# APPENDIX W

## Past, Present, and Reasonably Foreseeable Actions

# APPENDIX W: PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

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## Table of Past, Present, and Reasonably Foreseeable Actions

# APPENDIX W-1: TABLE OF PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

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**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| **Non-jurisdictional Facilities** | | | | | | |
| Point Thomson Unit (PTU) Expansion Project | Expansion of Central Pad, drilling of three new production wells, one new injection well, and conversion of one injection well to a production well. Dredging of 5,000 cubic yards for delivery of facilities and material, with screeding as required. Removal of three existing mooring dolphins. Annual winter ice road and barging/sealift for transportation of personnel, materials, equipment, and equipment modules. | 14 acres | Construction of East Pad and its associated access road previously permitted, but not constructed. Some drilling and construction of facilities commenced in 2009 to initiate production of condensate through gas reinjection. This initial development is intended to support full-field development upon completion of the Alaska LNG Project. Initial facilities commenced operation in 2016. Expansion proposal approved by Alaska Department of Natural Resources (ADNR) Division of Oil and Gas (DOG) in December 2017 (ADNR, 2017d). Construction of planned facilities, previously planned to commence in 2019, has been deferred based on a 2018 agreement with the ADNR to stay a deadline in a 2012 agreement with Exxon (Petroleum News, 2018d). | Except for an annual winter ice road, most facilities are about 60 miles east of the Alaska LNG Project's GTP and Mainline Pipeline. The Alaska LNG Project's PTTL extends to the PTU East Pad. | PTU facilities are within the Maguire Islands-Frontal Beaufort Sea watershed, which also contains a portion of the PTTL. | A, AR, C, GS, GW, LS, LU, M, N, R, RT, S, SW, V, VG, WL, VT, W |
| Prudhoe Bay Unit (PBU) Major Gas Sales (MGS) Expansion Project | Expansion of one well pad, three 48-inch aboveground gas pipelines, four aboveground byproduct pipelines of undetermined diameter totaling 44 miles in length, about 10 new production and injection wells, an undetermined number of well makeovers, possible 5-mile-long gas pipeline of undetermined diameter, possible construction work camp on existing pad. | 514 acres | In planning stage. Permit applications have not been submitted. | Some facilities are in immediate vicinity of Alaska LNG Project. | Yes | A, AR, C, GS, GW, LS, LU, M, N, R, RT, S, SW, V, VG, WL, W |

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| Kenai Spur Highway Relocation | Relocation of a 1.3-mile segment of the highway, which currently traverses the Alaska LNG Liquefaction Facilities site. | 93 acres | Routing studies complete, public involvement is in progress. As of August 2018, a preferred alignment has been selected, with a length of 3.9 miles. | Facilities are in immediate vicinity of Alaska LNG Project. | Yes | A, C, GS, LU, N, RT, V, VG, WL |
| In-state Gas Interconnections | A minimum of three offtake points to facilitate future natural gas pipeline laterals extending from the Alaska LNG Project Mainline Pipeline to various end users. | Fairbanks lateral would be a minimum of 30 miles long, affecting at least 364 acres. Interconnects for Anchorage and Kenai would tie into existing pipelines, and consequently may not require lateral pipelines; aboveground facilities (i.e., metering, valving, pressure regulating, etc.) assumed to affect approximately 5-10 acres for each interconnect. | Three interconnection points have been planned along the Alaska LNG Project's Mainline Pipeline. Any laterals would be built by third parties; none are currently proposed. | Pipeline laterals would tap off Alaska Project LNG Mainline Pipeline. | Yes | A, AR, C GS, GW, LS, LU, N, R, RT, S, SW, V, VG, WL, W |
| Kenai Water System Upgrades | To provide water for the proposed Liquefaction Facilities, the City of Kenai would upgrade its municipal water system with two new wells, yard piping at an existing well site, and possible expansion of its water treatment plant from 1.5 to 2.5 million gal/day. The City would also erect two new distribution pumphouses, replace about 500 feet of distribution piping, and lay a new 6.1-mile-long, 16-inch-diameter water pipeline extending from the western end of the existing water distribution system to the Liquefaction Facilities. | Unknown | AGDC and the City of Kenai have engaged in preliminary discussions regarding extension of service and water system upgrades; preliminary engineering studies have been completed. | Pipeline would connect with Liquefaction Facilities. Other water system upgrades would be within several miles of Liquefaction Facilities. | Yes | A, GS, GW, LU, N, RT, S, V, VG, WL, W |

