the most productive wetland complexes in the Arctic and provides vital nesting habitat for hundreds of thousands of migratory birds. The Teshekpuk Lake area, along with the neighboring Smith Bay marine habitat, supports the highest density of shorebirds in the circumpolar Arctic, including threatened spectacled eiders, Steller's eiders, yellow-billed loons, dunlins, and American golden-plovers. This region is also the primary calving grounds and a key foraging and insect-relief area for the Teshekpuk Lake Caribou Herd, an important subsistence resource for communities on the North Slope. This area also contains designated critical habitat for the polar bear, which is listed as threatened under the Endangered Species Act. This Special Area supports a variety of fish, including lake trout, whitefish, Bering cisco, and rainbow smelt, among other species. The 2013 IAP ROD prohibited leasing and non-subsistence permanent infrastructure in much of the Teshekpuk Lake Special Area because of its high conservation and subsistence values.

The Colville River Special Area was designated by the Secretary of the Interior in 1977 to assure maximum protection of its subsistence, wildlife, recreational, and other identified values, such as the unique bluff and riparian habitats associated with the Colville River and its tributaries. In particular, its purpose was to protect the arctic peregrine falcon, which at that time was an endangered species.[13] The Colville River Delta is the largest and most productive river delta in northern Alaska, and the river has been considered an Aquatic Resource of National Importance by the Environmental Protection Agency.[14] The Colville River Special Area lies along that river and two of its larger tributaries, the Kogosukruk and Kikiakrorak rivers, encompass 2.44 million acres.[15] The cliffs along the Colville River provide critical nesting sites and adjacent hunting areas for peregrine falcons, gyrfalcons, golden eagles and rough-legged hawks. In recognition of the importance of this area, the 2013 IAP ROD expanded the protections for the Colville Delta by prohibiting permanent oil and gas facilities, including gravel

[10] Bureau of Land Management Director Tracy Stone-Manning, Memorandum for Principal Deputy Assistant Secretary Land and Minerals Management re: Evaluation of 2020 NPR-A IAP/EIS and Related Documents for Adequacy (Jan. 7, 2022).
[11] The 2020 IAP ROD issued under the Trump administration improperly reduced or eliminated many of the protections for these areas, including entirely eliminating the Colville River Special Area, as described below.
[12] 42 U.S.C. § 6504(a).
[13] IAP Final EIS, vol. 1, 17.
[14] *Id*.
[15] *Id*.

pads, roads, airstrips, and pipelines within two miles of the Colville, Kikiakrorak, and Kogosukruk Rivers.[16]

B. HISTORY OF BLM MANAGEMENT AND DEVELOPMENT IN THE NORTHEASTERN RESERVE.

BLM adopted the first management plan covering the entire Reserve in 2013.[17] The 2013 IAP established broad directives for how BLM would manage the resources and values in the Reserve. As part of the process for adopting the 2013 IAP, BLM prepared an EIS to look at various management and land-allocation alternatives for the Reserve.

In issuing the 2013 IAP ROD, BLM made approximately 11.8-million acres — roughly 52% — of the Reserve available for oil and gas leasing and development subject to a list of stipulations and best management practices. The decision made a large majority of lands within Special Areas unavailable for oil and gas leasing given the important surface resources and uses in these areas.[18] The decision also prohibited new non-subsistence permanent infrastructure in much of these unavailable areas, in particular "1.1 million acres encompass[ing] Teshekpuk Lake and lands surrounding the lake, habitat of special importance for nesting, breeding, and molting waterfowl and for the Teshekpuk Lake Caribou Herd."[19]

While undertaking its prior NEPA analysis for Willow, the Trump administration moved ahead with its plan to revise the IAP for the Reserve. As described above, the 2020 IAP ROD improperly minimized or eliminated Special Area boundaries and opened an expansive area — nearly 82% of the Reserve — to leasing. That decision is currently being reviewed by Interior with an eye toward selecting the no action alternative and reinstating the 2013 IAP.

Over the course of just seven years, BLM has approved development projects at a staggering pace across the Reserve. In 2015, BLM approved the first development on federal lands in the Reserve — the Greater Mooses Tooth 1 (GMT-1) development project. GMT-1 included a drilling pad and road that would extend ConocoPhillips oil and gas infrastructure at the existing Alpine field further west into the Reserve. In a stark departure from its earlier analysis in the 2013 IAP, BLM determined in the GMT-1 final EIS that there would be significant impacts to subsistence users from the development. To address these significant impacts, BLM required compensatory mitigation funding of $8 million from ConocoPhillips to support development of a regional mitigation strategy (RMS) for the northeastern Reserve and to address the major impacts to subsistence. BLM intended the RMS to serve as a roadmap for mitigating impacts from both GMT-1 and future oil and gas projects in the northeastern region of the Reserve, by incorporating additional avoidance, minimization, and compensatory mitigation measures into future decisions.

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[16] BUREAU OF LAND MGMT., NATIONAL PETROLEUM RESERVE-ALASKA FINAL INTEGRATED ACTIVITY PLAN/ENVIRONMENTAL IMPACT STATEMENT RECORD OF DECISION, 73–74 Lease Stipulation/Best Management Practice K-1(a), (d) (2013) [hereinafter 2013 IAP ROD].
[17] *See generally* 2013 IAP ROD.
[18] 2013 IAP ROD at 2.
[19] *Id*.

In 2016, only one year after approving GMT-1, BLM began the scoping process for Greater Mooses Tooth 2 (GMT-2). BLM issued the ROD approving GMT-2 in October 2018, and released the final RMS along with the final EIS for that project. Willow is designed to be constructed in such a way that it will connect back to ConocoPhillips' existing infrastructure via the roads and pipeline route at the GMT-2 drillsite. In August 2018, BLM began the scoping process for Willow, which would push develop even further west into the Reserve.[20] Following a rushed NEPA process that included a supplemental EIS to consider an additional alternative proposed by ConocoPhillips, BLM issued its final EIS in August 2020 and approved the project in a ROD on October 27, 2020.

As previously proposed and approved, Willow would involve the construction, operation, and maintenance of a massive oil and gas development project that includes a new central processing facility within the Reserve and a related infrastructure pad, up to five drill pads with up to fifty wells on each pad, access and infield roads, an airstrip, pipelines, a gravel mine, and an ice bridge over the Colville River to support module delivery via sealift barges. It would also involve construction of additional drill sites in the near future. ConocoPhillips, and BLM's final EIS for the project, estimates that the Willow discovery may hold upwards of 586 million barrels of oil.[21] Willow would produce up to 200,000 barrels of oil per day for at least 30 years, adding 260 million metric tons of CO_2E to the atmosphere. Under ConocoPhillips' proposal, portions of Willow's infrastructure and many industrial activities would be within the boundaries of the Teshekpuk Lake and Colville River Special Areas.

Two lawsuits challenged the federal agencies' approvals for Willow and the Ninth Circuit Court of Appeals enjoined the project from moving forward while the litigation was pending.[22] In August 2021, the U.S. District Court vacated BLM and the U.S. Fish and Wildlife Service's (FWS) approvals due to serious errors and deficiencies in the agencies' analyses under NEPA and the Endangered Species Act (ESA), respectively.[23] The Court's decision creates an obligation and opportunity for BLM to fully reconsider Willow. BLM should not rush this process.

II. THE AGENCIES MUST ADHERE TO THEIR LEGAL MANDATES AND PROTECT THE RESERVE'S NATURAL VALUES.

The Reserve is governed in part by the NPRPA,[24] which allows for the exploration and development of oil and gas resources, but also mandates the protection of the Reserve's extraordinary subsistence, recreational, fish, wildlife, historical, and scenic values. BLM must

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[20] Press Release, ConocoPhillips Provides Strong Outlook for Its Alaska Business; Announces Discovered Resource of 0.5 – 1.1 Billion Barrels Gross from Recent Exploration Activity with 75 Percent of Prospective Acreage Yet to Be Drilled (July 16, 2018), *available at* http://static.conocophillips.com/files/resources/nr-corp-alaska-ops-update-final.pdf.

[21] BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE WILLOW MASTER DEVELOPMENT PLAN, at 1 (Aug. 2020) [hereinafter Willow FEIS].

[22] SILA Order at 3, 5; *Sovereign Iñupiat for a Living Arctic v. Bureau of Land Mgmt.*, Case Nos. 21-35085, 21-35095, 2021 WL 4228689 *1-2 (9th Cir. Feb. 13, 2021).

[23] *See* SILA Order at *86–87.

[24] 42 U.S.C. § 6501, *et seq*.

not neglect its protective mandate when it considers whether or how to approve Willow in the supplemental EIS.

BLM must consider ConocoPhillips' Willow proposal consistent with its authority and obligations under the NPRPA. BLM has broad authority under the NPRPA to deny or require substantial changes to oil and gas proposals that would harm to the Reserve's environment or people. Additionally, Congress instructed the Secretary of the Interior to designate Special Areas containing "significant subsistence, recreational, fish and wildlife, or historical or scenic values."[25] Following that mandate, the Secretary designated multiple Special Areas — including the Teshekpuk Lake Special Area and Colville River Special Area. BLM is obligated to provide "maximum protection" for the environment, fish and wildlife, and historical and scenic values in those areas.[26]

BLM failed to fulfill its mandate and broad authority to protect the Reserve's environment and people in its previous analysis of the Willow project. As the district court explained, BLM's assertion that it lacked authority to limit ConocoPhillips' activities was "inconsistent with [the agency's] statutory responsibility to mitigate adverse effects."[27] The NPRPA provides that BLM "*shall* include or provide for such conditions, restrictions, and prohibitions" on activities within the Reserve as it determines necessary to protect the Reserve's surface resources.[28] The statute places no limitation or conditions on this authority. Indeed, BLM has considerable discretion to suspend all operations on existing leases or units.[29] Under the NPRPA, BLM may suspend operations and production "in the interest of conservation of natural resources" or to mitigate "reasonably foreseeable and significantly adverse effects on surface resources."[30] BLM also has authority to deny or delay an application for permit to drill (APD),[31] and ConocoPhillips' leases reflect BLM's authority to condition, restrict, or prohibit activities.[32] This authority should be rectified in the SEIS process.

BLM also did not comply with its mandate to provide maximum protection to Special Areas in its previous process. As the District Court found, BLM improperly failed to consider alternatives in the prior EIS that protected the values of Teshekpuk Lake Special Area (TLSA):

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[25] *Id*. § 6504(a).
[26] *Id.*
[27] SILA Order at *32.
[28] 42 U.S.C. § 6506a(b) (emphasis added).
[29] *Id*. § 6506a(k)(2) ("The Secretary may direct or assent to the suspension of operations and production on any lease or unit.").
[30] 43 C.F.R. § 3135.2(a)(1), (3).
[31] *Id*. § 3162.3-1(h)(2) (BLM has authority to "[r]eturn the application and advise the applicant for the reasons for disapproval"); *id.* § 3162.3-1(h)(3) (stating that BLM can respond to an APD by advising the applicant of the reasons why final action will be delayed along with the date such final action can be expected); *see also N. Alaska Evt'l Ctr. v. Kempthorne*, 457 F.3d 969, 976 (9th Cir. 2006) (assuming government could deny a specific application altogether if adequate mitigation measures are not available).
[32] *See* U.S. Department of the Interior, Offer to Lease and Lease for Oil and Gas, Form 3100-11 (Oct. 2008) § 6 (BLM can require additional reasonable mitigation measures as conditions of approval to "minimize[] adverse impacts to the land, air, and water, to cultural biological, visual, and other resources, and to other land uses or users"); *id*. § 4 ("Lessor reserves the right to specify rates of development and production in the public interest.").

> The TLSA is not "only an administrative boundary." Congress specifically directed the agency to ensure that oil and gas activity in the TLSA "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 EIS's assertion that Project impacts may not "necessarily be greater within the TLSA than they would outside the TLSA" entirely distorts this Congressional directive.[33]

Because "BLM failed to consider the statutory directive that 'maximum protection' be given to surface values within the TLSA, it acted contrary to law."[34] BLM is also obligated to ensure the Colville River Special Area is provided with maximum protections. There was a lack of site-specific baseline and other information about ConocoPhillips' proposed Colville River crossing as part of the prior approval process, including if there will be grounded ice at the time of the crossing, if there will be free-water pockets, how large those pockets will be, and the extent to which the area may be used by overwintering fish. BLM needs to obtain additional information about that proposal and ensure that the area is adequately protected. BLM must ensure that any potential new approvals of the Willow project will provide for maximum protection of these Special Areas and other surface resources consistent with the NPRPA.

BLM must also fully comply with NEPA for this SEIS process. NEPA is "our basic national charter for protection of the environment."[35] NEPA's analysis and disclosure goals are two-fold: (1) to ensure informed agency decision making, and (2) to ensure public involvement.[36] NEPA requires that federal agencies prepare a detailed EIS for any major Federal action that may significantly affect the quality of the human environment.[37] BLM's NEPA responsibilities for purposes of preparing this SEIS are more fully described below in Section III, and include consideration of the purpose and need for BLM's action, meaningful alternatives, direct indirect and cumulative effects, and the adequacy and effectiveness of mitigation.

In addition to fulfilling its NEPA and NPRPA obligations in the Willow SEIS, BLM must describe how the project complies with all laws and policies meant to ensure proper management of public lands and wildlife, particularly the ESA, the Marine Mammal Protection Act (MMPA), and the Federal Land Policy and Management Act (FLPMA) and their regulations, as discussed below. BLM must also describe how Willow would comply with other applicable laws including the Alaska National Interest Lands Conservation Act (ANILCA) and its regulations. BLM should also describe whether and how the Willow Plan SEIS will be used to

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[33] SILA Order at *33.
[34] *Id*. at *35.
[35] 40 C.F.R. § 1500.1(a).
[36] *Robertson v. Methow Valley Citizens Council* (*Methow Valley*), 490 U.S. 332, 349 (1989); *Neighbors of Cuddy Mountain v. Alexander*, 303 F.3d 1059, 1063 (9th Cir. 2002); *see also Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998).
[37] 42 U.S.C. § 4332(C); 40 C.F.R. § 1508.18(b)(4).

assist other agencies with permitting authority for the project to comply with their own statutory obligations, namely the Clean Water Act (CWA).

Several species protected under the ESA[38] inhabit the Reserve and its nearshore waters, including bowhead whales, ringed and bearded seals, spectacled eiders, Steller's eiders, and polar bears.[39] Under the ESA, BLM has a duty to ensure "that any action authorized, funded, or carried out by [BLM] is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical habitat]."[40] BLM cannot authorize any action that may affect a protected species or its designated critical habitat without first consulting with either FWS for polar bears and eiders, or the National Marine Fisheries Service (NMFS) for whales and seals.

The District Court found that FWS's consultation and approvals for Willow violated the ESA in several important respects that must be rectified. In consulting on impacts to polar bears, FWS improperly relied on future mitigation measures enacted under the MMPA in making its no-jeopardy and no-adverse-habitat modification determinations;[41] FWS arbitrarily quantified non-lethal take of bears from disturbance to be zero, despite finding that disturbance could result in "biologically significant" impacts;[42] the incidental take statement for the project failed to authorize take by hazing that was reasonably certain to occur, and FWS impermissibly conflated Willow's ESA take authorization with the MMPA process.[43]

Interior, acting through BLM and FWS, must address how it will complete consultation for polar bears in a manner that complies with the ESA for Willow. BLM must also ensure that consultation considers not only the impacts to ESA-listed species and their federally designated habitat from noise, traffic, oil spills, hazing, and other local impacts associated with the construction and operation of the Willow project, but also the impacts of the GHG emissions caused by the project on species threatened by climate change.

Many marine mammals protected by the MMPA[44] use coastal and nearshore waters adjacent to the Reserve, particularly polar bears.[45] Under the MMPA, it is unlawful to "take," or "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal."[46] An activity that has the potential to incidentally take a small number of marine mammals may be permitted by regulation if it will have no more than a "negligible impact on the species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for

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[38] 16 U.S.C. § 1531–1544.
[39] *See* 2012 IAP Final EIS, vol. 1, 316, 318–28 338–50; *see also* 35 Fed. Reg. 18319 (Dec. 2, 1970) (bowhead whale listing); 77 Fed. Reg. 76706 (Dec. 28, 2012) (ringed seal listing); 77 Fed. Reg. 76740 (Dec. 28, 2012) (bearded seal listing); 73 Fed. Reg. 28212 (May 15, 2008) (polar bear listing); 58 Fed. Reg. 27474 (May 10, 1993) (spectacled eider listing).
[40] 16 U.S.C. § 1536(a)(2).
[41] SILA Order at *72, *86–87.
[42] *Id*. at *81–82.
[43] *Id.* at *82–84.
[44] 16 U.S.C. §§ 1361–1423(h).
[45] *See* 2012 IAP Final EIS, vol. 1, 338–50.
[46] 16 U.S.C. §§ 1362(13), 1372(a).

taking for subsistence uses."[47] ConocoPhillips' onshore and offshore activities, including barging of its proposed modules, will likely result in the taking of protected marine mammals, and GHG emissions from Willow will exacerbate climate change impacts that are already being felt by marine mammals. BLM should not authorize any activities for Willow until FWS and NMFS have thoroughly analyzed the impacts to marine mammals and determined whether the MMPA permits them to authorize the take of marine mammals that will occur as a result of ConocoPhillips' activities. If take is anticipated, it must be authorized under the MMPA before FWS or NMFS may permit such take under the ESA.[48] In addition to FWS and NMFS's assessments, NEPA requires BLM to independently analyze potential impacts to marine mammals from ConocoPhillips' proposed activities.

Separately, the requirements for BLM under FLPMA are clear: BLM must not issue a right-of-way that will do unnecessary damage to the environment.[49] BLM is obligated to carefully consider the requirements in FLPMA and include terms and conditions for the Willow right-of-way that: protect federal property and economic interests; efficiently manage the right-of-way and lands adjacent to it; protect the interests of people living in the area who rely on fish, wildlife, and biotic resources for their subsistence lifestyle; locate the right-of-way along the least environmentally damaging route; and otherwise protect the public interest in lands traversed by the right-of-way or adjacent thereto.[50] The requirement that BLM "protect the public interest in the lands traversed by the right-of way or adjacent thereto" makes it clear that BLM is responsible for protecting environmental resources beyond the immediate project area and values outside the Reserve's boundaries, including the climate. Impacts to subsistence in nearby communities such as Nuiqsut and Anaktuvuk Pass, negative impacts to wetlands in the region, and downstream hydrological impacts from water crossings must be fully analyzed in determining whether granting a right-of-way for Willow is in the public interest.

We have additional concerns about the legality of the prior right-of-way BLM issued for this project, as it was issued under the Mineral Leasing Act (MLA).[51] The Reserve is withdrawn from the MLA[52] and the agency does not have statutory authority to issue a right-of-way for Willow pursuant to the MLA. We strongly urge Interior to review the legality of its decision to issue the prior right-of-way for Willow under the MLA. If BLM ultimately issues a right-of-way to ConocoPhillips' for Willow, it should do so under its FLPMA authority and ensure the agency's statutory obligations are met under that statute.

Moreover, BLM must also fully ensure that any approvals of Willow fully comply with ANILCA section 810 by conducting a comprehensive analysis of Willow's impacts to subsistence. Title VIII of ANILCA recognizes that subsistence uses and the continuation of subsistence opportunities are in the public interest and provides a framework to consider and protect subsistence uses in agency decision-making processes.[53] Willow is located in one of

[47] *Id*. § 1371(a)(5).
[48] SILA Order at *83.
[49] *See generally* 43 U.S.C. §§ 1732, 1764.
[50] *Id*. § 1765(b).
[51] BLM, Arctic District Office, Right-of-Way Grant (Jan. 19, 2021) at 1 (attached).
[52] 42 U.S.C. § 6502; *see also* H.R. Rep. No. 94-942 (1976), at 20 ("It is the specific intent of this provision that all lands be explicitly excluded from the provisions of the Mineral Leasing Act of 1920").
[53] 16 U.S.C. §§ 3111–3126.

Nuiqsut's last remaining, infrastructure-free areas close in to the community. Other development activities have encircled the community and have already had significant impacts to the community's ability to continue its subsistence way of life. Construction and operation of Willow, which will connect back to and magnify the amount of industrial activity in the region, will adversely affect subsistence resources and will significantly restrict subsistence use even further. BLM should provide a thorough discussion of whether the alternatives considered in the SEIS do, in fact, involve the minimal amount of public lands necessary to accomplish the purpose of the use and a thorough analysis of what steps it anticipates taking to minimize the adverse impacts to subsistence uses and resources, as required by ANILCA section 810.[54]

Additionally, Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill materials into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for infrastructure development (such as roads, pads, and airports) and gravel mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States. The basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment, or (2) the nation's waters would be significantly degraded.[55] The U.S. Army Corps of Engineers' (Corps) regulations state that "[a]ll activities which the applicant plans to undertake which are reasonably related to the same project and for which a [Department of the Army] permit would be required should be included in the same permit application."[56]

Given the prevalence of jurisdictional wetlands throughout the Willow project area, the Corps has broad permitting responsibilities and mitigation obligations related to this project that need to be fully reconsidered in the SEIS and a new permitting process. As described in more detail below, the Court found that the EIS improperly constrained its consideration of alternatives. Because of this, the Corps should rescind the prior 404 permit, require a new application from ConocoPhillips, and assess whether there is a less environmentally damaging practicable alternative that was not fully considered in the prior permitting process. Additionally, both BLM and the Corps should require ConocoPhillips to submit complete, new applications for Willow to clarify what the agencies are collectively considering authorizing for this project. There were significant problems with BLM and the Corps' analysis in the last permitting process. For example, ConocoPhillips continued to make major changes to the project throughout the permitting process and did not submit their 404 permit application until shortly before the release of the first SEIS. The SEIS did not take into account the proposal ConocoPhillips presented in the 404 permit application and did not analyze the full set of changes made to the project throughout the process. BLM made few — if any — changes to update its analysis later in the FEIS to account for those changes and new information. ConocoPhillips also did not apply for the necessary right-of-way or the APDs for Willow until after the adoption of the FEIS, making it unclear throughout the process precisely what BLM was authorizing. The Corps' approval was also inconsistent with what BLM considered and approved in the FEIS and ROD since BLM did not ultimately authorize the BT4 and BT5 pads, but the Corps did. BLM and the Corps need to rectify this disconnect in the new SEIS and in

[54] *Id*. § 3120(a).
[55] *See* 33 U.S.C. § 1344; 40 C.F.R. § 230.10.
[56] 33 C.F.R. § 325.1(d)(2).

what they are requiring from ConocoPhillips to ensure both agencies are evaluating the same version of the project.

There should also be a robust and transparent analysis of needed compensatory mitigation, and close coordination with other federal agencies like the Environmental Protection Agency (EPA) and FWS in determining the appropriate calculation for impacted aquatic resources and associated mitigation debits and credits. In the prior permitting process, the Corps violated the CWA because it lacked sufficient information about the project's design and functions of wetlands in the project area to determine that Willow's effects would not cause significant degradation of aquatic resources. The Corps also lacked information to conclude that all appropriate and practicable steps would be taken to minimize Willow's adverse effects, and failed to ensure ConocoPhillips' proposed mitigation adequately offset impacts — only requiring compensatory mitigation for a small fraction of Willow's footprint.[57] As part of this new process, the Corps should rectify the problems with its previous compensatory mitigation requirements and ensure that Willow's impacts to waters and wetland functions are fully considered and mitigated.

Finally, the State of Alaska and the North Slope Borough will need to issue permits and plan approvals authorizing the Willow Plan's infrastructure and activities. We encourage BLM to include a robust discussion of the approvals and authorizations of other federal, state, and local agencies for Willow. BLM should ensure the SEIS contains necessary information for these agencies to analyze the project pursuant to their individual permitting requirements and statutory mandates.

III. BLM MUST PROPERLY DEFINE THE SCOPE OF THE EIS AND NOT TRUNCATE THE NEPA ANALYSIS.

The purpose of scoping under NEPA is to determine the scale and impacts of the proposed project and the significant issues that will require in-depth analysis in the EIS.[58] The following sections detail a number of BLM's NEPA responsibilities that it must meet when reassessing the Willow project. Revisiting the purpose and need statement and considering reasonable alternatives make preparation of a revised draft EIS a more appropriate choice than a supplement because changes to those fundamental aspects of the EIS will ripple through the various resource analyses. In order to ultimately serve its function and be legally adequate, BLM's NEPA analysis will need to look more like a comprehensive draft EIS than a traditional supplement.

BLM is not limited to addressing only those issues specifically addressed by the Court. Instead, BLM should comprehensively address the numerous flaws in its prior analysis, as identified in prior public comments, as well as to consider new information and ensure that its

[57] EPA raised concerns to the Corps regarding its use of a watershed threshold approach for determining compensatory mitigation in Alaska. U.S. Environmental Protection Agency (EPA), Technical Review of a Threshold-Based Approach for Determining Significant Degradation in Alaska (July 5, 2018). This approach was used in the Corps' prior consideration of Willow.
[58] 40 C.F.R. § 1501.7(a)(2).

analysis and decision is consistent with NEPA and current national policy.[59] For example, the Willow EIS failed to obtain necessary baseline information or adequately assess Willow's impacts on climate, water resources, wetlands, caribou, polar bears, air quality, subsistence, and public health. The prior EIS also failed to fully consider the cumulative impacts of Willow as a hub for future oil and gas activities, both by ConocoPhillips and other oil and gas companies. Westward development spurred by Willow would significantly impact Special Areas and local communities. In sum, BLM is obligated to ensure that it prepares an EIS that fully complies with NEPA and other applicable laws, and should not limit its review to the legal issues identified by the Court.

BLM must apply the same level of NEPA analysis as required under the 1978 NEPA regulations in effect prior to the Council for Environmental Quality's September 2020 revision. The 2020 regulations state that "[a]n agency may apply the regulations in this subchapter to ongoing activities and environmental documents begun before September 14, 2020."[60] As a supplement to the Willow EIS that was undisputedly subject to the 1978 regulations, this should qualify as an "ongoing activity. Moreover, on April 16, 2021, Interior Secretary Deb Haaland issued Secretarial Order No. 3399, directing all Interior bureaus and offices not to apply the 2020 NEPA Rule to change the application or level of NEPA that would apply to a proposed action.[61] This administration has since begun action to restore the regulatory provisions modified in 2020.[62] As such, references in these comments are to the 1978 NEPA regulations because they are the appropriate regulations to apply to the SEIS.

In fully considering Willow and its impacts under NEPA, BLM should do the following:

- revise the purpose and need statement from the prior EIS;
- fully evaluate a No Action Alternative and identify other reasonable alternatives consistent with the need to address the climate crisis, protect biodiversity, and consider environmental justice;
- ensure meaningful involvement in this process by the public and tribal groups;
- obtain missing information and take a hard look at the impacts of this project;
- address the numerous flaws in its previous analysis of Willow's climate impacts consistent with science and current policy;
- fully assess and mitigate impacts to Special Areas;
- analyze Willow's significant cumulative impacts; consider and implement robust and durable mitigation;
- evaluate impacts from hydraulic fracturing;
- fully analyze impacts to the Reserve's sensitive resources and wildlife.

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[59] *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 440 F. Supp. 3d 1, 25–26 (D. D.C. 2020) (rejecting Federal Defendants' argument that scope of the EIS during a remand was limited to the record and issues identified on the remand, and explaining that remand expanded the scope of issues for the agency to consider).
[60] 40 C.F.R. § 1506.13 (2020).
[61] Secretary of the Interior, Order No. 3399, Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process (Apr. 16, 2021) [Secretary of the Interior, Order No. 3399].
[62] National Environmental Policy Act Implementing Regulations Revisions, 86 Fed. Reg. 55,757 (Oct. 7, 2021).

This section evaluates each of these NEPA obligations in turn.

A. THE PURPOSE AND NEED FOR BLM'S ACTION MUST ACCOUNT FOR THE AGENCY'S OBLIGATIONS TO PROTECT RESOURCES.

In a new environmental analysis, BLM should reconsider the purpose and need for its action to properly account for the agency's broad authority and obligation to condition, restrict, and prohibit oil and gas activity as necessary to protect other resources. BLM may not defer to ConocoPhillips' project purpose, nor can it point to ConocoPhillips' rights as a lessee as limiting its own statutory and regulatory obligation to protect other resources.

NEPA's implementing regulations provide that an environmental document must "specify the underlying purpose and need to which the agency is responding in proposing the alternative including the proposed action."[63] This purpose and need inquiry is crucial for a sufficient environmental analysis because "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives."[64] An agency cannot define its objectives in unreasonably narrow terms without violating NEPA.[65] An agency also cannot rely on private interests of the project applicant to draft a narrow purpose statement that restricts the consideration of alternatives.[66] NEPA prevents federal agencies from effectively reducing the discussion of environmentally sound alternatives to a binary choice between granting and denying an application.[67] According to BLM's NEPA Handbook:

> The applicant's purpose and need may provide useful background information, but this description must not be confused with the BLM purpose and need for action. The BLM action triggers the NEPA analysis. It is the BLM purpose and need for action that will dictate the range of alternatives and provide a basis for the rationale for eventual selection of an alternative in a decision.[68]

Thus, BLM should not conflate its purpose and need to be ConocoPhillips' purpose and need.

BLM has clear, statutory obligations to condition or restrict oil and gas activity as it determines necessary to protect other resources and to mitigate adverse environmental effects.[69] Yet, in its previous EIS, BLM ignored these obligations and improperly conflated its federal purpose and need with that of the project applicant. BLM defined the purpose of the project as "construct[ing] the infrastructure necessary to allow the production and transportation to market of federal oil and gas resources under leaseholds in the northeast area of the [Reserve], consistent

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[63] 40 C.F.R. § 1502.13.
[64] *Carmel-By-The-Sea v. U.S. Dep't of Transp.,* 123 F.3d 1142, 1155 (9th Cir. 1997).
[65] *Id.*
[66] *Nat'l Parks & Conservation Ass'n*, 606 F.3d 1058, 1072 (9th Cir. 2010).
[67] *See, e.g.*, *Save Our Cumberland Mountains v. Kempthorne*, 453 F. 3d 334, 345 (6th Cir. 2006).
[68] BUREAU OF LAND MGMT., NATIONAL ENVIRONMENTAL POLICY ACT HANDBOOK H-1790-1, at 35 (2008), https://www.ntc.blm.gov/krc/uploads/366/NEPAHandbook_H-1790_508.pdf.
[69] *Supra* Section II.

with the proponent's federal oil and gas lease and unit obligations."[70] This purpose is unreasonably narrow, conflates BLM's purposes and need for federal action with ConocoPhillips' purpose and need, and is inconsistent with BLM's management obligations in the Reserve.

In its decision vacating BLM's prior decision, the Court rejected a basic assumption underlying BLM's purpose and need statement — that ConocoPhillips's leases grant it "the unfettered right to drill wherever it chooses [and] categorically preclude BLM from considering alternative development scenarios."[71] The Court concluded that BLM's interpretation of its authority was "inconsistent with its own statutory responsibility to mitigate adverse effects on the surface resources."[72]

The Court's decision requires BLM to reconsider the purpose and need statement for the Willow project in any SEIS. BLM must prepare a new purpose and need statement that fully accounts for BLM's management obligations in the Reserve and does not presume that ConocoPhillips is entitled to develop the oil and gas on its leases on the timeline and in the manner dictated by the company. Moreover, the purpose and need statement should account for and be consistent with current national policy to follow science, tackle the climate crisis with the urgency it demands, and advance environmental justice. For example, rather than a purpose to facilitate oil development, the public purpose of the action should be to determine whether and in what manner BLM should approve Willow as proposed by ConocoPhillips.

B. BLM MUST EVALUATE REASONABLE ALTERNATIVES, INCLUDING A NO ACTION ALTERNATIVE.

The Willow SEIS must "[r]igorously explore and objectively evaluate all reasonable alternatives."[73] This alternatives requirement is the heart of the EIS.[74] Alternatives eliminated from detailed study must be discussed.[75] To comply with NEPA, the SEIS must include a discussion of the environmental consequences of the proposed action and alternatives, including the environmental impacts of each alternative, any adverse environmental effects that cannot be avoided if the proposal is implemented, and any irreversible and irretrievable commitments of resources.[76]

BLM should rigorously evaluate and consider adopting the no action alternative. Given the severity of the climate emergency and the administration's commitments to address it,[77] BLM must thoroughly consider, and should select, the no action alternative. The no action alternative would also avoid significant, permanent harm to the community of Nuiqsut, avoiding the myriad environmental justice, public health, sociocultural, and subsistence impacts from

[70] Willow FEIS at ES-1.
[71] SILA Order at *32.
[72] *Id.* (citing 42 U.S.C. § 6506a(b)).
[73] 40 C.F.R. § 1502.14(a).
[74] *Id*. § 1502.14.
[75] *Id*. § 1502.14(a).
[76] *Id*. § 1502.16.
[77] *Infra* Section III E..

Willow. As the District Court and Ninth Circuit found, the harms to Nuiqsut subsistence users from a single season of winter construction activities would have been significant and irreparable.[78] As discussed above, BLM has the authority to adopt the no action alternative for Willow.[79]

Regarding action alternatives, the Court held BLM's prior EIS did not consider reasonable alternatives.[80] The supplemental process must address the fundamental deficiencies identified by the Court. The Court rejected a basic assumption underlying BLM's evaluation of Willow — that ConocoPhillips's leases grant it "the unfettered right to drill wherever it chooses [and] categorically preclude BLM from considering alternative development scenarios."[81] The Court concluded that BLM's interpretation of its authority was "inconsistent with its own statutory responsibility to mitigate adverse effects on the surface resources,"[82] and that BLM failed to consider a reasonable range of alternatives as a result. To comply with the Court's ruling, BLM must develop new alternatives consistent with the agency's broad authority to condition, restrict, and prohibit oil and gas activity as necessary to protect other resources.[83] BLM's previous consideration of slight changes to ConocoPhillips' project description cannot be considered meaningful alternatives. In its alternatives analysis, BLM must analyze meaningfully distinct alternatives to ensure that the agency understands the impacts of the alternatives and how they may differ. In crafting other action alternatives, BLM should maintain a broad vision of how to protect sensitive areas and minimize the project's impacts and footprint.

Importantly, BLM is not limited to the project descriptions described by ConocoPhillips, and is legally obligated to explore and evaluate reasonable alternatives in its SEIS beyond those identified by the project proponent, including those that do not allow ConocoPhillips to extract all possible oil and gas from its leases.[84]

We strongly encourage BLM to analyze a roadless alternative that provides for seasonal drilling, similar to what takes place at Colville Delta 3 (CD-3). Development that avoids drilling during the snow-free months would mitigate industrial disturbance impacts on nesting birds, caribou fall migration, and summer/fall subsistence activities during these critical times. It also would reduce well blowout risks to open water in wetlands and floodplains. Automatic shut-off valve requirements for pipelines, as well as effective leak detection, would greatly reduce the need for a road to address potential pipeline spills. Drill rigs for a seasonal drilling alternative potentially can be shared in the non-drilling months with ConocoPhillips at other pads, or with another operator (e.g., Oil Search on state lands) to greatly reduce operator costs (similar to what was done when constructing the roadless drillpad, CD-3). BLM should not merely rely on

[78] *Sovereign Iñupiat for a Living Arctic*, 2021 WL 4228689 at *2; *Sovereign Iñupiat for a Living Arctic v. Bureau of Land Mgmt.*, Case Nos. 3:20-cv-00290-SLG, 3:20-cv-00308-SLG, 2021 WL 454280 *3-4 (D. AK Feb. 6, 2021) (No. 54).
[79] *Supra* Section II.
[80] SILA Order at *87.
[81] *Id.* at *32.
[82] *Id.* (citing 42 U.S.C. § 6506a(b)).
[83] *See* 42 U.S.C. § 6506a(b).
[84] SILA Order at *35.

ConocoPhillips' assessment of the feasibility of such an alternative as it did in the prior EIS;[85] it must independently examine the viability of a winter-only drilling alternative itself and consider the environmental tradeoffs. Seasonal drilling should be considered an environmentally preferred alternative and analyzed as a possibility for all other alternatives.

If BLM considers a roadless design with year-round operations as with Alpine, it should analyze that alternative separately from the seasonal roadless alternative. Year-round drilling activity is likely to involve additional infrastructure, increased impacts from flights, more noise and pollution, and other impacts that would not necessarily be present for a seasonal roadless alternative. The roadless alternative considered in the final EIS included the construction of a massive gravel airstrip and associated facilities to provide year-round air access, which would make a roadless design more feasible.[86] The final EIS also demonstrated that the number of helicopter flights over Willow's project life were identical under ConocoPhillips' proposed project and Alternative D, where there was no road connection to GMT-2 or Alpine.[87] It also showed that the vast majority of flights to Willow would occur during the summer — such flights could be avoided via seasonal drilling.[88] Thus, BLM should consider an alternative that does not involve a road connection with GMT-2, both under a seasonal drilling and year-round drilling scenario.

BLM should consider an alternative with the following components: winter season only drilling, which eliminates the need for gravel roads, greatly reducing the project footprint and gravel mine size; the use of directional drilling to minimize the number and size of pads;[89] locating infrastructure to avoid the most sensitive areas, particularly eliminating infrastructure within Special Area boundaries and Nuiqsut's subsistence use areas; and minimizing the impacts of aviation on subsistence activities and resources.

BLM should also analyze an alternative that expands the existing facilities at Alpine instead of constructing and operating an entirely new processing facility, which may reduce impacts by taking advantage of existing infrastructure and lessens the potential impacts of Willow serving as a hub for additional development within the Reserve.

BLM should also evaluate an alternative that eliminates the barging of modules, which may eliminate impacts to marine mammals offshore, along the coast, and within the Teshekpuk Lake Special Area, as well as eliminating the need for an ice bridge over the Colville River.

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[85] Willow FEIS, vol. 4 at 19 ("CPAI conducted internal examinations of additional concepts to Project elements that were not further evaluated by the BLM or cooperating agencies as they had been sufficiently described and dismissed based on CPAI's initial evaluation.").
[86] Willow FEIS, vol. 1 at 8.
[87] Willow FEIS, vol. 2, App. D.1 at 64 (Alt A), 91 (Alt D).
[88] *Id*.
[89] Elwood Brehmer, *ConocoPhillips readies Greater Mooses Tooth-2 for startup*, Alaska Journal of Commerce (Nov. 24, 2021) available at: https://www.alaskajournal.com/2021-11-24/conocophillips-readies-greater-mooses-tooth-2-startup ("In 2015, ConocoPhillips agreed with the Alaska Department of Natural Resources to commission a rig that could pull oil from the Fiord West prospect in the company's Alpine oil field without needing additional pads, roads and pipelines.").

BLM should also consider delaying any permitting for Willow in response to the climate emergency, as discussed in more detail below.[90]

BLM should fully evaluate the positive and negative trade-offs of the different alternatives such as road disturbances compared to aircraft disturbances, including mitigating aviation impacts to the maximum extent possible, habitat fragmentation and other road impacts on wildlife, gravel acquisition and transport impacts from roads, water impacts from ice roads and the need to construct a freshwater reservoir, enhanced leak detection, and automatic valve shut-offs reducing the need for roads in pipeline spill response, etc. BLM should also consider if there are different configurations for a seasonal roadless alternative that might reduce the footprint and overall impacts of the alternative.

BLM should also clearly articulate and explain its rationale regarding the scope of the project being analyzed for purposes of the alternatives in the SEIS. The FEIS purported to consider certain drill sites in the future as cumulative impacts — specifically, for Greater Willow, ConocoPhillips' planned expansion that would add two adjacent drill sites to Willow. The agencies had information on these drill sites that may have been sufficient to analyze them as an alternative, including the proposed site locations, estimates of production amounts, and timing of construction (as soon as six years). In fact, BLM initially included the drill sites in the agencies' consideration of alternatives. To the extent that ConocoPhillips intends to develop these drill sites, they should be evaluated among the alternatives so that these impacts can be understood in conjunction with the entirety of the project and so that less impactful alternatives and economies of scale may be considered for all of ConocoPhillips' planned development. Additionally, in its ROD, BLM did not authorize the BT-4 and BT-5 pads, despite having analyzed those as part of the project and alternatives, and stated those sites may be authorized at a future time after a to-be-determined future process. BLM is obligated under NEPA to consider connected and similar actions[91] — not solely the project components ConocoPhillips' requests be considered.[92] Moreover, ConocoPhillips has a history of piecemealing its applications to conceal the full breadth of impacts of its projects, as demonstrated by the fact it applied for GMT-1 shortly after permitting was complete for CD-5, and GMT-2 shortly after the GMT-1 ROD. BLM cannot arbitrarily deem certain future drill sites as alternatives components and others as possible cumulative effects when sufficient information exists to evaluate them all now. The SEIS must explain what components of the project and ConocoPhillips' expected development are being considered through this process and how the BLM's approach to alternatives complies with NEPA.

While on the one hand BLM should be clear about the true scope of Willow and should not allow Conoco to piecemeal its proposal, BLM should also consider an alternative which would not authorize ConocoPhillips' entire proposal (e.g., some drillsites but not others) in light of the potentially significant impacts to subsistence and other resources resulting from such a massive project. For example, BLM should consider a more protective alternative that eliminates

[90] *See supra* Section III. E.
[91] 40 C.F.R. §§ 1508.25(a)(1), (3).
[92] BLM cannot reasonably justify foregoing consideration of certain pads on the basis that ConocoPhillips' has not applied for APDs for such pads because ConocoPhillips has not, to our knowledge, applied for APDs related to Willow at this time.

BT-4 and BT-5 and restricts the footprint of what can ultimately be authorized for Willow, including Greater Willow. BLM has the authority and obligation to consider a reduced footprint to minimize impacts from all of the development planned for Willow.

Furthermore, BLM should consult with the community of Nuiqsut to consider a project design that will have the least impact on subsistence in the region.[93]

C. BLM MUST ENSURE ROBUST PUBLIC PARTICIPATION AND TRIBAL INVOLVEMENT.

NEPA is designed to foster informed and transparent decision-making.[94] To achieve NEPA's goal of ensuring public participation, the statute requires federal agencies to "[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment."[95] "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."[96] BLM must ensure that the proposed administrative process allows for robust public participation by the interested public, local communities, and tribal entities.[97]

1. *BLM must provide a full analysis of impacts from Willow & allow adequate time for public review.*

We are concerned with the lack of transparency and timing of BLM's process to date. Rather than encouraging and facilitating public involvement and scrutiny, as NEPA requires, BLM's prior process to approve Willow was confusing and suppressed public engagement. Such an approach should not be repeated for this supplemental process.

For example, the BLM's draft EIS, released in August 2019, failed to comply with NEPA in multiple respects. Groups' comments on the deficiencies in the draft EIS are still relevant and were never adequately addressed; we incorporate those comments and concerns by reference.[98] Groups pointed out that BLM's draft EIS was so deficient that the agency needed to substantially revise and re-release it for public comment. Groups specifically explained that BLM failed to consider a reasonable range of alternatives, failed to acknowledge and address considerable missing information, failed to adequately analyze the project's direct, indirect and cumulative impacts, and failed to properly evaluate mitigation measures.

Rather than revise its draft EIS to address these and other critical flaws, BLM issued a narrow supplement to address some of the changes to the proposed project at the request of ConocoPhillips. In addition to the fact that the supplemental draft EIS suffered from the same legal and technical shortcomings as the draft EIS, BLM released the document for public

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[93] This is required by ANILCA section 810. *See supra* Section II.
[94] *See* 40 C.F.R. § 1500.1; *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 349.
[95] 40 C.F.R. § 1500.2(d).
[96] *Id.* § 1500.1(b).
[97] *Id.* § 1503.1(a)(4).
[98] *See* Alaska Wilderness League, *et al.*, Comments on Willow Master Development Plan Draft Environmental Impact Statement (No. DOI-BLM-AK-0000-2018-0004-EIS) (Oct. 29, 2019) [hereinafter Coalition DEIS Comments].

comment in March 2020, during the initial stages of the COVID-19 pandemic.[99] Groups requested multiple times that the public comment period be suspended to allow for appropriate public engagement and oversight as required by law. BLM ignored these reasonable requests, and moved ahead with a short public comment period that did not allow for meaningful public input. BLM also held virtual meetings that constrained public participation and gave the agency overwhelming power to determine who could speak and which questions were addressed. For example, participants in Nuiqsut who expressed opposition to Willow were muted during BLM's virtual meetings. This was inappropriate and against the spirit of public participation.[100]

Given the need for BLM to analyze new alternatives, any new EIS must be robust and cover the full range of impacts from an oil and gas program. As noted earlier, the prior EIS contained significant information gaps that deprived the public of the ability to meaningfully understand baseline conditions and Willow's likely impacts. Those information gaps must be filled and analyzed as part of the SEIS. We caution the agency in using any prior content, given the significant flaws and gaps in that analysis. To the extent BLM includes content from the prior EIS, language should be reproduced entirely rather than by reference to avoid the need to review multiple documents.

Moreover, BLM's timeframes for review of the SEIS must allow for meaningful public involvement. We are concerned that BLM's decision to forgo a formal scoping period, may indicate that the agency does not intend to allow time for public involvement in the SEIS process. Ensuring that the public has sufficient time to receive and review all of the documents and understand their relationship to what is being proposed is essential to the public's ability to analyze and provide meaningful comments. The State of Alaska, a cooperating agency in this process, has indicated that BLM plans to issue a ROD approving Willow by the end of this year to allow for construction during the first quarter of 2023.[101] Rushing the analysis and public review is not consistent with BLM's obligations when considering an issue as important, controversial, and destructive as Willow.

As a result of BLM's failure to ensure meaningful public participation in the prior process for Willow, the EIS was deeply flawed. Those missteps should not be repeated in the process for this SEIS. BLM should conduct a full analysis and allow adequate time for careful consideration and commenting by the public.

Additionally, the Reserve's IAP is currently under review and reinstatement of the 2013 IAP — with significant implications for Willow — is likely. BLM should wait until it has concluded its review of the 2020 IAP before beginning the Willow supplemental process so it is clear what measures apply to this decision.[102] The decisions made in the IAP will have

[99] BLM, Willow Master Development Plan Supplement to the Draft Environmental Impact Statement (Mar. 20, 2020).
[100] *See* Audubon Alaska, *et al.*, Problems with the virtual public meetings held on the Willow Master Development Plan Supplement to the Draft Environmental Impact Statement (May 8, 2020).
[101] State of Alaska, Senate Finance Committee Fall 2021 Production Forecast (Jan. 19, 2022) slide 7, *available at* http://www.akleg.gov/basis/get_documents.asp?session=32&docid=77782.
[102] A decision to reinstate the 2013 IAP is not alone sufficient to align the Reserve's management with the administration's goals regarding climate, biodiversity, and environmental justice. We encourage DOI and BLM to not to finalize its Willow approvals until it undertakes a new management direction in the Reserve consistent with these goals.

significant implications for Willow's direct, indirect, and cumulative impacts because the IAP determines the likely extent of potential future development in the Reserve, determines the boundaries of Special Areas, and affects the applicability of various mitigation measures. There is no reason why BLM must supplement the Willow EIS now, and cannot wait until a decision is made on the 2020 IAP. The fact that BLM is reconsidering its decision on the 2020 IAP while simultaneously supplementing the Willow EIS is confusing, inappropriate, and unnecessary.

Finally, BLM's process for preparing a SEIS is premature. We understand that ConocoPhillips has not reapplied for the right-of-way permits or for the APDs vacated by the Court. Nonetheless, BLM is moving ahead with a supplemental NEPA analysis. It is unclear what BLM will be analyzing and potentially approving when permit applications have yet to be submitted to the agency. We are not aware of any authority permitting BLM to undertake a NEPA analysis based on industry interest when permit applications have not yet been submitted. **The fact that the Court remanded the decision to BLM does not change this; the agency does not need to act on remand until it has the necessary applications from the project proponents**. BLM should begin the scoping process after ConocoPhillips submits new, complete applications.

2. BLM must fulfill its government-to-government consultation obligations.

Federal regulations, BLM policy, and FLPMA all require the agency to coordinate planning with affected Indian Tribes. In interpreting NEPA, the Council on Environmental Quality (CEQ) instructed federal agencies to involve tribes early in planning processes that are likely to affect tribal interests.[103] BLM's NEPA Manual[104] and Land Use Planning Handbook[105] further describe the agency's duty to tribes. BLM has also adopted robust and detailed guidance on involving tribes in BLM planning "to help assure (1) that federally recognized tribal governments and Native American individuals, whose traditional uses of public land might be affected by a proposed BLM action, will have sufficient opportunity to contribute to the decision, and (2) that the decision maker will give tribal concerns proper consideration."[106] FLPMA requires coordinating BLM planning and resource management with tribes and tribal land resource management programs, where appropriate and consistent with federal law.[107]

Interior and BLM must also adhere to the requirements found in Executive Order 13175, Consultation and Coordination with Indian Tribal Governments.[108] On January 26, 2021, the President issued a "Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships" which seeks to prioritize regular, meaningful, and robust federal consultation with Tribal Nations and reaffirms and relies upon a similar Obama-era policy and Executive Order 13175. Interior also recently released a plan to improve Tribal consultations consistent with these

[103] 40 C.F.R. § 1501.7(a)(1).
[104] BUREAU OF LAND MANAGEMENT, BLM LAND USE PLANNING MANUAL (1601) (2000).
[105] BUREAU OF LAND MANAGEMENT., LAND USE PLANNING HANDBOOK (H-1601-1) (2005).
[106] BUREAU OF LAND MANAGEMENT, GENERAL PROCEDURAL GUIDANCE FOR NATIVE AMERICAN CONSULTATION (H-8120-1) (2004) at I-1.
[107] 43 U.S.C. § 1712(b), (c)(9).
[108] *See* Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (Nov. 6, 2000).

Executive Orders.[109] The goals and policies outlines in these Orders and Interior's plan should be followed for this SEIS process.

It is critically important to honor the government-to-government relationship with all tribal entities that may be affected by Willow, meaning all tribes that rely upon the northeastern Reserve's resources for subsistence, even if the tribe or tribal members are geographically distant from the project area. In Alaska, subsistence use regions span large geographic areas and subsistence resources include many migratory species like caribou, marine mammals, and waterfowl, as well as extensive food-sharing networks. Interior and BLM need to engage tribes and tribal members in all future steps the agencies plan to take, and ensure effective communication and informed Federal decision making that takes tribal concerns into consideration. Moreover, BLM should accommodate requests for additional time to comment to ensure that tribal entities are able to fully engage in this important process. The reality in Alaska is that subsistence and other activities may make it difficult for individuals to fully participate and engage during short comment periods and during certain times of the year. BLM should also grant any additional requests by affected tribes for cooperating agency status under NEPA.[110] Tribes have significant special expertise that makes them particularly suited to serve as cooperating agencies.

Likewise, Interior should contact and hold hearings for scoping and on the draft SEIS in all villages that desire a hearing, whether virtual or in-person depending upon the timing of such meetings and community preferences in light of COVID-19. Limiting public participation and public comment to only the submission of written comments may unfairly exclude and limit the ability of tribal entities and individuals to fully participate in this process, as some individuals such as elders may be limited in their ability to provide written comments or even verbal comments in the absence of a translator. However, BLM must address the technical issues and other problems that limited public participation in past virtual meetings prior to holding any future virtual event.

D. BLM MUST ENSURE IT HAS INFORMATION CRITICAL TO EVALUATE IMPACTS AND MUST CONDUCT BASELINE STUDIES.

Federal agencies "must use scoping to engage State, local and tribal governments and the public in the early identification of concerns, potential impacts, relevant effects of past actions and possible alternative actions."[111] For the purpose of evaluating significant impacts in the EIS, if there is incomplete information relevant to reasonably foreseeable significant adverse impacts and the information is "essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant," the information must be included in the EIS.[112] This means that, for Willow, BLM must obtain substantially more data about the region and information on the project and its impacts to properly conduct its NEPA analysis and provide adequate information to the public about the proposal.

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[109] *See* Department of Interior, A Detailed Plan for Improving Interior's Implementation of E.O. 13175.
[110] *See* 40 C.F.R. § 1501.6; 43 C.F.R. § 1601.0-5(d)(2).
[111] 43 C.F.R. § 46.235(a).
[112] 40 C.F.R. § 1502.22(a).

An EIS must include discussions of the direct, indirect, and cumulative effects of the proposed project on the human environment, as well as the means to mitigate adverse environmental impacts.[113] The effects and impacts to be analyzed include ecological, aesthetic, historical, cultural, economic, social, and health impacts.[114] Direct effects are those that are caused by the project and that occur in the same time and place.[115] Indirect effects are those that are somewhat removed in time or distance from the project, but are nonetheless reasonably foreseeable.[116] Having complete information about the project and site-specific baseline information is crucial to the agency's ability to adequately analyze and mitigate impacts.

1. BLM Must Ensure It Has Complete Information About the Project.

As a threshold matter, BLM and the Corps need to ensure they have complete applications and site-specific information about what ConocoPhillips is proposing for this project. As discussed above, ConocoPhillips repeatedly changed its proposal and the location of project elements throughout the prior environmental review process. ConocoPhillips also did not submit its permit application to the Corps until right before the release of the prior SEIS and did not submit its APDs and right-of-way application until after the completion of the FEIS. The shifting project proposal and lack of clarity in the prior process made it wholly unclear what ConocoPhillips was proposing and what the agencies were authorizing. This also led to the agencies issuing inconsistent decisions, with the Corps, but not BLM, approving the BT-4 and BT-5 pads. The agencies must have complete, site-specific information about the project to ensure they are able to adequately analyze impacts.

ConocoPhillips must provide site-specific specific information for Willow including, but not limited to, its exact location, power generation, vehicle and aircraft traffic patterns, processing activities, and infrastructure needs. BLM needs this information not only to adequately evaluate ConocoPhillips' proposal, but also to evaluate potential alternatives to that proposal. For example, the FEIS contained very little information on the length or location of the roads, or the amount of gravel needed. Gravel infrastructure has major impacts on hydrology, vegetation, and permafrost conditions. Any new roads will increase habitat fragmentation in this sensitive area, and further encircle the community of Nuiqsut. The length of the roads will dictate the amount of gravel needed for construction, and the locations of roads and drill sites will affect the necessary maintenance of roads. The final EIS also greatly varied its description of vehicle traffic from the draft EIS. BLM should address those inconsistencies in order to meaningfully analyze the likely impacts of vehicle traffic.

The FEIS also lacked detail on the project's proposed bridges and other water crossings, including culverts and the proposed ice bridge over the Colville River. ConocoPhillips' project designs were based on "typical" culverts and road sections, but failed to take into account site-specific conditions that could alter the effectiveness and design of those measures. This is particularly troubling, given that the FEIS acknowledged there was a significant chance the culverts would fail or not function properly during their lifetime and would cause alterations to

[113] *Id.* §§ 1502.16, 1508.25(c).
[114] *Id*. § 1508.8.
[115] *Id*. § 1508.8(a).
[116] *Id*. § 1508.8(b).

surface flows and natural drainage patterns. BLM and the Corps need additional, site-specific information about the proposed designs and aquatic resources to adequately analyze and mitigate those impacts. The FEIS's prior analysis of the impacts to aquatic resources was so generalized as to be completely meaningless and reflects the agencies lack of site-specific information and baseline conditions necessary to engage in an adequate analysis. This needs to be rectified in the SEIS.

BLM also did not adequately consider impacts from future drill sites such as Greater Willow 1 or 2. BLM must be clear at the outset of this process exactly what it is analyzing and whether such project components would be approved in the future or are properly part of this proposal. BLM should not consider as part of ConocoPhillips' proposed action only those future drill pads that ConocoPhillips requested be evaluated. BLM is responsible for defining the scope of the EIS in a non-arbitrary manner. ConocoPhillips must provide specific information on future drill sites contemplated for Willow in order for BLM to properly evaluate the environmental and social impacts of this project. BLM should consider whether to analyze Greater Willow as a connected or similar action in the Willow SEIS, to better consider the direct, indirect, and cumulative impacts from those projects and to ensure that it fully considers potential alternatives that might reduce those impacts.[117]

The pace of development will also influence the intensity and scope of the impacts. The FEIS provided only an estimate for the number of winter seasons which will be needed for construction, but significantly more information is needed about ConocoPhillips' anticipated plans to evaluate the likely impacts. For instance, if certain drill sites are constructed first and are fully operational by the time each new drill site is developed, resulting impacts may be more gradual than if ConocoPhillips plans to complete construction and develop all drill sites at once.

Reclamation, including infrastructure and road removal, was barely discussed in the FEIS, which essentially states that infrastructure may or may not be simply left in place or removed.[118] Reclamation is necessary for Willow, and BLM should ensure that all steps are taken to reclaim the area to its natural state. Reclamation activities necessitate more equipment and disturbance, but simply abandoning infrastructure in place will cause permanent damage to the landscape. While some of this massive new infrastructure may be considered "temporary" (e.g., the ice roads and pads), that does not mean the temporary infrastructure will not have significant impacts to wildlife and subsistence from their construction and use. BLM must analyze the impacts of ongoing disturbance if facilities and roads are left in place, and the impacts from eventual road removal and reclamation efforts.

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[117] *See id*. § 1508.25(a)(3) ("Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement."); *See also id*. § 1508.25(a)(1) ("Connected actions . . . are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.).

[118] Willow FEIS vol. 1 at 18.

In sum, the lack of information and clarity about the project raises serious questions about ConocoPhillips' ability to move forward with this massive project in an environmentally responsible manner. It also severely limits the public's ability to analyze the potential impacts of this proposal. BLM needs all of this information in order to fully assess the impacts of this project.

2. The SEIS Process Requires New Baseline Studies.

As the lead agency responsible for developing the EIS, BLM is obligated to obtain appropriate baseline data for the project area and to do a thorough analysis of potential impacts from the proposed project and its connected actions. Consistent with the requirements of NEPA, the Willow Plan EIS must evaluate ConocoPhillips' proposed project using the relevant monitoring data and high quality, site-specific information on the project area.[119]

Full consideration will require analysis of adequate pre-project baseline studies as well as monitoring over the life of the project. BLM should determine what baseline studies have been completed and ensure that these data are available for public and peer review. This may include habitat or resource selection modeling, ecological mapping, population viability analyses, disturbance modeling and movement/path analyses.

BLM cannot simply tier to the affected environment considered in the IAP. The IAP is a high-level plan covering the entire Reserve and does not contain adequate site-specific information for the evaluation of Willow. The FEIS also did not contain a detailed enough analysis of the baseline conditions specific to the Willow area. New studies may be needed in light of changes to resources resulting from climate change and other new information related to the scale of industrial developments and impacts in the region, even since the release of the prior FEIS. BLM must ensure it has up-to-date, site-specific studies and modeling in the northeastern region of the Reserve to determine how a project of this scale is likely to change nearby air quality, hydrology, and habitat. Data are needed on the aquatic resources in the project area in order to adequately evaluate the impacts of the infrastructure and gravel mines. The lack of site-specific information about both the project and the aquatic resources that would be impacted was a significant gap in the last EIS. BLM and the Corps need to obtain additional baseline information about the aquatic resources, including information on wetland functions, that will be impacted by Willow. As part of the last NEPA process, there was also a significant gap in site-specific information about the water conditions at the location of the proposed Colville Crossing. BLM should ensure that additional, site-specific baseline data is gathered at the proposed crossing location to inform its analysis of that alternative. BLM should not rely on hypothetical or unrelated data sets, or yet-to-be-conducted monitoring, to determine if the Colville Crossing can be constructed and used in a manner that protects the environment and public safety. NEPA requires that that monitoring be done now, prior to evaluating the impacts of the crossing.

BLM also needs to do further studies to understand the negative impacts this project will have on caribou migration, fish, and other wildlife. BLM should conduct a comprehensive study in Nuiqsut to fully assess the subsistence, socioeconomic, cultural, recreational, health and other negative impacts of this project combined with other ongoing and future projects, and should

[119] *See* 40 C.F.R. §§ 1500.1, 1502.24 (CEQ regulations demand information of "high quality" and professional integrity).

ensure that information is shared with the community. BLM cannot meaningfully evaluate Willow's potential impacts and necessary mitigation measures without all of this information.

E. BLM'S ANALYSIS AND DECISION MUST FULLY ACCOUNT FOR THE CONTRIBUTIONS OF WILLOW TO GLOBAL CLIMATE CHANGE AND THE IMPACTS OF CLIMATE CHANGE ON THE ARCTIC.

Any new environmental analysis of the Willow project must fully account for the project's climate impacts. NEPA requires that agencies discuss not only a proposed action's environmental effects, but also their significance.[120] Therefore, in addition to accurately quantifying the GHG emissions consequences of the Willow project, BLM must put the project's emissions in context. Because any project's emissions appear "individually minor" when compared against global (or even national) totals, quantifying emissions is only a first step; agencies must also explain the project's "incremental impact" on climate change.[121] In other words, an agency must explain how a project's GHG emissions would move the planet closer or further away from unacceptably dangerous warming, or a "tipping point" at which catastrophic impacts would occur.[122] In conducting this analysis, BLM must consider high quality and accurate climate science, including the most recent scientific information.[123] BLM must also disclose what effect a decision to approve the Willow project would have on the United States' commitments to limit warming to below 1.5°C. Moreover, BLM should do more than just consider this information. It can and should reach a decision that is in accordance with the science and the federal government's commitment to respond to the climate crisis by selecting the no action alternative or delaying its consideration of the project.

1. The effects of climate change are severe and worsening.

An overwhelming international scientific consensus has established that human-caused climate change is already causing severe and widespread harms and that climate change threats are becoming increasingly dangerous. The climate crisis, caused primarily by fossil fuel emissions, poses an existential threat to every aspect of society. Fossil fuel-driven climate change has already led to more frequent and intense heat waves, floods, and droughts; more destructive hurricanes and wildfires; rising seas and coastal erosion; increased spread of disease; food and water insecurity; acidifying oceans; and increasing risk of species extinction and collapse of ecosystems. The climate crisis is killing people across the nation and around the world, accelerating the extinction crisis, and costing the U.S. economy billions in damages every year. The harms from the climate crisis and fossil fuel pollution are not felt equally, but instead fall most acutely on Black, Brown, Indigenous, and other communities of color, as well as low-wealth and other frontline communities, thus worsening the environmental justice crisis. The vast

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[120] 40 C.F.R. § 1500.1.
[121] *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1215–17 (9th Cir. 2008); *see also California v. Bernhardt*, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) ("[Agencies] must communicate 'the *actual* environmental effects resulting from . . . emissions' of greenhouse gas, not just quantify [those emissions].") (quoting *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1216).
[122] *See Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1220–27 (concluding petitioners' argument raised substantial questions about the effects of the agency's action on the human environment).
[123] 40 C.F.R. § 1500.1(b) (requiring "high quality" information and "[a]ccurate scientific analysis").

scientific literature documenting these findings has been set forth in a series of authoritative reports from the Intergovernmental Panel on Climate Change (IPCC) and U.S. Global Change Research Program.[124] The IPCC report makes clear that fossil-fuel driven climate change is a "code red for humanity."[125] The IPCC, the international scientific body for the assessment of climate change, concluded in its *Climate Change 2021: The Physical Science Basis* report that: "[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred," and further that "[t]he scale of recent changes across the climate system as a whole – and the present state of many aspects of the climate system – are unprecedented over many centuries to many thousands of years."[126] Without limits on fossil fuel production and deep and rapid emissions reductions, global temperature rise will exceed 1.5°C and will result in catastrophic damages in the U.S. and around the world.[127]

The U.S. federal government has repeatedly recognized that human-caused climate change is causing widespread and intensifying harms across the country. Most recently, the *Fourth National Climate Assessment*, prepared by hundreds of scientific experts and reviewed by the National Academies of Sciences, Engineering, and Medicine and 13 federal agencies including the Department of the Interior,[128] found that "evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats to Americans' physical, social, and economic well-being are rising."[129]

The *Fourth National Climate Assessment* highlighted the extreme pace of climate change in Alaska and the Arctic in particular.[130] According to the Assessment, Alaska is warming faster than any other state, at a rate "twice as fast as the global average since the middle of the 20th century,"[131] with the fastest warming taking place in the Alaskan Arctic.[132] Future heating of

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[124] Intergovernmental Panel on Climate Change, *Summary for Policymakers, in Climate Change 2021: The Physical Science Basis*, Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021), https://www.ipcc.ch/report/sixth-assessment-report-working-group-i [IPCC, *Summary for Policymakers* 2021]; U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment, Vol. I (2017), https://science2017.globalchange.gov/; U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* (Rev. Mar. 2021), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf [NCA4 Vol. II].
[125] United Nations Secretary-General, *Secretary-General's statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment* (Aug. 9, 2021), https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment [U.N. Secretary-General, Statement].
[126] IPCC, *Summary for Policymakers* 2021 at 4 and 8.
[127] IPCC, *Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018), https://www.ipcc.ch/sr15/ [IPCC 2018].
[128] NCA4 Vol. II at 2, iii, 10-23.
[129] *Id.* at 36.
[130] *Id.* at 1190-92.
[131] *Id.* at 1190.
[132] *Id.* at 1191.

Alaska's Arctic is projected to be less severe under scenarios where GHG emissions are greatly reduced. For example, average temperatures on the North Slope are projected to rise by 8 to 10°F under the lower Representative Concentration Pathway (RCP) 4.5 scenario, compared with 14 to 16.5°F under the higher RCP 8.5 scenario by 2070–2099.[133]

Other recent scientific assessments have similarly documented the extreme impacts of Arctic climate change, including National Oceanic and Atmospheric Administration's *Arctic Report Card 2021*[134] and the Arctic Monitoring and Assessment Programme's 2017 *Snow, Water, Ice and Permafrost in the Arctic* report.[135] Another study evaluated infrastructure hazard areas in the Northern Hemisphere's permafrost regions under projected climatic changes through 2050, and identified 550 km of the Trans-Alaska Pipeline System that are in the area in which near-surface permafrost thaw may occur by 2050;[136] while another reported a trend toward earlier spring snowmelt and later onset of autumn snow accumulation on the North Slope.[137] A 2017 study documented extreme weather events, including one that determined that the record-setting warmth during the 2015/16 cold season in Alaska — when statewide average temperatures exceeded the 1925-2016 mean by more than 4°C over the 7-month cold season and by more than 6°C over the 4-month late-winter period—will become the norm within several decades if GHG emissions follow their present path.[138] Another 2017 study examined how climate change is expected to alter the frequencies and intensities of extreme temperature and precipitation events, concluding that "the shifts in temperature and precipitation indicate unprecedented heat and rainfall across Alaska during this century."[139] Yet another study projected that wet snow and rain-on-snow events will increase in frequency and extent in Alaska with climate warming.[140]

The *Fourth National Climate Assessment* and the National Research Council have made clear that the harms of climate change are long-lived, and the choices we make now on reducing GHG pollution will affect the severity of the climate change damages that will be suffered in the coming decades and centuries.[141]

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[133] *Id.*, Fig. 26.1.
[134] National Oceanic and Atmospheric Administration, *Arctic Report Card 2021* (2021), https://arctic.noaa.gov/Portals/7/ArcticReportCard/Documents/ArcticReportCard_full_report2021.pdf.
[135] Arctic Monitoring and Assessment Programme (AMAP), *Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017* (2017), https://www.amap.no/documents/download/2987/inline.
[136] J. Hjort *et al.*, *Degrading permafrost puts Arctic infrastructure at risk by mid-century*, 9 NATURE COMMUNICATIONS 5147 (2018).
[137] C. J. Cox *et al.*, *Drivers and environmental responses to the changing annual snow cycle of northern Alaska*, BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY 2559 (Dec. 2017).
[138] J. E. Walsh *et al.*, *The exceptionally warm winter of 2015/2016 in Alaska*, 30 JOURNAL OF CLIMATE 2069 (2017).
[139] R. Lader *et al.*, *Projections of twenty-first-century climate extremes for Alaska via dynamical downscaling and quantile mapping*, 56 JOURNAL OF APPLIED METEOROLOGY AND CLIMATOLOGY 2393 (Sept. 2017).
[140] C. G. Pan *et al.*, *Rain-on-snow events in Alaska, their frequency and distribution from satellite observations*, 13 ENVIRONMENTAL RESEARCH LETTERS 075004 (2018).
[141] NCA4 Vol. II at 34, 1347-49; National Research Council, Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia at 3 (2011).

2. Approving new fossil fuel extraction projects is incompatible with meeting commitments to hold warming to 1.5°C.

Scientific research has established that there is little, and rapidly diminishing, space in the global carbon budget for new fossil fuel infrastructure and extraction if we are to avoid the worst dangers from climate change.[142] This research indicates that new fossil fuel exploration, production, and infrastructure projects need to be halted and much existing production phased out to meet the Paris Agreement climate targets and avoid catastrophic climate damages.[143]

A 2016 global analysis found that the carbon emissions that would be released from burning the developed fossil fuel reserves from the world's currently operating oil and gas fields and coal mines would fully exhaust and exceed the carbon budget consistent with staying below 1.5°C.[144] The reserves in currently operating oil and gas fields alone, even excluding coal mines, would likely lead to warming beyond 1.5°C.[145] Thus, some of the world's existing oil and gas fields and coal mines will need to be closed before their reserves are fully extracted in order to limit warming to 1.5°C.[146] An important conclusion of the analysis is that "[n]o new fossil fuel extraction or transportation infrastructure should be built, and governments should grant no new permits for them."[147]

In the landmark 2019 *Production Gap Report*, Stockholm Environment Institute and others used publicly available data to demonstrate that stark differences exist between fossil fuel volumes and emissions that countries are currently planning and what the IPCC estimates would be consistent with 1.5°C or 2°C pathways.[148] The subsequent 2020 *Production Gap Report* warned that the world must decrease fossil fuel production by roughly 6 percent per year between 2020 and 2030 to limit warming to 1.5°C.[149] Instead, countries are "planning and projecting an average annual increase of 2 [percent], which by 2030 would result in more than

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[142] D. Tong *et al., Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target*, 572 NATURE 373 (Aug. 2019) (Tong *et al.* 2019).
[143] *Id.*
[144] Oil Change International, *The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production* at 17 & 19, Tbl. 3 (Sept. 2016) (Oil Change International 2016). According to this analysis, the CO_2 emissions from developed reserves in existing and under-construction global oil and gas fields and existing coal mines are estimated at 942 $GtCO_2$, which vastly exceeds the IPCC-estimated 1.5°C-compatible carbon budget of 420 $GtCO_2$ to 570 $GtCO_2$ (66% probability). IPCC 2018, *Summary for Policymakers* at 12.
[145] The CO_2 emissions from developed reserves in currently operating and under-construction oil and gas fields alone are estimated at 517 $GtCO_2$, which would nearly or completely exhaust the 1.5°C-compatible carbon budget estimated by the IPCC. Oil Change International 2016 at 5 &19, Tbl. 3; IPCC 2018, *Summary for Policymakers* at 12.
[146] Oil Change International 2016 at 5.
[147] *Id.*; *see also id.* at 7, 36, 45 (similar).
[148] *See* Stockholm Environment Institute *et al.*, *The Production Gap: The discrepancy between countries' planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C*, 2019 Report (2019).
[149] Stockholm Environment Institute *et al.*, *The Production Gap: The discrepancy between countries' planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C*, Special Report 2020 at 4 (2020).

double the production consistent with the 1.5°C limit."[150] The Willow project would be a part of this 2 percent increase in annual fossil fuel production, meaning that the project would significantly contribute to warming the world past a safe limit.

A 2019 analysis underscored that the U.S. must halt new fossil fuel extraction and rapidly phase out existing production to avoid jeopardizing our ability to meet the Paris climate targets and avoid the worst dangers of climate change.[151] The analysis showed that the U.S. oil and gas industry is on track to account for 60 percent of the world's projected growth in oil and gas production between 2017 and 2030[152] — the time period over which the IPCC concluded that global carbon dioxide (CO_2) emissions should be roughly halved to meet the 1.5°C Paris Agreement target.[153] Based on a 1.5°C IPCC pathway, U.S. production alone would exhaust nearly 50 percent of the world's total allowance for oil and gas by 2030 and exhaust more than 90 percent by 2050.[154]

Halting new fossil fuel production and rapidly phasing out existing production on federal public lands must play an important part in meeting climate goals. In 2018, the U.S. Geological Survey and the Department of the Interior estimated that carbon emissions released from extraction and end-use combustion of fossil fuels produced on federal lands alone accounted for approximately one quarter of total U.S. carbon emissions during 2005 to 2014.[155] A 2015 analysis of U.S. fossil fuel resources shows that the potential carbon emissions from already leased fossil fuel resources on U.S. federal lands would essentially exhaust the remaining U.S. carbon budget consistent with even a 2°C target.[156] Moreover, the production horizons for already leased federal fossil fuels extend decades past the dates by which carbon budgets consistent with 1.5°C or 2.0°C will be exhausted at current emissions levels, [157] underscoring how unwarranted, unreasonable, and capricious any additional fossil fuel extraction projects are.

A 2021 analysis concluded that the largest annual increases in global oil and gas production between 2019 and 2030 are projected to occur in the U.S.[158] If U.S. fossil fuel expansion is not immediately halted, it will make it impossible to meet the 1.5°C limit and preserve a livable planet. The U.S. must focus its resources and technology to rapidly phase out

[150] *Id.*
[151] Oil Change International, *Drilling Towards Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Climate Limits* (Jan. 2019) (Oil Change International 2019).
[152] *Id.* at 6, 17.
[153] IPCC 2018, *Summary for Policymakers* at 12.
[154] Oil Change International 2019 at 6.
[155] M. D. Merrill *et al.*, *Federal Lands Greenhouse Gas Emissions and Sequestration in the United States: Estimates for 2005–14*, U.S. Geological Survey Scientific Investigations Report 2018–5131 at 8 (2018).
[156] Ecoshift Consulting *et al.*, *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels*, prepared for Center for Biological Diversity & Friends of the Earth (2015).
[157] D. Mulvaney *et al.*, *Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets* at 5 (July 2016).
[158] P. Achakulwisut & P. Erickson, *Trends in fossil fuel extraction: Implications for a shared effort to align global fossil fuel production with climate limits*, Stockholm Environment Institute working paper (Apr. 2021).

oil and gas extraction while investing in a just transition for affected workers and communities currently living on the front lines of the fossil fuel industry and its pollution.[159]

The need to stop new production means that no new fossil fuel extraction projects should be permitted. Relating to the International Energy Agency's (IEA) 2021 report emphasizing the need to stay below 1.5°C in warming,[160] IEA's Executive Director said that "[i]f governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now — from this year."[161] The IEA's report itself concludes that "hav[ing] a fighting chance of . . . limiting the rise in global temperatures to 1.5 °C . . . requires nothing short of a total transformation of the energy systems that underpin our economies."[162]

The need to end new fossil fuel production and infrastructure approvals has been acknowledged by leaders around the world. Upon the release of the IPCC's Sixth Assessment Report, U.N. Secretary-General said "This report must sound a death knell for coal and fossil fuels, before they destroy our planet…. There must be no new coal plants built after 2021…. Countries should also end all new fossil fuel exploration and production…."[163]

The Biden administration has recognized the climate imperative and committed the government to taking decisive action. It is the policy of the administration to "deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy."[164] This approach includes a "reconsideration of Federal oil and gas permitting . . . practices."[165] As President Biden recently stated at the United Nations climate summit in Glasgow, we are at an "inflection point" in the fight against climate change and have only a "brief window" to act.[166]

3. BLM must consider the significance of the Willow project's GHG emissions in the context of the climate crisis and the United States' commitments to address it.

Because any project's emissions may appear "individually minor" when compared against global (or even national) totals, BLM should recognize that quantifying emissions is only a first step; BLM must also explain the Willow project's "incremental impact" on climate change

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[159] G. Piggot *et al.*, *Realizing a just and equitable transition away from fossil fuels*, Stockholm Environment Institute discussion brief (Jan. 2019).
[160] IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (2021) (IEA 2021).
[161] F. Harvey, *No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body*, THE GUARDIAN (May 18, 2021) [Harvey, *No new oil, gas or coal development*].
[162] IEA 2021 at 3.
[163] U.N. Secretary-General, Statement.
[164] Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7619, 7622 (Jan. 27, 2021).
[165] *Id.* at 7624.
[166] M. Chalfant & R. Frazin, Biden warns of 'existential' climate threat at Glasgow summit, THE HILL (Nov. 1, 2021), https://thehill.com/policy/energy-environment/579403-biden-calls-for-collective-action-at-glasgow-climate-summit?rl=1.

and disclose what effect BLM's decision to authorize the project would have on the United States' commitment to limit warming to below 1.5°C.[167]

NEPA requires agencies to "provide the necessary contextual information about [an action's] cumulative and incremental environmental impacts."[168] This rule recognizes that in many situations, a pollutant's marginal impact depends on the level of pollution in the system.[169] For environmental impacts that have a tipping point, quantification of a project's pollutants "is a necessary component" of the agency's analysis but "not a sufficient description of the actual environmental effects that can be expected [from the project]."[170]

Applying this rule in the climate change context, the Ninth Circuit has held that an agency must "evaluate the 'incremental impact' that [GHG] emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions."[171] Agencies must consider these emissions in context.[172] District courts have further explained why quantifying emissions without additional context is insufficient.[173] An agency "must communicate the *actual* environmental effects resulting from emissions of greenhouse gas, not just quantify them."[174] BLM must look at Willow and other projects "in combination with each other,"[175] to determine "'whether, or how, to alter the program to lessen cumulative impacts' on climate change."[176]

CEQ's Final Climate Guidance provides guidance on how federal agencies should address climate change in their NEPA analyses.[177] The Final Climate Guidance applies to all

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[167] *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1215-1217; *see also California v. Bernhardt*, 472 F. Supp. 3d at 623 ("[Agencies] must communicate 'the *actual* environmental effects resulting from . . . emissions' of greenhouse gas, not just quantify [those emissions].") (quoting *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1216).

[168] *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1217; *see also Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (agencies must analyze the "degree that each [environmental] factor will be impacted").

[169] *See, e.g.*, *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 994 (acknowledging "the addition of a small amount of sediment to a creek may have only a limited impact on salmon survival, or perhaps no impact at all" but that multiple small additions of sediment "could add up to something with a much greater impact, until there comes a point where even a marginal increase will mean that *no* salmon survive.").

[170] *Id.* at 995; *see also id.* at 997 (setting aside environmental assessments that, among other things, quantified the total amount of spotted owl habitat that the projects would adversely affect but did not discuss "the effect of this loss on the spotted owl throughout the watershed").

[171] *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1216.

[172] *Id.*

[173] *California v. Bernhardt*, 472 F. Supp. 3d at 623 (citing Kevin M. Stack & Michael P. Vandenbergh, *The One Percent Problem*, 111 COLUM. L. REV. 1385, 1393 (2011)).

[174] *Id.* (internal quotation marks and alterations omitted).

[175] *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 457 F. Supp. 3d 880, 894 (D. Mont. 2020) (citing *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1217).

[176] *Id.* (quoting *Churchill Cty. v. Norton*, 276 F.3d 1060, 1080 (9th Cir. 2001)).

[177] *See* CEQ, Memorandum, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Aug. 1, 2016).

federal agency actions subject to NEPA, "including land and resource management decisions."[178] This guidance should be used by BLM in its reconsideration of the Willow project.

Further, various methodologies exist that are generally accepted in the scientific community to use in assessing the significance of an oil and gas drilling project. For example, the cumulative lifecycle emissions from the proposed Willow project, in combination with other federal fossil fuel exploration and production in the Reserve, and nationwide, should be put in the context of the global and U.S. carbon budgets, based on climate change thresholds.

BLM should also use of the social cost of greenhouse gases to estimate the cost of the Willow project's emissions.[179] Several courts have rejected agency refusals to use the social cost of greenhouse gases as a means of evaluating the impact of GHG emissions.[180] The administration has also admonished: "It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account."[181] Secretarial Order No. 3399 directs bureaus and offices to "use appropriate tools, methodologies, and resources available to quantify GHG emissions and compare GHG quantities across alternatives," with the "social cost of greenhouse gases" being a "useful measure to assess the climate impacts of GHG emission changes for Federal proposed actions."[182] BLM arbitrarily dismissed the use of this tool in its previous EIS for the Willow project.[183]

The Interagency Working Group on Social Cost of Greenhouse Gases has produced estimates for the social cost of carbon in order to "allow agencies to incorporate the social benefits of reducing [CO_2] emissions into cost-benefit analyses of regulatory actions."[184] The working group presented values for social costs of CO_2 from 2010 to 2050, ranging from $10 to $212 (in 2007 dollars per metric ton of carbon dioxide).[185] These values can help in analyzing the costs imposed by the net GHG emissions that might eventually result from development,

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[178] *Id*. at 9-11.
[179] *High Country Conservation Advocs. v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1189-93 (D. Colo. 2014); *WildEarth Guardians v. Bernhardt*, No. CV 17-80-BLG-SPW, 2021 WL 363955, at *8-10 (D. Mont. Feb. 3, 2021); *California v. Bernhardt*, 472 F. Supp. 3d at 623.
[180] *See, e.g., Sierra Club v. FERC*, 867 F.3d 1357, 1375 (D.C. Cir. 2017); *Mont. Env't Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1094–99 (D. Mont. 2017) (rejecting agency's failure to incorporate the federal social cost of carbon estimates into its cost-benefit analysis of a proposed mine expansion); *High Country Conservation Advocs.*, 52 F. Supp. at 1190–93 (holding the social cost of carbon was an available tool to quantify the significance of GHG impacts, and that it was "arbitrary and capricious to quantify the benefits of the lease modifications and then explain that a similar analysis of the costs was impossible") (emphases omitted). An agency may not assert that the social cost of fossil fuel development is zero: "by deciding not to quantify the costs at all, the agencies effectively zeroed out the costs in its quantitative analysis." *Id.* at 1192; *see also Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1200 (holding that while there is a range potential social cost figures, "the value of carbon emissions reduction is certainly not zero.").
[181] Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, 86 Fed. Reg. 7037, 7040 (Jan. 25, 2021).
[182] Secretary of the Interior, Order No. 3399, Sec. 5(b).
[183] Willow FEIS at 32.
[184] Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: - Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866 at 3 (Aug. 2016).
[185] *Id.* at 4, Tbl. ES-1.

especially where BLM monetizes the purported economic benefits of the project. The working group is expected to release updated estimates in the coming months,[186] and BLM should use these estimates when they become available.

4. BLM must not rely on the MarketSim Model to create a misleading picture of the Willow project's GHG emissions.

If BLM continues to use MarketSim to estimate the net emissions from the Willow project and its alternatives, it must properly account for foreign emissions and correct other deficiencies in the model.[187] Together, these deficiencies lead to an inaccurate picture of the project's emissions—underestimating the climate benefits of the no action alternative and underestimating the climate harms from building the project. The flaws in the MarketSim model are set forth below.

First, MarketSim erroneously assumes constant trends in energy demand and GHG emissions production. MarketSim analysis assumes that U.S. oil and gas production and GHG emissions will stay near constant through 2050. This is unreasonable and unrealistic, and results in underestimating the GHG emissions reductions resulting from a no action alternative.

MarketSim assumes unreasonably high demand for oil and natural gas over 30 years. Specifically, Bureau of Ocean Energy Management and BLM's MarketSim analysis has used the U.S. Energy Information Administration's (EIA's) 2020 Annual Energy Outlook reference case to evaluate GHG emissions.[188] However, the EIA's 2020 report which extends projections to 2050, assumes that the U.S. "continues to produce historically high levels of crude oil and natural gas."[189] The EIA reference case also assumes that the U.S. fails completely to meet its climate commitments under the Paris Agreement as U.S. GHG emissions in 2050 are only 4% lower than 2019 levels[190] instead of reaching near zero emissions. This scenario does not account for shifting trends in energy demands, including the rapidly growing capacity and price competitiveness of solar and wind energy that can substitute for fossil fuels. It also does not account for expanding policy action to phase out fossil fuels and reduce emissions, such as federal and state emissions reduction policies or U.S. commitments under the Paris Agreement.

An unrealistic assumption of near-constant high-volume oil and gas production and emissions over the next three decades is inconsistent with BLM's obligation under NEPA to make assumptions that are reasonable and based on available information.[191] In practice, this

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[186] Executive Order 13990, 86 Fed. Reg. at 7040.
[187] SILA Order at *13-14.
[188] New York University's Institute for Policy Integrity has also engaged in a thorough critique of the MarketSim model for minimizing or altogether eliminating the climate impacts of major fossil-fuel projects. *See* Institute for Policy Integrity, New York University School of Law, *Toward Rationality in Oil and Gas Leasing: Building the Toolkit for Programmatic Reforms* at 10 (Aug. 2021), https://policyintegrity.org/files/publications/Toward_Rationality_in_Oil_and_Gas_Leasing_%282%29.pdf [Institute for Policy Integrity, *Toward Rationality*].
[189] EIA, *Annual Energy Outlook 2020 with projection to 2050* at 3 (Jan. 29, 2020).
[190] *Id.*
[191] *See, e.g.*, *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council*, 462 U.S. 87, 105 (1983) (stating that agency's assumptions in NEPA review must reflect "reasoned decisionmaking" and "consider[] the relevant factors").

assumption significantly inflates the estimates of how much avoided oil production under a no action alternative would be substituted by fossil fuels, rather than by clean, renewable energy and energy efficiency measures. This would lead to an underestimate of net emissions if the Willow project is constructed. BLM should instead model a baseline scenario that assumes that the U.S. and other countries meet their commitments under the Paris Agreement and transition to clean, renewable energy.

Second, MarketSim contains misleading assumptions about substitution of energy supplies. As previously applied, MarketSim assumes that a large percentage of avoided oil and gas production under a no action alternative would be replaced by foreign oil imported into the U.S., which does not reflect the significantly decreasing trend in oil imports and results in an underestimate of the GHG emission reductions resulting from a no action alternative.

The model also assumes that there will be near perfect substitution of energy supplies — for example, the model assumes that if extraction cannot occur on a parcel of public land, oil producers would extract similar quantities from state or private lands at similar prices.[192] MarketSim produces a substitution rate of 95%, but recent studies reviewed by the Institute for Policy Integrity show that substitution rates are likely significantly lower, and closer to 50%.[193] In a larger sense, MarketSim's assumptions ignore the realities of oil and gas production, as well as consumer behavior. Federal lands are often the cheapest source for energy, and producers turning elsewhere will often face higher costs for energy production.[194] Consumers will shift their behavior in response to higher energy prices, and will implement conservation measures and/or seek out cheaper energy sources.[195] MarketSim's assumptions that there will be near perfect substitution does not sufficiently account for these effects, and lead to erroneous conclusions about the effects of leasing and extraction projects.

Third, many of MarketSim's assumptions about demand and supply elasticities are outdated or based on inconsistent sources. BLM should ensure that elasticities are updated from the recent literature, derived from the same version of National Energy Modeling System, and consistent with the calibrations run for quantity and prices in each year.

Fourth and finally, MarketSim uses a global warming potential (GWP) for methane that is outdated and significantly underestimates methane's heating effects on the climate. Relatedly, MarketSim only uses the 100-year GWP rather than the more policy-relevant 20-year time frame for GWP. BLM must use the updated GWP from the authoritative IPCC over a 20-year time frame that is most policy-relevant for accurately assessing the impacts of the methane pollution.[196]

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[192] Institute for Policy Integrity, *Toward Rationality* at 11, 14.
[193] *Id.* at 14.
[194] *Id.* at 11.
[195] *Id.*
[196] United Nations Environment Programme & Climate and Clean Air Coalition, *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions* (2021), https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions [United Nations Environment Programme & Climate and Clean Air Coalition, *Global Methane Assessment*].

Accurate representation of methane's heating effects is critical because methane emissions have a relatively immediate effect in increasing the rate of temperature rise due to its high GWP and shorter residence time in the atmosphere of roughly a decade. Deep cuts in methane emissions are critical for reducing near-term temperature rise and climate change damages and avoiding the crossing of regional and planetary "tipping points" — critical thresholds in the state of Earth's systems that, when exceeded, can lead to significant, abrupt, and often irreversible changes in the state of the system, resulting in severe physical, ecological and socioeconomic harms.[197] Using the policy-relevant time frame of 20 years for methane GWP, rather than just the 100-year GWP, is critical for evaluating the near-term harms of methane pollution at a time when methane emissions must be nearly halved by 2030 to achieve the Paris Agreement's 1.5°C climate limit.[198]

5. BLM should select the no action alternative or delay consideration of the Willow project.

Given the significance of the Willow project's GHG emissions in the context of the worsening climate crisis, BLM should select the no action alternative.[199] Alternatively, BLM may consider delaying any permitting for the project until a plan can be implemented for a declining rate of production throughout the Reserve over time that provides for an orderly phase-out of fossil fuel production consistent with declining rates of GHG emissions necessary to avoid 1.5°C warming. As described above, there is no room in the global carbon budget for the Willow project. Either of these choices would be consistent with BLM's broad management authority and obligations in the Reserve,[200] and would be consistent with this administration's commitments to address the climate crisis.

F. BLM NEEDS TO FULLY ASSESS THE POTENTIAL ADVERSE IMPACTS TO SPECIAL AREAS.

In a shocking disregard for its conservation mandates, in responding to a comment that asked the BLM to consider an alternative that removed all infrastructure from the Teshekpuk Lake Special Area, the agency stated that "[a]ll else being equal, the [Teshekpuk Lake Special Area] is only an administrative boundary, and Project impacts would not necessarily be greater within the [Special Area] than they would outside the [Special Area]."[201] All else is not equal, as Special Areas are designated in recognition of their surface values and Congress required "maximum protection" of those surface values.[202] BLM's review of Willow must reflect the heightened protections warranted to Special Areas and the values and resources they protect.

As described above, Teshekpuk Lake and its surrounding area have been protected from oil and gas development for the past 40 years.[203] Multiple Secretaries of the Interior have

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[197] IPCC 2018 at 253-65.
[198] United Nations Environment Programme & Climate and Clean Air Coalition, *Global Methane Assessment* at 11.
[199] *See supra* Section III.B.
[200] *Supra* Section II.
[201] Willow FEIS Appx. B.2 at 121.
[202] 42 U.S.C. § 6504(a); SILA Order at *32.
[203] *Supra* Section I.

prohibited oil and gas leasing in this valuable ecosystem, recognizing its outstanding ecological values. The 2013 IAP ROD expanded the Teshekpuk Lake Special Area from 1.75 million acres to 3.65 million acres to protect caribou calving, foraging and insect-relief areas, as well as waterbird and shorebird breeding, molting, staging, and migration habitats,[204] and made approximately 3.1 million acres unavailable for oil and gas leasing to protect birds and caribou, and the subsistence resources they provide.[205] The 2013 IAP expanded the purpose of the Teshekpuk Lake Special Area to include the protection of important caribou and shorebird habitat while continuing to protect waterbird habitat, which was the original purpose for the Special Area.[206] The 2013 IAP also provided specific stipulations and BMPs for the Teshekpuk Lake Special Area, such as BMP K-5, Teshekpuk Lake Caribou Habitat Area. In the 2020 IAP, BLM reduced the size of the Teshekpuk Lake Special Area, shifted the boundaries from the south to the west, and opened the entire Special Area to leasing.[207] BLM is, however, reconsidering the 2020 IAP and may adopt the no action alternative (i.e., return to the 2013 IAP) in the near future.[208]

The importance of the Teshekpuk Lake Special Area to birds, caribou, and other sensitive resources cannot be overstated. The Willow Project presents a substantial threat to the ecology of this important area. ConocoPhillips' proposal would result in significant industrial activity within and adjacent to the Teshekpuk Lake Special Area, including the core area in which oil and gas leasing was prohibited under the 2013 IAP but which is now open. BLM must complete a robust analysis of Willow's impacts to these resources and values. While the 2020 Willow ROD did not approve BT-4 or BT-5, those drill sites are reasonably foreseeable and they must be analyzed in this EIS.[209]

If BLM considers an alternative involving Module Transfer Islands at Atigaru Point or Point Lonely again, we note that the transportation corridor from those islands pass directly through the area made unavailable for leasing or new non-subsistence infrastructure in the 2013 IAP ROD[210] and areas subject to no surface occupancy, restricted surface use, or timing limitations under the 2020 IAP ROD.[211] BLM must be very clear in the Willow Plan SEIS regarding what types of activities and infrastructure are contemplated in this area, such as ice roads and/or "module" storage. BLM must delineate precisely where and at what time of year industrial traffic and other activities will occur within the Special Area boundaries, and vigorously analyze the potential adverse impacts to wildlife and other resources. Additionally, given the stipulations for the Teshekpuk Lake Caribou Habitat Area that may require closure of the area during spring and summer, BLM needs to clearly lay out how ConocoPhillips will construct the road and the island consistent with the stipulations.

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[204] 2013 IAP ROD at iv, 4.
[205] 2013 IAP ROD at iv.
[206] *Id*. at 4. The notice designating the Teshekpuk Lake Special Area noted "a large number of ducks, geese, and swans" and the importance of the area for these and other waterbirds. 42 Fed. Reg. 28,723 (June 3, 1977).
[207] 2021 IAP ROD at 1–2.
[208] *Infra* Section H.
[209] Willow ROD at 2.
[210] Willow FEIS vol. 2, appx. A.1, Figures 2.4.4 & 2.4.5.
[211] 2021 IAP ROD at Map 1, Map 2-19.

BLM must consider all potential direct, indirect, and cumulative effects of not only Willow's infrastructure, but also the broader set of industrial activities in and adjacent to the Teshekpuk Lake Special Area, including any summer work (past or future).[212] BLM must thoroughly describe and analyze the impacts of these activities.

BLM should also fully assess the potential direct, indirect, and cumulative impacts to the Teshekpuk Lake Special Area from the 2020 IAP. We opposed opening additional areas in the Special Area to leasing and development during the 2020 IAP process. The 2013 IAP did not allow leasing and non-subsistence permanent infrastructure in much of the Teshekpuk Lake Special Area because of its high conservation and subsistence values. However, because BLM and the administration opened this Special Area to leasing, unless BLM waits until it reviews the 2020 IAP and adopts the no-action alternative or otherwise adopts an alternative protecting this area, it must fully evaluate the impacts of the decision to open the Teshekpuk Lake Special Area to leasing as part of its analysis of Willow.

BLM must also analyze the potential adverse effects to the Colville River Special Area. While BLM eliminated this Special Area in its 2020 IAP ROD,[213] BLM is currently reconsidering that decision and could adopt the no-action alternative that re-instates this Special Area prior to a final decision on Willow.[214] As the Willow project was formerly proposed, a proposed mine site is adjacent to the Colville River Special Area and Willow's proposed roads and pipelines would be within the Special Area under every alternative considered.[215] Additionally, the Colville River Crossing alternative would cut through the Special Area.[216] As described above, the Colville River Special Area was established to assure maximum protection of its subsistence, wildlife, recreational, and other identified values, such as the unique bluff and riparian habitats associated with the Colville River and its tributaries.[217] Regardless of the status of this Special Area, BLM must carefully study current information on basin characteristics, streamflow data, channel geometry, and water quality to properly determine potential impacts and mitigate disturbances in this sensitive habitat. BLM should also consider project-specific mitigation to protect these resources and habitat from Willow's infrastructure, particularly if BLM moves forward before a final decision is made on the IAP. BLM must also consider the cumulative impacts to the Colville River and the Special Area from other industrial activities, including the Peregrine Project.

Finally, BLM should provide much better maps of the Willow Project and the Special Areas and relevant restrictions on surface use, lease stipulations, and ROPs under both the 2013 and 2020 IAPs. It is incredibly challenging to understand what components of Willow occur in areas that have designations, restrictions, or limitations, and it is made more challenging given that the 2020 IAP decision is being reconsidered. We strongly encourage BLM to include much more detailed and comprehensive maps in its SEIS.

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[212] Willow FEIS vol. 2, appx. A.1, Figure 1.4.1 (map of project area).
[213] 2021 IAP ROD at 1–2.
[214] *Infra* Section H.
[215] FEIS vol. 1, ch. 2 at 19 & vol. 2, Figures 2.4.1, 2.4.2, 2.4.3.
[216] FEIS vol. 1, ch. 2 at 21 & Figures ES.1, 2.4.6.
[217] *Supra* Section I.A.

G. BLM MUST ANALYZE AND FULLY DISCLOSE THE CUMULATIVE IMPACTS FROM WILLOW AND OTHER REASONABLY FORESEEABLE ACTIVITIES IN THE SUPPLEMENTAL EIS.

BLM must fully consider Willow's cumulative impacts "together with 'past, present and reasonably foreseeable future actions.'"[218] "Cumulative actions" are those "which when viewed with other proposed actions have cumulatively significant impacts."[219] "Cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[220] Such impacts "can result from individually minor but collectively significant actions taking place over a period of time."[221]

Oil and gas activities in the Arctic lead to significant cumulative impacts. Following a request from Congress, in 2003 the National Academy of Sciences published a report on the cumulative impacts of the environmental effects of oil and gas activities on the North Slope.[222] In that report, the National Academy recognized that there was an essential trade-off with industrialization and the intact physical environment: "The effects of North Slope industrial development on the physical and biotic environments and on the human societies that live there have accumulated, despite considerable efforts by the petroleum industry and regulatory agencies to minimize them."[223] The National Academy also noted that the effects on the physical environment from oil and gas activities and infrastructure extend well beyond the footprint, and accumulate and persist even after the activity may cease.[224] The impacts from oil and gas observed since that time, particularly in the Reserve and around Nuiqsut, have only increased.

Full consideration of Willow's cumulative impacts requires an analysis of all reasonably foreseeable future actions that may flow from Willow's development, as well as other actions that contribute cumulatively to the impacts of Willow.[225] There are a significant number of projects relevant to Willow's cumulative effects analysis. The Reserve is, unfortunately,

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[218] *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 895 (9th Cir. 2002) (quoting 40 C.F.R. § 1508.7).
[219] 40 C.F.R. § 1508.25(a)(2).
[220] *Id*. § 1508.7.
[221] *Id.*
[222] NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE, COMMITTEE ON CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE (2003) [hereinafter NRC Report].
[223] *Id.* at 10.
[224] *Id.* at 156.
[225] *See* IAP, Ch. 4 at 1 (stating that when evaluating the cumulative effects of oil and gas, the BLM would look at "not only those actions that may follow from the decisions in this plan, but also actions undertaken by others within and outside the planning area"); *see also* COUNCIL ON ENVIRONMENTAL QUALITY, EXECUTIVE OFFICE OF THE PRESIDENT, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT at 1 (Jan. 1997) ("The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects. Specifically, NEPA requires that all related actions be addressed in the same analysis."); Secretary of the Interior, Order No. 3399, § 5(a) (directing the Department of the Interior not to apply the 2020 NEPA regulations "in a manner that would change the application or level of NEPA" analysis required).

considered the new "hot-spot" for North Slope oil and gas activities,[226] and many projects have advanced since BLM last held a scoping period. There were also significant problems with the prior cumulative effects analysis that need to be addressed in this SEIS. Present and reasonably foreseeable future actions include, but are not limited to:

- Foreseeable future developments extending out from Willow, such as Greater Willow 1 and 2 and BT4 and BT5, if these components are not already part of ConocoPhillips' current proposal;[227]
- Development and production at ConocoPhillips' other projects, including but not limited to:
    - Ongoing and expanded operations at Colville Delta 5 (CD-5) and GMT-1;[228]
    - Production activities at GMT-2 and operational and project changes that are more impactful than what was considered in that project's EIS;[229]
    - Commencement of production at Narwhal and plans for an additional pad with 20 to 40 wells (CD-8);[230]
    - Construction of six new wells in the Colville River Unit and plans for an additional seven by May 2022;[231]
    - Construction of ice roads and drilling appraisal wells in the Bear Tooth Unit during the 2019–2020 season;[232]
    - Plans for development of the 2021 Coyote discovery west of the Kuparuk River Unit;[233] and
    - Continued development of the Kuparuk River Unit, including restarting rig activity, drilling a number of additional wells by mid-2022, and possible well fracking;[234]
- Exploration, development, and production of recent oil and gas discoveries including but not limited to:
    - Caelus's Smith Bay;[235]

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[226] Heather Richards, *Will Biden's Oil Plans Unleash an Arctic 'Carbon Bomb'?*, E&E NEWS, Jan. 7, 2022, *available at* https://subscriber.politicopro.com/article/eenews/2022/01/07/will-bidens-oil-plans-unleash-an-arctic-carbon-bomb-283177 [hereinafter Carbon Bomb].
[227] *See supra* Parts II and III.D.I.
[228] *See supra* Part I.B.
[229] Kristen Nelson, *GMT2 Producing: ConocoPhillips Has First Oil at NPR-A Greater Mooses Tooth 2*, PETROLEUM NEWS, Dec. 12, 2021, *available at* https://www.petroleumnews.com/pntruncate/561924151.shtml; BLM, Decision Record (Jan. 7, 2022) *available at* https://eplanning.blm.gov/public_projects/2016642/200503529/20051021/250057204/Conoco%20Ice%20Pad%20Decision.pdf.
[230] Kay Cashman, P*roducers 2021: ConocoPhillips Still Moving West; Big Independent's Commitment to Alaska Remains Strong Despite Delays in NPR-A Development*, PETROLEUM NEWS, Dec. 19, 2021, *available at* https://www.petroleumnews.com/pntruncate/6359994.shtml.
[231] *Id*.
[232] *Id*.
[233] *Id*.
[234] *Id*.
[235] Alan Bailey, *Company is Acquiring Leases with Intention to Appraise Major Oil Find*, PETROLEUM NEWS, Jan. 24, 2021, *available at* https://www.petroleumnews.com/pntruncate/723610240.shtml.

    - Oil Search's Pikka discovery, estimated to be the largest North Slope discovery in 40 years;[236] and
    - 88 Energy's Peregrine discovery, estimated at 1 billion barrels;[237]
- Ongoing development and production at Nanushuk;
- Winter seismic surveys and associated activities in the Willow area and adjacent parts of the Reserve;
- Winter exploration drilling and associated activities in the Willow area and adjacent parts of the Reserve;
- State nearshore oil and gas lease sales, including Special Alaskan Lease Sale Areas, which are blocks of contiguous leases offered together with large amounts of related data and seismic information;
- Oil and gas exploration, development, and production in the Arctic National Wildlife Refuge;
- The reversal of protections in the 2020 IAP for Special Areas in the Reserve, including the Teshekpuk Lake Special Area, leading to oil and gas leasing, exploration, development, and production in sensitive areas immediately adjacent to the current Willow proposal;[238]
- The Arctic Strategic Transportation and Resources project, where the State of Alaska is proposing to construct a series of gravel roads or rights-of-ways spanning portions of the North Slope Borough and is currently evaluating the presence of construction materials and geologic hazards in the Reserve;[239]
- Oil and gas activities in Outer Continental Shelf areas of the Beaufort Sea, as well as the potential for additional leasing and oil and gas activities and infrastructure in those areas and additional support infrastructure and activities within or adjacent to the Reserve;
- The Alaska Natural Gas Pipeline and other commercial natural gas pipelines and related activities; and
- Increased vessel traffic in the Beaufort, Bering, and Chukchi seas.

In analyzing these and other reasonably foreseeable future actions, BLM must provide relevant project details in order to meaningfully analyze Willow's cumulative effects. The FEIS failed to include relevant details regarding reasonably foreseeable future actions, including Greater Willow 1 and 2, Nanushuk, and nearby exploration activities. The FEIS provided only scant descriptions of these and other reasonably foreseeable future action along with their distance from Willow. BLM did not indicate the scale or types of infrastructure associated with

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[236] Alan Bailey, *Pikka Paper Published: Armstrong and Repsol Geoscientists Provide Details About the Nanushuk Discovery*, PETROLEUM NEWS, Dec. 19, 2021, *available at* https://www.petroleumnews.com/pnads/397799412.shtml.
[237] Heather Richards, *Huge Arctic Oil Find Makes Waves,* E&E NEWS, Sept. 1, 2021, *available at* https://www.eenews.net/articles/huge-arctic-oil-find-makes-waves/.
[238] *See supra* Part I.A.
[239] FY2023 Governor's Operating Budget, *available at* https://omb.alaska.gov/ombfiles/23_budget/DNR/Proposed/1_dept10.pdf at 7–9; *see also* Shady Grove Oliver, *Cost Comes Into Focus Amid ASTAR Testimony*, ARCTIC SOUNDER, Apr. 27, 2018, *available at* http://www.thearcticsounder.com/article/1817cost_comes_into_focus_amid_astar_testimony.

relevant projects, despite having sufficient information to do so. Such minimal information is insufficient to support meaningful analysis of the impacts of these projects in conjunction with Willow. BLM must include details necessary to understand the impact of reasonably foreseeable future actions. This includes impacts that extend beyond each project's footprint. According to the National Research Council, "[t]he common practice of describing the effects of particular projects in terms of the area directly disturbed by roads, pads, pipelines, and other facilities ignores the spreading character of oil development on the North Slope and the consequences of this to wildland values. All of these effects result in the erosion of wildland and other values over an area far exceeding the area directly affected."[240]

BLM must also actually analyze the impact different projects will have on regional resources in combination with Willow. In the FEIS, BLM failed to mention — let alone analyze — reasonably foreseeable future actions such as Greater Willow 1 and 2, Nanushuk, and nearby exploration activities as part of its cumulative effects analysis for important resources such as fish and polar bears. BLM's analysis of such resources relied on overly general conclusory statements about the impact of all industrial development. In so doing, BLM minimized impacts to numerous resources. This was a significant failing of the FEIS. BLM must avoid broad conclusory statements that ignore differences in the scale, degree, and overall consequence of diverse industrial projects in the SEIS.

Relatedly, BLM cannot use citations to other NEPA analyses to bypass doing an analysis of the cumulative impacts of Willow. For example, in the FEIS, BLM cited to the Nanushuk EIS for purposes of its cumulative impacts analysis, even though that EIS did not analyze the cumulative impacts of Nanushuk and Willow in tandem either. That is insufficient for purposes of NEPA.

BLM must also consider the impact of increased oil and gas development anticipated to flow from Willow in order to avoid minimizing Willow's cumulative effects on the region.[241] Experts anticipate industrial expansion moving farther into the Reserve than ever before.[242] If developed, Willow will open remote lands within the Reserve and connect them to massive facilities in the central North Slope. [243] Willow's substantial infrastructure is therefore expected to invite further exploration within the Reserve that previously would have been too costly to develop.[244] For example, Willow's associated roads will likely expand into a broader road system in the future. As former Interior Secretary Bruce Babbitt explained, "[t]he problem with roads is that roads beget more roads beget more roads. A road becomes a network, becomes a spider-web of landscape fragmentation and destruction, with little use for wildlife."[245] The growth Willow is likely to spur must be analyzed in order to avoid the historical pattern of

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[240] *Id.* at 148.
[241] *See generally* THE WILDERNESS SOCIETY, BROKEN PROMISES (2009) *available at* https://wilderness.org/resource/broken-promises-reality-oil-development-americas-arctic [hereinafter Broken Promises].
[242] Carbon Bomb.
[243] *Id*.
[244] *Id*.
[245] *Id*.

underestimating the effects of development in the Reserve and ConocoPhillips' approach of piecemealing permit applications for its development projects. For example:

- In the EIS for the GMT-1 development project, BLM acknowledged that "the intensity of [development] impacts and the overall degree of impacts may be higher than previously anticipated" in earlier EISs assessing development in the Reserve.[246]
- The original Alpine field — specifically promoted as a "roadless development" when initially proposed — had three miles of roads when it began pumping crude in 2000, but now has many more miles of roads and other infrastructure built since then.[247]
- New discoveries in the Western Arctic on state and federal lands have been dubbed a "string of pearls" and are resulting in new processing facilities and increased industrial activity significantly farther west than Alpine.[248]

As increased development flowing from Willow is foreseeable and will further exacerbate impacts on the region, impacts from future growth must be analyzed now. The SEIS must also fully consider the climate impacts of additional industrial activities and GHG emissions associated with reasonably foreseeable future activities.[249]

H. A BROAD RANGE OF MITIGATION MEASURES SHOULD BE EVALUATED IN THE SUPPLEMENTAL EIS.

BLM's timing of reconsidering the Reserve's IAP while supplementing the Willow MDP EIS is confusing, inappropriate, and unnecessary. Undergoing these processes at the same time creates significant confusion for the public and muddles BLM's analysis of the impacts of Willow. The decisions made in the IAP will have significant implications for the impacts of Willow because the IAP determines the likely extent of potential future development in the northeastern Reserve, redraws boundaries of or entirely eliminates or designates Special Areas, and affects the applicability of various mitigation measures. While Groups agree that reconsidering the management plan adopted in the 2020 IAP Record of Decision is necessary, there is no reason why BLM must plow ahead with supplementing the Willow EIS at the same time. Any reconsideration of Willow should occur after BLM completes its evaluation of the 2020 IAP and determines whether to issue a ROD selecting a different alternative, which may be as soon as spring of 2022, so it is clear what measures apply to this decision.[250]

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[246] BLM, Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth One Development Plan at Vol. I, at 423 (Oct. 2014), *available at* https://eplanning.blm.gov/epl-front-office/projects/nepa/37035/50832/55575/ GMT1_Final_SEIS_Volume_1_Oct_2014_(2)_508.pdf.

[247] Broken Promises at 8–9.

[248] Tim Bradner, *Ratcheting Up*, FRONTIERSMAN, April 21, 2018, *available at* http://www.frontiersman.com/business/ratcheting-up/article_dda92c24-45b7-11e8-a008-0b176b106442.html.

[249] *Supra* Section III.E.

[250] Principal Deputy Assistant Secretary Land and Minerals Management Laura Daniel-Davis, Memorandum for the Bureau of Land Management re: Evaluation of 2020 NPR-A IAP/EIS and Related Documents for Adequacy (Sept.

The IAP is particularly important for establishing which best management practices (BMPs) apply to Willow. BLM's approach in the Willow FEIS to simply list the mitigation contained in both IAPs did not address these significant shortcomings.[251] BLM must describe how it will enforce the BMPs from the IAP for Willow. In addition, even a cursory review of ConocoPhillips' map shows that ConocoPhillips is likely to seek many deviations from the protections outlined in both IAPs.[252] We have significant concerns about the potential impacts from allowing any of these deviations to occur and ask that BLM not grant waivers from any of these environmental protections. While we do not believe deviations from these measures are appropriate, to the extent BLM does allow deviations, BLM must fully assess the potential impacts and alternatives to granting any deviations and needs to clearly explain how the objectives of those BMPs will be met through other means.[253]

BLM has broad authority to impose additional mitigation measures to address the impacts from this project. Under the NPRPA, BLM is required to take actions, to mitigate, and avoid surface damage and ecological disturbance.[254] This is in addition to BLM's obligation to provide maximum protection in Special Areas.[255] BLM is also able to "limit, restrict, or prohibit use of and access to lands within the Reserve, including special areas."[256] Under these and other provisions, BLM has both the authority and obligation to use mitigation to protect subsistence and ecological values in the Reserve from Willow's impacts.[257]

Additionally, under Section 302 of FLPMA, BLM may not authorize, and must "take any action necessary to prevent unnecessary or undue degradation" of public lands."[258] If ConocoPhillips "cannot adequately mitigate impacts from the project, and BLM is, as a result, unable to achieve its resource and value objectives, then BLM may deny the land-use authorization in the decision document."[259] BLM also has an obligation under Section 810 of ANILCA to take reasonable steps to minimize and address the potential impacts to subsistence from the project. Given the significant adverse effects to subsistence uses and resources, as well as other values, that are likely to result from the Willow and its unavoidable impacts, it is vital that BLM consider whether its approval of this project complies with these statutes. In addition, BLM should require additional mitigation measures beyond what was considered in the FEIS to protect subsistence uses and other resources.

3, 2021); DEFS.' STATUS REPORT AND MOTION TO EXTEND STAY, *Northern Alaska Envtl. Ctr. v. Haaland,* 3:20-cv-00207-SLG (Jan. 10, 2022).

[251] *See, e.g.,* Willow FEIS Vol. 1, at 57–59 (listing different mitigation measures under both RODs relevant to soils, permafrost, and gravel resources).

[252] *See* 2013 IAP ROD at 43.

[253] 2013 IAP ROD at 43 ("A lessee/permittee may propose a deviation from the requirements/standards of stipulations and best management practices as part of an authorization application. Prior to approving an alternative procedure as part of the authorization, BLM's staff would analyze the proposal and determine if the proposal incorporating the alternative procedure would achieve the objectives of the stipulations and best management practices.").

[254] 43 C.F.R. § 2361.1(a).

[255] *Id.* § 2361.1(c).

[256] *Id.* § 2361.1(e)(1).

[257] *Supra* section II.

[258] 43 U.S.C. § 1732(b).

[259] BLM, Draft Regional Mitigation Manual Section 1794, at 1-8 (2014).

BLM needs to consider additional mitigation measures to address the serious impacts harming the community of Nuiqsut. In its GMT-1 decision, BLM found that there would be significant impacts to subsistence users and other values from the project that could not be fully mitigated by the stipulations and best-management practices in the 2013 IAP. To address those impacts, including major impacts to subsistence uses, BLM required additional compensatory mitigation funding from ConocoPhillips and required preparation of a Regional Mitigation Strategy (RMS).[260] The RMS was intended to identify additional avoidance, minimization, and compensatory mitigation measures to address the serious impacts from GMT-1 and future development projects, such as Willow.[261] Despite the serious concerns previously identified about the 2013 IAP's lack of adequate mitigation measures to address subsistence impacts, BLM did not incorporate additional meaningful measures in the 2020 IAP and has yet to implement any aspect of the RMS. The prior Willow decision did not go far enough in mitigating, let alone adequately analyzing, the serious impacts of the project on the community of Nuiqsut. BLM needs to address these deficiencies in the new SEIS and develop stronger mitigation measures for this hugely impactful project.

BLM must also consider new mitigation measures specific to the Willow Plan that will help to avoid, minimize, and compensate for adverse effects to resources. We encourage the agency to work closely with Nuiqsut in crafting these measures. All mitigation should be meaningful in its ability to address adverse impacts, and measurable in its effectiveness. BLM should also discuss in the EIS how the project and its impacts will be monitored and adjusted over time, both to address the effectiveness of the mitigation measures and to account for future changes to the project area like climate change and additional future development.

BLM should also include site-specific measures for mitigating the impacts to aquatic resources. BLM allowed the project to move forward last time without detailed, site-specific information about how the project would ultimately be designed. BLM should not rely on generalized, "typical" examples of how ConocoPhillips will design project elements, such as culverts, in the future. It should provide clearer parameters for ensuring the project is designed to avoid altering the hydrology in the project area in the first place, and should include clear requirements for how problems will be identified and fixed if they arise in the future.

We also encourage BLM to incorporate measures to minimize aircraft and road traffic, including the use of low-impact drones where possible instead of helicopters and fixed-wing aircraft, e.g., for pipeline and methane emission inspections and aerial studies. Any such aircraft restrictions should also extend to any related studies and other activities done in support of ConocoPhillips' activities, since those flights also have the potential to seriously impact subsistence and other values in the Reserve.

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[260] GMT-1 ROD at 38.

[261] GMT-1 ROD at 40–41 ("The RMS will be designed such that BLM will include the identified avoidance, minimization and compensatory mitigation recommendations in future NEPA analysis for BLM management actions and third party actions, in this region of the NPR-A, that could foreseeably result in additional habitat loss and degradation, and result in outcomes that benefit subsistence users most directly impacted by the GMT-1 project, including members of the Native Village of Nuiqsut.").

As discussed above, the Corps should also use this new process as an opportunity to rectify the serious problems with its previous compensatory mitigation determination. As part of the prior process, the Corps failed to ensure ConocoPhillips' proposed mitigation adequately offset impacts and instead only required minimal compensatory mitigation. That is wholly inappropriate for a project of this scale, and those problems should be corrected in any new decisions.

I. BLM MUST DISCLOSE AND ANALYZE THE IMPACTS OF HYDRAULIC FRACTURING AND OTHER WELL STIMULATION TECHNIQUES.

In both BLM's Draft EIS and Final EIS on the Willow project, the agency noted that "[e]ach production well would receive a multistage hydraulic fracturing operation similar to those employed at other North Slope developments."[262] Yet neither its Draft EIS, Supplemental Draft EIS, nor Final EIS analyzed the direct, indirect, and cumulative impacts from hydraulic fracturing ("fracking") and other well stimulation techniques under the project. BLM must rectify these legal errors by analyzing these impacts in its new analysis.

Fracking and other well stimulation techniques can cause environmental damage beyond that of conventional oil and gas development because of the dangerous chemicals used in the practice, additional waste generation and management needs, heightened risk of earthquakes, need for large quantities of water, and increased traffic, among other harms.

One peer-reviewed study that examined fracking fluid products determined the chemicals used in these practices can cause a myriad of harms, including damage to the respiratory system, nervous system, immune system, cardiovascular system, endocrine system; and that some can cause cancer and mutations.[263] Another study found that numerous chemicals used to acidize wells are F-graded hazardous chemicals — carcinogens, mutagens, reproductive toxins, developmental toxins, endocrine disruptors or high acute toxicity chemicals.[264]

Air pollution associated with fracking and flaring is a serious concern with a range of impacts. Researchers have documented more than 200 different air pollutants near drilling and fracking operations, including hazardous air pollutants with known health risks and endocrine disruptors.[265] Areas with substantial drilling and fracking show high levels of ground-level ozone (smog), striking declines in air quality, and, in several cases, increased rates of health problems with known links to air pollution.[266] Scientists have concluded "with a high level of certainty"

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[262] Draft EIS, Ch. 2 at 16; Final EIS, Ch. 2 at 19.
[263] Colborn, Theo, et al., *Natural Gas Operations for a Public Health Perspective*, 17 HUMAN & ECOLOGICAL RISK ASSESSMENT 1039 (2011); Elliot, E.G. et al., *A systematic evaluation of chemicals in hydraulic –fracturing fluids and wastewater for reproductive and developmental toxicity*, 27 JOURNAL OF EXPOSURE SCIENCE & ENVIRONMENTAL EPIDEMIOLOGY 90–99 (2016).
[264] Khadeeja Abdullah, Timothy Malloy, Michael K. Stenstrom & I. H. (Mel) Suffet, *Toxicity of acidization fluids used in California oil exploration*, 99 TOXICOLOGICAL & ENVIRONMENTAL CHEMISTRY 78 (2016).
[265] PHYSICIANS FOR SOCIAL RESPONSIBILITY, COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS DEMONSTRATING RISKS AND HARMS OF FRACKING (UNCONVENTIONAL GAS AND OIL EXTRACTION) (7th ed. 2020).
[266] *Id.*; McAlexander, Tara P., et al., *Unconventional Natural Gas Development and Hospitalization for Heart Failure in Pennsylvania*, 76 JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY 2862 (2020).

that living in close proximity to drilling and fracking is associated with adverse health outcomes.[267]

Studies have also demonstrated that drilling and fracking activities, and associated wastewater disposal practices, inherently threaten groundwater and have polluted drinking water sources.[268] Scientists have concluded that there is "irrefutable evidence that groundwater contamination occurs as a result of fracking activities and is more likely to occur close to well pads."[269]

In addition to posing a significant health and safety risk to humans, fracking and other well stimulation chemicals can kill or harm a wide variety of wildlife.[270]

Studies have also drawn a strong connection between the recent rise in fracking wastewater injection and increased earthquake rates.[271] Wastewater injection has been scientifically linked to earthquakes of magnitude three and greater in several states.[272] And it is

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[267] Seth B.C. Shonkoff, Department of Environmental Science, Policy, and Management, University of California, Berkeley, et al., Response to CalGEM Questions for the California Oil and Gas Public Health Rulemaking Scientific Advisory Panel (Oct. 1, 2021); Cushing, Lara J., et al, *Flaring from Unconventional Oil and Gas Development and Birth Outcomes in the Eagle Ford Shale in South Texas*, 128 ENVIRONMENTAL HEALTH PERSPECTIVES 077003 (2020); Longxiang Li, et al., *Unconventional oil and gas development and ambient particle radioactivity*, 11 NATURE COMMUNICATIONS 5002 (2020).

[268] *E.g.*, Bonetti, Pietro, et al., *Large-sample evidence on the impact of unconventional oil and gas development on surface waters*, 373 SCIENCE 896–902 (2021).

[269] Compendium at 86.

[270] Hossack, Blake R, *Effects of persistent energy-related brine contamination on amphibian abundance in national wildlife refuge wetlands*, 228 BIOLOGICAL CONSERVATION 36–43 (2018); U.S. Fish and Wildlife Service, Office of Law Enforcement. 2009; Case at a Glance: U.S. v. Nami Resources Company, LLC, www.fws.gov/home/feature/ 2009/pdf/NamiInvestigation.pdf; Papoulias, D.M. and A.L. Velasco, *Histopathological Analysis of Fish from Acorn Fork Creek, Kentucky, Exposed to Hydraulic Fracturing Fluid Releases*, 12 SOUTHEASTERN NATURALIST 92–111 (2013); MIT Energy Initiative, The future of Natural Gas, An Interdisciplinary MIT study (2011), http://energy.mit.edu/publication/ future-natural-gas/; Yuhe He, et al., *Effects on Biotransformation, Oxidative Stress, and Endocrine Disruption in Rainbow Trout (Oncorhynchus mykiss) Exposed to Hydraulic Fracturing Flowback and Produced Water*, 51 ENVIRON. SCI. TECHNOL. 940−947 (2017); Tamzin A. Blewett, et al., *The effect of hydraulic flowback and produced water on gill morphology, oxidative stress and antioxidant response in rainbow trout (Oncorhynchus mykiss)*, 7 NATURE: SCIENTIFIC REPORTS 46582 (2017); Tamzin A. Blewett, et al., *Sublethal and Reproductive Effects of Acute and Chronic Exposure to Flowback and Produced Water from Hydraulic Fracturing on the Water Flea Daphnia magna*, 51 ENVIRON. SCI. TECHNOL. 3032−3039 (2017); Yuhe He, et al., *Chemical and toxicological characterizations of hydraulic fracturing flowback and produced water*, 114 WATER RESEARCH 78–87 (2017).

[271] N. J. van der Elst, et al., *Enhanced Remote Earthquake Triggering at Fluid-Injection Sites in the Midwestern United States*, 341 SCIENCE 164, 164-65 (2013); U.S. Geological Survey (USGS), Induced Earthquakes Raise Chances of Damaging Shaking in 2016 (Mar. 28, 2016); Sumy, D. F., et al., *Observations of static Coulomb stress triggering of the November 2011 M5.7 Oklahoma earthquake sequence,* 119 J. GEOPHYS. RES. SOLID EARTH 1904–23 (2014); USGS, *Record Number of Oklahoma Tremors Raises Possibility of Damaging Earthquakes* (May 6, 2014), http://www.usgs.gov/newsroom/article.asp?ID=3880; Rubinstein, J.L., et al., *The 2001 – Present Induced Earthquake Sequence in the Raton Basin of Northern New Mexico and Southern Colorado*, 104 BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA 2162 (2014).

[272] Goebel, T. H. W., et al., *Wastewater disposal and earthquake swarm activity at the southern end of the Central Valley, California*, 43 GEOPHYSICAL RESEARCH LETTERS 1092–99 (2016); Van der Elst, et al. 2013; BC Oil & Gas

not just wastewater injection that can lead to earthquakes—the practice of fracking itself has been found to contribute to seismic events.[273] Even if the earthquakes that fracking directly generates are small, fracking could be contributing to increased stress in faults that leaves those faults more susceptible to otherwise naturally triggered earthquakes of greater magnitudes.[274] Alaska is seismically active and the impacts on this seismicity on the project area need to be projected and disclosed, along with potential leaks and spills that could contaminate water and soil.

The water withdrawal from lakes for use in fracking must also be evaluated. Between 2000 and 2014, the average water used for fracking a horizontal well increased from 177,000 gallons to 4 million gallons.[275] The substantial water withdrawals needed for fracking could cause fish mortality and low water levels in the project area, which could also harm birds like the yellow-billed loon and spectacled eiders.

Fracking also increases the traffic associated with drilling because of the additional supplies needed. For example, a U.S. Government Accountability Office study found that up to 1,365 truckloads can be required for the drilling and fracturing of a single well.[276] This traffic will further exacerbate the numerous harms associated with Willow including increased air pollution and noise that can disturb birds, polar bears, caribou, and other species.[277]

J. BLM MUST ANALYZE AND FULLY DISCLOSE IMPACTS TO BIOLOGICAL AND WILDLIFE RESOURCES.

BLM should comprehensively revise the Willow analysis to address the numerous flaws in its prior analysis, as identified in public comments, as well as to consider new information and ensure that its analysis and decision is consistent with current national policy to follow science, protect biodiversity, tackle the climate crisis with the urgency it demands, and advance environmental justice and the interests of Indigenous peoples. The FEIS failed to adequately

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Commission, Industry Bulletin: 2015-32 (Dec. 15, 2015); Rubinstein, J. L, et al. 2014; Frohlich, Cliff, *Two-year survey comparing earthquake activity and injection-well locations in the Barnett Shale, Texas*, 109 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 13,934–38 (2012); Holland, Austin, Examination of possibly induced seismicity from hydraulic fracturing in the Eola Field, Garvin County, Oklahoma, Oklahoma Geological Survey Open-File Report OF1-2011 (2011); Ohio Dept. of Nat. Resources, Executive Summary: Preliminary Report on the Northstar 1 Class II Injection Well and the Seismic Events in the Youngstown, Ohio Area (2012).

[273] Schultz, Ryan, et al., *Hydraulic Fracturing-Induced Seismicity*, 58 REVIEWS OF GEOPHYSICS e2019RG000695 (2020).

[274] Van der Elst, et al. 2013.

[275] Gallegos, T. J., B. A. Varela, S. S. Haines, and M. A. Engle, *Hydraulic fracturing water use variability in the United States and potential environmental implications*, 51 WATER RESOUR. RES. 5839–45 (2015).

[276] U.S. Government Accountability Office, Oil and Gas: Information on Shale Resources, Development, and Environmental and Public Health Risks, GAO-12-732, at 33 (2012).

[277] *See, e.g.*, Owen, Megan A., *Estimating the Audibility of Industrial Noise to Denning Polar Bears*, 85 JOURNAL OF WILDLIFE MANAGEMENT 384 (2021); Mejia, Elizeth Cinto, *Large-scale manipulation of the acoustic environment can alter the abundance of breeding birds: Evidence from a phantom natural gas field*, 56 JOURNAL OF APPLIED ECOLOGY 2091–2101 (2019); Sawyer, Hall, et al., *Long-term effects of energy development on winter distribution and residency of pronghorn in the Greater Yellowstone Ecosystem*, 1 CONSERVATION SCIENCE AND PRACTICE e83 (2019).

assess Willow's impacts on a number of resources, including but not limited to climate change, water resources, wetlands, wildlife, air quality, subsistence, and public health. We highlight a few specific resource concerns below, but given the lack of a formal scoping period, the concerns raised below are not exhaustive. To comply with NEPA, BLM must fully reevaluate the impacts of all alternatives under consideration in the SEIS to all resources that are likely to be impacted.

1. Habitat Fragmentation & Biodiversity Impacts

It is well understood that habitat fragmentation can compromise biodiversity through the loss and breaking apart of habitat.[278] The Willow Plan EIS must analyze how the Willow project will significantly fragment the landscape of the northeastern Reserve. Emphasis should be placed on the movement of wildlife, particularly caribou, across the landscape and how aquatic systems and flows will be altered by gravel mining, gravel road development, ice road and pad development, and the construction of infrastructure. Industrial development and activity may also fragment the landscape for subsistence hunters and other natural resource users. Habitat fragmentation should be considered when analyzing the impacts to both ecological and social values, and should also be studied within the cumulative effects analysis. Additionally, how fragmentation will impact the values and biological and physical properties of the Teshekpuk Lake and Colville River Special Areas must be thoroughly analyzed.

Within a week of taking office, President Biden signed an executive order that announced his commitment to protecting 30% of U.S. land and water — over 720 million acres — by 2030.[279] On May 6, Interior, in conjunction with other resource management agencies and departments, published *Conserving and Restoring America the Beautiful*, a preliminary report about the "30 by 30 plan."[280] In achieving 30 by 30, there is no single area of public land that can contribute more acreage to the 30% goal than the Reserve. Permitting Willow — with its proposed spiderweb of gravel roads, pads, airports, ice roads and bridges, massive central processing facility, and its function as a catalyst to further westward development in the Reserve — is plainly inconsistent with the goal of conserving and restoring the health and productivity of our nation's lands and waters. BLM must fully consider how Willow will impact biodiversity in the northeastern Reserve and outside of its boundaries, and explain whether and how Willow is consistent with national goals regarding conservation and restoration.

2. Caribou and Terrestrial Mammals

The Willow project is within the highest-use portion of the Teshekpuk Caribou Herd's range,[281] and it poses a particularly significant threat to the herd.[282] The Teshekpuk Caribou

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[278] Fahrig, Lenore, *Effects of habitat fragmentation on biodiversity*, 34.1 ANNUAL REVIEW OF ECOLOGY, EVOLUTION, AND SYSTEMATICS 487-515 (2003); Haddad, et al., *Habitat fragmentation and its lasting impact on Earth's ecosystems*, 1.2 SCIENCE ADVANCES e1500052 (2015); Lewis J. Bartlett, et al., *Synergistic impacts of habitat loss and fragmentation on model ecosystems*, 283 PROCEEDINGS OF THE ROYAL SOCIETY B 20161027 (2016).
[279] E.O. 14008, Tackling the Climate Crisis at Home and Abroad, §§ 219–23 (Jan. 27, 2021).
[280] U.S. DEPARTMENTS OF THE INTERIOR, AGRICULTURE AND COMMERCE, AND THE WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY, CONSERVING AND RESTORING AMERICA THE BEAUTIFUL (May 6, 2021).
[281] Willow FEIS, Appx. A.1, Fig. 3.12.2.
[282] Willow FEIS at 165-166.

Herd is the only herd in which the majority of animals overwinter on the Arctic coastal plain, leaving them in contact with potential industrial activities year-round, including during the busy winter season.[283] The Teshekpuk Caribou Herd uses areas within and near the project area for overwintering, migration, calving, post-calving, and insect relief.[284] Because no other caribou herd overwinters on the coastal plain, where Arctic oil and gas development has historically occurred in Alaska, no herd has previously been exposed to intensive development in its year-round range.[285] The effects from this type of year-round exposure are potentially significant.

BLM must fully consider the direct and cumulative effects of Willow and other recent and potential development on caribou, particularly the impacts of winter exposure to activities. Winter is a critical time for caribou. Foraging opportunities are limited during the winter and caribou rely on body stores of energy for survival and gestation.[286] Studies in other ungulate species of displacement and altered habitat use due to energy development have noted that fitness costs are likely greater during winter, when individuals already exhibit a negative energy balance.[287] Further energetic costs at such a time may lead to loss of body mass and depletion of vital energy reserves.[288] There has been little study of winter responses by caribou to industrial development and activity in Alaska. Nonetheless, studies from Canada reveal that disturbances, such as loud noises, can lead to flight responses in caribou,[289] causing them to expend additional energy, and that caribou may avoid human infrastructure and disturbance in the winter.[290] Any extra expenditure of energy that caribou undertake as a result of interaction with oil and gas activity or developments is of concern as reproductive success in caribou is strongly correlated with nutritional stress.[291] Late winter body mass of female caribou has been strongly linked to calf production and survival,[292] potentially influencing population growth rates. While caribou

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[283] B. T. Person *et al.*, *Distribution and Movements of the Teshekpuk Caribou Herd 1990-2005: Prior to Oil and Gas Development*, 60 ARCTIC 238, 249 (2007) [Person *et al.* 2007]; T. J. Fullman *et al*., *Variation in winter site fidelity within and among individuals influences movement behavior in a partially migratory ungulate*, 16(9) PLoS ONE e0258128 (Sept. 30, 2021) [Fullman *et al*. 2021].
[284] Person *et al.* 2007; R. R. Wilson *et al.*, *Summer Resource Selection and Identification of Important Habitat Prior to Industrial Development for the Teshekpuk Caribou Herd in Northern Alaska*, 7 PLoS ONE e48697 (2012); Fullman *et al*. 2021.
[285] 2012 IAP Final EIS at 4-198.
[286] P. S. Barboza & K. L. Parker, *Allocating Protein to Reproduction in Arctic Reindeer and Caribou*, 81 PHYSIOLOGICAL AND BIOCHEMICAL ZOOLOGY 835 (2008); J. Taillon *et al*., *Nitrogen allocation to offspring and milk production in a captial breeder*, 94 ECOLOGY 1815 (2013).
[287] J. M. Northrup *et al*., *Quantifying spatial habitat loss from hydrocarbon development through assessing habitat selection patterns of mule deer*, 21 GLOBAL CHANGE BIOLOGY 3961 (2015).
[288] C. J. A. Bradshaw *et al.*, *Energetic implications of disturbance caused by petroleum exploration to woodland caribou*, 76 CANADIAN JOURNAL OF ZOOLOGY 1319 (1998) [Bradshaw *et al.* 1998].
[289] C. J. A. Bradshaw *et al.*, *Effects of petroleum exploration on woodland caribou in northeastern Alberta*, 61 JOURNAL OF WILDLIFE MANAGEMENT 1127 (1997); Bradshaw *et al.* 1998.
[290] C. J. Johnson & D. E. Russell, *Long-term distribution responses of a migratory caribou herd to human disturbance*, 177 BIOLOGICAL CONSERVATION 52 (2014); S. Plante *et al.*, *Human disturbance effects and cumulative habitat loss in endangered migratory caribou*, 224 BIOLOGICAL CONSERVATION 129 (2018) [Plante *et al.* 2018].
[291] R. D. Cameron *et al*., *Central Arctic Caribou and Petroleum Development: Distributional, Nutritional, and Reproductive Implications*, 58 ARCTIC 1 (2005) [Cameron *et al.* 2005].
[292] S. D. Albon *et al.*, *Contrasting effects of summer and winter warming on body mass explain population dynamics in a food-limited Arctic herbivore*, 23 GLOBAL CHANGE BIOLOGY 1374 (2017); Cameron *et al.* 2005; V. Veiberg

exhibit the lowest annual movement rates during the winter,[293] this does not imply a lack of awareness or response to their environment. Studies of European reindeer found vigilance is usually highest in winter, compared to other seasons.[294] A study in Canada found that caribou avoided human settlements more strongly in winter than summer, resulting in a greater impact to winter range due to development.[295] Previous development to the east of the Reserve has taken place in an area that is now mostly abandoned by caribou (the Central Arctic Herd) in the winter, making it especially important that Willow's winter impacts be fully considered and that extra precautions be taken to avoid negative impacts to overwintering caribou.

BLM should also carefully consider the effects of proposed infrastructure on caribou migration and movement, and access to preferred habitat. Impediments to migration can have strong negative effects on ungulate populations,[296] making it very important that presence of infrastructure and industrial activities in movement corridors be analyzed and mitigation measures adopted to minimize impacts. Consideration of caribou migratory pathways from collared animals using this area (including those from other Arctic herds), observations from subsistence hunters in Nuiqsut and other traditional knowledge holders, and recent scientific studies of caribou response to infrastructure[297] should be considered in evaluating the impacts of infrastructure and development activities. BLM should also consider recent analyses of site fidelity among caribou and caribou herds, which focused on caribou in the Reserve.[298] The Teshekpuk Caribou Herd exhibits strong winter fidelity, with low individual fidelity, creating within-species diversity, which can have potential species-level effects.[299] Site fidelity by caribou can also be an important indicator of higher-quality habitat[300] and, depending on time of year and purpose or importance of a habitat area, caribou could exhibit direct or exploratory movements to reach the area.[301] An additional consideration is how habitat use may change in the future in areas that may be impacted by the project. Research on the Porcupine Caribou Herd in northwestern Alaska found that the distribution of adult female caribou during the calving and post-calving periods can be predicted by environmental factors like timing of snow melt and

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et al., *Maternal winter body mass and not spring phenology determine annual calf production in an Arctic herbivore*, 126 OIKOS 980 (2017).

[293] Person *et al.* 2007; A. K. Prichard *et al.*, *The Effect of Frequency of Telemetry Locations on Movement-rate Calculations in Arctic Caribou*, 38 WILDLIFE SOCIETY BULLETIN 78 (2014).

[294] E. Reimers *et al.*, *Effects of hunting on response behaviors of wild reindeer*, 73 JOURNAL OF WILDLIFE MANAGEMENT 844, 849 (2009) (citing E. Reimers *et al.*, *Frykt og fluktavstander hos villrein*, 14 VILLREINEN 76 (2000)).

[295] Plante *et al.* 2018.

[296] D. T. Bolger *et al.*, *The need for integrative approaches to understand and conserve migratory ungulates*, 11 ECOLOGY LETTERS 63, 64 (2008).

[297] *See, e.g.,* R. R. Wilson *et al.*, *Effects of roads on individual caribou movements during migration,* 195 BIOLOGICAL CONSERVATION 2 (2016); H. E. Johnson, *Caribou Use of Habitat Near Energy Development in Arctic Alaska*, 84 JOURNAL OF WILDLIFE MANAGEMENT 401 (2020).

[298] T. Fullman *et al.* 2021; K. Joly, *Seasonal patterns of spatial fidelity and temporal consistency in the distribution and movements of a migratory ungulate*, 11 ECOLOGY AND EVOLUTION 8183 (2021) [Joly et al. 2021].

[299] *See* Fullman *et al.* 2021 at 14–15.

[300] *See* Joly *et al.* 2021.

[301] *Id.*

greening of vegetation.[302] Projecting these selection patterns into the future based on reasonable climate change scenarios shows increased use of the Alaskan coastal plain during the calving and post-calving periods.[303] While this work has not been applied to northwestern Alaska, any influences of climate-induced shifts to habitat and phenology (environmental timing) that might affect use by caribou should be considered by BLM for their potential effects on caribou coming into contact with oil and gas exploration and development. Accordingly, BLM should carefully evaluate the relative habitat-quality of areas that may be disturbed by the project.

When considering direct and indirect impacts, it is important that the potential for habituation to disturbance not be overstated, but that a realistic and science-based view be taken. There is not clear evidence for habituation of caribou to infrastructure. Recent work with migratory caribou in Canada showed that caribou continued to avoid even well-established infrastructure, leading the authors to suggest that long-term habituation was unlikely.[304] Similarly, recent studies of the Central Arctic Herd, just to the east of the Reserve, found continued avoidance of infrastructure over a 40-year period, despite use of technology and infrastructure design intended to reduce impacts to caribou.[305] This avoidance occurs not only during the calving and post-calving seasons, but also during mosquito harassment, when female caribou continue to avoid infrastructure more than expected by chance, despite insect effects.[306] Other ungulate research has shown a similar lack of habituation, such as a study that showed mule deer (*Odocoileus hemionus*) did not habituate to energy development even after a 15-year period and intensive mitigation efforts.[307] A recent study in Canada also showed that woodland caribou exposed to winter drilling activities were more likely to avoid well sites during drilling, that the largest impacts to caribou occur when the presence of humans and human activity is at its highest, and that impacts from winter activities may be reduced by, among other management practices, considering timing restrictions on drilling and minimizing human activity at well sites.[308] Caribou select habitat further away from well sites relative to activity on the well site,[309] and the impacts on caribou from "increased encounters with humans and decreases in home range size because of anthropogenic disturbance can result in increased stress, increased energetic expenditure, reduced body mass, and potentially reduced calving rates."[310]

BLM must also evaluate the potential impacts from construction, drilling, operation, and eventual reclamation of Willow infrastructure on other species of terrestrial mammals and their habitats. Besides caribou, other mammals occurring in the area include muskoxen, grizzly bear, fox, wolverine, and small furbearers. Terrestrial mammals may experience habitat alteration

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[302] J. P. Severson, *Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future*, 27 GLOBAL CHANGE BIOLOGY 4546 (2021).
[303] *Id*.
[304] Plante et al. 2018.
[305] Johnson et al. 2020; A. K. Prichard et al., *Caribou Distributions and Movements in a Northern Alaska Oilfield*, 84 JOURNAL OF WILDLIFE MANAGEMENT 1483 (2020).
[306] Johnson et al. 2020.
[307] H. Sawyer *et al.*, *Mule deer and energy development – Long-term trends of habituation and abundance*, 23 GLOBAL CHANGE BIOLOGY 4521 (2017).
[308] D. MacNearney et al., *Woodland caribou (Rangifer tarandus) avoid wellsite activity during winter*, 29 GLOBAL ECOLOGY AND CONSERVATION 1, 9-10 (2021).
[309] *Id.* at 6.
[310] *Id.* at 9 (internal citations omitted).

from roads and other infrastructure fragmenting their habitat, and from changes to vegetation and hydrology from gravel infrastructure and related dust deposition from gravel roads. Ice roads and construction activities during the winter have the potential to displace and disturb Arctic fox, caribou and muskoxen that may be present in the winter months. Terrestrial mammals may also be impacted by direct mortality from vehicle collisions or interactions with oil field workers fearing threats to health and safety, and experience decreased survival and productivity from stress. Finally, noise from aircraft may negatively impact these species. BLM must analyze how the presence of a new airstrip and shifting aircraft patterns may disturb or displace terrestrial mammals. In sum, BLM must analyze the direct, indirect, and cumulative effects of Willow on terrestrial mammals in the project area.

3. Polar Bears

The SEIS must fully and meaningfully analyze Willow's potential impacts to threatened Southern Beaufort Sea (SBS) polar bears. The project and its associated activities occur within both designated critical habitat and areas that are characteristic of terrestrial denning habitat.[311] The prior EIS contained numerous legal and analytical flaws in its consideration of impacts to polar bears and failed to comply with NEPA, as well as the ESA and MMPA, as described above.[312] Those shortcomings must be rectified through this SEIS process.

The polar bear was listed as threatened under the ESA in 2008 and is also federally protected under the MMPA.[313] Of the two polar bear populations (or stocks) found in the United States, the SBS population is the most likely to occur in the nearshore Beaufort Sea. Threatened polar bears den on state and federal lands on the North Slope and are denning onshore and using onshore habitat with increasing frequency for other activities.

Polar bear populations have already been reduced to a precarious state due to impacts from climate change, which will only increase as warming in the Arctic region continues. Polar bears are particularly vulnerable to sea ice melt given their life history and specialized habitat needs. The SBS stock has already suffered from dramatic losses in sea ice and is in decline.[314] The most recent estimate for the SBS stock was 900 bears in 2010, representing a 50 percent decline since the 1980s.[315] According to FWS's 2021 stock assessment, the minimum population estimate for the SBS stock is considerably lower: 782.[316]

The SEIS should include an accurate, quantitative analysis of potential impacts to denning bears and cubs. Industrial activities may significantly disturb polar bears at maternal den sites, with polar bears reacting in a variety of ways depending on factors such as the level of

[311] Willow FEIS vol. 2, appx. A.1, Figures 3.13.4 & 3.13.6.
[312] *Supra* Section II.
[313] Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range, 73 Fed. Reg. 28,212 (May 15, 2008).
[314] J.F. Bromaghin et al., *Polar Bear Population Dynamics in the Southern Beaufort Sea During a Period of Sea Ice Decline*, 25 ECOLOGICAL APPLICATIONS 634 (2015).
[315] U.S. Fish & Wildlife Serv., Marine Mammal Protection Act; Stock Assessment Reports for Two Stocks of Polar Bears, 86 Fed. Reg. 33,337, 33,342 (June 24, 2021) [hereinafter 2021 SBS Assessment].
[316] *Id*. at 33,338.

exposure and distance of the den site from the industrial activity.[317] As the Service recognized, "it is thought that successful denning, birthing, and rearing activities require a relatively undisturbed environment."[318] Bears that are forced to den onshore are increasingly vulnerable to human encroachment, and denning females disturbed by human activities, including oil and gas activities, may abandon their dens, causing a loss of cubs.[319]

Willow will increase stress to polar bears that are using both unpredictable sea ice and coastal regions. Increased anthropogenic noise from the construction and operation of Willow may impact denning, feeding, mating, rearing young, and result in direct injury to bears from hazing. Industrial activities will also increase the risks of spills and other sources of pollution with little information on whether such spills may be effectively cleaned up in Arctic sea ice. Finally, there is an increased risk of mortality due to increased human-polar bear conflicts. BLM must fully analyze the potential impacts to threatened and already-declining polar bear populations. BLM must also analyze and assess the effectiveness of potential mitigation measures to reduce impacts to polar bears in the SEIS.

In particular, the SEIS must adequately consider the impacts of increased human-bear encounters. Increased use of coastal habitat has led to a significant increase in the harassment of polar bears by humans. Although hazing seeks to reduce the number of polar bears killed in defense of life or property, it is well known that polar bears have extremely high energy demands, and conserving energy is vital to their survival.[320] As such, harassment that results in movement, as hazing is intended to do, could lead to significant metabolic costs, especially if the metabolic response is sustained over an extended period of time.[321] Harassment resulting in bears leaving the area will always have a high metabolic cost.[322] Even at relatively slow speeds, bears can expend 13 times more energy responding to a hazing event than they otherwise would.[323] For female polar bears, energetic stress can lead to forgoing reproduction and persistent deferral could further threaten this declining species.[324] FWS's prior authorization for Willow determined that two polar bears would be directly injured from hazing over the life of the project.[325] Although the Willow FEIS acknowledged that increasing oil and gas activities in Alaska's Arctic are happening concurrent with bears spending more time on land, leading to an increase in human-polar bear interactions, the FEIS did not consider the actual impacts to bears as a result of hazing. Instead, the FEIS concludes that "[d]espite the increase in human-bear interactions in existing oil fields in recent years, virtually no lethal take or injury of polar bears have been

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[317] Marine Mammals; Incidental Take During Specified Activities, 81 Fed. Reg. 52,276, 52,292 (August 5, 2016) [hereinafter Aug. 2016 Specified Activity Incidental Take].
[318] *Id.* at 52,286.
[319] *See, e.g.*, S.C. Amstrup, *Human Disturbances of Denning Polar Bears in Alaska*, 46 ARCTIC 246 (1993).
[320] *See, e.g.*, S. Schliebe et al., Range-wide status review of the polar bear (*Ursus maritimus*) (December 21, 2006) at 15, 76, 85.
[321] P.D. Watts et al., *Energetic Output of Subadult Polar Bears (Ursus maritimus): Resting, Disturbance, and Locomotion*, 98 COMPARATIVE BIOCHEMISTRY & PHYSIOLOGY PART A: PHYSIOLOGY 191 (1991).
[322] *Id*. at 192.
[323] Schliebe, *supra* note 317 at 75.
[324] *Id*. at 20.
[325] U.S. FISH AND WILDLIFE SERV., BIOLOGICAL OPINION FOR WILLOW MASTER DEVELOPMENT PLAN 133 (2020) [hereinafter Willow BiOp].

reported."[326] But this is contrary to evidence before the agency, and indeed, hazing does cause direct injury to polar bears. According to one oil company, hazing of polar bears at its facilities in and around the Beaufort Sea more than tripled in recent years compared to the three years prior, with 14 bears harassed in 2016 alone.[327] Moreover, FWS determined that the Willow project is reasonably certain to cause direct injury of polar bears.[328] The SEIS must consider these impacts. BLM must also analyze the population-level risk of increased human-bear interactions in light of industry expansion in the Reserve and increasing polar bear use of terrestrial habitats.

BLM must consider all impacts to SBS bears from noise and disturbance associated with the Willow project both onshore and offshore. Willow will result in increased traffic in coastal waters as equipment will be transported by barges, ships, and other vessels. Additionally, ConocoPhillips' plan to move equipment and modules on ice roads would impact polar bears and traverse through polar bear critical habitat.[329] The FEIS acknowledges that Willow presents "a potential for noise and/or physical human presence to cause female bears searching for den locations to be displaced or abandon a den with cubs," but concludes that because much of Willow's infrastructure is more than five miles from the coast that such impacts would be minimized.[330] This overlooks the extensive amount of traffic and activities from Willow that would occur near the coast, and ignores the serious impacts that disturbance from traffic and other industrial activities would have on denning bears. The FEIS thus failed to analyze the potential for impacts to bears from human-bear encounters, despite such encounters being likely to occur. The SEIS must rectify this oversight.

Indeed, BLM has elsewhere acknowledged that "possible impacts on polar bears exposed to noise potentially include disruption of normal activities, displacement from foraging and denning habitats, and displacement of maternal females and young cubs from dens."[331] Polar bears are particularly vulnerable to anthropogenic disturbance during denning as compared to other times in their life cycle.[332] Displacement of a mother bear from her den will adversely affect the mother and is likely to result in death for any cubs. Displacement from preferred foraging areas near the project will increase the bears' metabolic costs and nutritional stress. In combination with the displacement occurring from other existing and proposed development on the North Slope, the impacts from Willow could be significant. BLM must take a hard look at the direct, indirect, and cumulative impacts of the Willow project on polar bears.

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[326] Willow FEIS vol. 1 at 205.
[327] T.C. Atwood et al., *Rapid Environmental Change Drives Increased Land Use by an Arctic Marine Predator*, 11 PLOS ONE e0155932 at 12 (2016).
[328] Willow BiOp at 133.
[329] Willow BiOp at 92 (map of Willow project area overlaid on polar bear critical habitat); Willow FEIS vol. 2, appx. A.1, Figures 3.13.4 & 3.13.6.
[330] Willow FEIS vol. 1 at 204.
[331] BUREAU OF LAND MGMT., DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE COASTAL PLAIN OIL AND GAS LEASING PROGRAM (2019) at 3-137.
[332] Steven C. Amstrup, *Polar Bear, Ursus Maritimus, in* WILD MAMMALS OF NORTH AMERICA: BIOLOGY, MANAGEMENT, AND CONSERVATION 587, 606 (G. A. Feldhamer, B. C. Thomson & J. A. Chapman (eds.), John Hopkins Press 2003).

To the extent BLM and FWS utilize modeling to assess the potential impacts to denning bears from disturbance, the agencies must ensure that modeling is accurate and does not downplay the likelihood of impacts. The recent Wilson and Durner study presents a model for quantitatively evaluating the impacts to denning mothers and cubs specifically on the Arctic Refuge Coastal Plain from an area-wide seismic survey, taking into account the impact of mitigation measures such as time and place restrictions, and aerial infrared surveys to detect dens.[333] While FWS used this model for purposes of assessing take in the Willow BiOp, the modeling approach and its results were never made available for public comment. If the agencies perform another quantitative model for the SEIS, the model, its results, and any analysis relied on in the model — published and unpublished — should be included in the draft SEIS so that the public has an opportunity to understand and comment on its implementation and results.

Finally, the SEIS must analyze the effects of the GHG pollution resulting from the Willow Project in isolation, and in combination with other oil and gas activities in the Arctic on the survival and recovery of polar bears. The FEIS failed to do so. While the FEIS acknowledges that polar bears are threatened by sea ice loss,[334] it does not acknowledge how the direct, indirect, and cumulative impacts of Willow will affect the likelihood of sea ice loss stabilizing at the established recovery thresholds. The FEIS otherwise fails to adequately consider the high probability of the extirpation of the SBS polar bear population without significant reductions in GHG pollution to stem sea ice loss. Simply put, increased oil and gas development from Willow and the westward development it would enable will increase GHG pollution, thereby exacerbating the primary threat to polar bears and frustrating recovery. BLM's SEIS must acknowledge this reality and address how the Willow project, in addition to other existing and future development in polar bear critical habitat, can be consistent with the recovery of polar bears.

4. Marine Mammals

BLM must consider the full temporal and geographic scope of this project on polar bears and other marine mammals as well as coastal habitat. The Willow Plan proposes the upgrade and use of the Oliktok Dock for barging modules to the project area. Significant impacts to marine mammals will be caused by acoustic disturbance and displacement from vessel traffic and construction to upgrade the dock. Additional impacts would occur due to traffic onshore, including in polar bear critical habitat, and annual construction of an ice bridge across the Colville River. Marine mammals would also be significantly impacted by Willow's GHG emissions, which would exacerbate impacts from climate change already being felt in the project area and well beyond. These impacts must be fully considered under NEPA and other relevant laws applicable to marine mammals.[335]

Traffic impacts from Willow will directly impact the Chukchi Sea, Beaufort Sea, Bering Sea, and Gulf of Alaska waters as support vessels and equipment will transit through most or all of Alaska's coastal areas to reach Atigaru Point and Harrison Bay. This long trip to transport ConocoPhillips' modules means a higher potential to impact a variety of marine species in these

[333] Ryan R. Wilson & George M. Durner, *Seismic Survey Design and Effects on Maternal Polar Bear Dens*, 84 J. OF WILDLIFE MGMT. 201–12 (2020).
[334] Willow FEIS vol. 1 at 187.
[335] *Supra* Section II (legal mandates).

traversed waters. A wide range of marine mammals use these potentially affected waters, including: North Pacific right whales; bowhead, gray, humpback, fin, Minke, Orca, and beluga whales; harbor porpoises; Pacific walruses; Steller sea lions; and polar bears. Many species of ice seals are also present including: bearded seals, ringed seals, harbor seals, spotted seals, and ribbon seals. BLM must consider the impacts from Willow on these species, and consult with NMFS and FWS as appropriate for threatened and endangered species. BLM must fully consider the Willow's impacts in terms of contributions to chronic ocean noise on the acoustic environment and vessel strikes of marine mammals, particularly comparing impacts of barging in modules, as proposed by ConocoPhillips.

Relatedly, the EIS should not solely consider alternatives where the company transports pre-fabricated project components to the North Slope in modules. To fulfill NEPA's requirements to consider a reasonable range of alternatives, BLM should compare the tradeoffs in impacts by considering an alternative that would require ConocoPhillips to construct Willow at the project location, as was done for Alpine and other oil and gas facilities nearby.