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| **Energy Infrastructure Projects** | | | | | | |
| Accumulate Energy Alaska | Drilling and testing of an exploratory well from the Franklin Bluffs pad adjacent to the Dalton Highway near Alaska LNG MP 40. The surface area occupied by the Icewine No. 2 Project will be about the same as used for the Icewine No. 1 (ADNR, 2016a). Exploration wells (Charlie No. 1 and Bravo No. 1) are also planned in the Kuparuk basin, which entails building 32 miles of ice road from the Franklin Bluffs pad, crossing the Alaska LNG Project corridor. | 98,182 acres under lease | Icewine No. 1 completed in 2015 and 2-D seismic information acquired in 2016. Icewine No. 2 drilled in June 2017, and is in production. Two new exploration wells (Bravo No. 1 and Charlie No. 1) approved; drilling planned in 2019 (Petroleum News, 2018e), (Alaska Journal of Commerce [AJC], 2018d). | 4 miles east (Icewine) and 25/30 miles west (Charlie/Bravo) of Alaska LNG Project | Icewine wells – Yes<br>Charlie/Bravo wells – No | A, AR, GS, GW, LS, LU, R, RT, S, SW, V, VT, VG, WL, W |
| Alliance Exploration | Alliance proposes to conduct exploratory drilling on newly unitized state oil and gas (O&G) leases (Guitar Unit). A test well is planned for 2019 with a second well a year later (Petroleum News, 2017a). Full development is dependent on results of the test well program. | Unknown, pending permit application | Unitization and plan of exploration approved by ADNR DOG in August 2017. Initial exploratory well is planned for 2019, pending permitting. | 6 miles west of Alaska LNG Project | No | A, RT, S, V |
| Nanushuk Project | Armstrong Energy LLC proposed to develop its oil and gas leasehold. The Nanushuk Project consists of three drill pads, one of which will include a central processing facility, an operations center, 25 miles of new access roads, 14 miles of in-field pipelines, and a 25-mile-long oil export pipeline. The project also includes temporary discharges to 5.8 acres of jurisdictional waters of the U.S. for screeding activities at the existing Oliktok Dock (COE, 2018b). | 288 acres | Draft Environmental Impact Statement (EIS) released by the U.S. Army Corps of Engineers (COE) in September 2017. Final EIS issued in November, 2018. Project expected to come online 2021.<br>Associated Pikka B and C exploratory wells planned for February, 2019 (AJC, 2018a). | 52 miles west of Alaska LNG Project | No | S |

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|---|---|---|---|---|---|---|
| Beaufort Sea and Chukchi Sea area oil and gas leasing | Oil and gas development with target area focus on the northern Yukon Territory, Banks Island, Victoria Island, and Beaufort Sea (Lin Callow and LTLC Consulting, 2013). In 2008, 29.3 million acres were offered for lease and 2.7 million were leased in the Chukchi Sea. In 2007, 8.7 million acres were offered in the Beaufort Sea and 0.5 million acres were leased (BOEM, 2017c). Department of the Interior proposed in January 2018 to expand oil and gas leasing in both Beaufort and Chukchi Sea areas, and is preparing an EIS for a 2019 lease sale. | Chukchi Sea – unknown; no specific projects proposed.<br>Beaufort Sea – Specific projects in the Beaufort Sea are identified in this table.<br>Department of the Interior's planned 2019 lease sale could open up to 65 million acres of federal Arctic waters to oil and gas drilling. | Beaufort Sea: Ongoing<br>Chukchi Sea: No known exploration plans in the Chukchi Sea.<br>Department of the Interior is planning an oil and gas lease auction in 2019 (SB Global Platts, 2018) | Use of the same marine transportation corridors as Project construction | Yes | A, AR, LS, M, S |
| Brooks Range Petroleum (BRP) Development - Mustang Oil Project | BRP has conducted exploratory drilling for onshore oil on Alaska's North Slope. Ultimate development would potentially include an oil processing facility and drilling up to 31 production and injection wells (AJC, 2018c). | BRP currently holds 8,960 lease acres on the Southern Miluveach Unit and 16,487 acers at the Kachemach Unit. In July 2017, BRP requested an additional 19,552 acres from 11 leases north, west, and northeast of the North Slope Unit (Petroleum News, 2017e). | Ongoing. In November 2017, BRP conducted flow tests on its North Tarn Well No. 1. BRP's plan envisages production commencing in 2019 (Petroleum News, 2018a). | 41 miles west of Alaska LNG Project | No | S |
| Caelus Energy LLC, Nuna Development | Nuna Development is an onshore pad designed to develop the southern part of the Torok reservoir that cannot be reached from Oooguruk Drill Site (ODS). Nuna, like ODS, would pay to use Kuparuk facilities to process its oil (ADNR, 2014c). | 22 acres (gravel pad) and 4-mile-long gravel road | The project was permitted in 2015. However, development has slowed due to low oil prices and oil tax credit uncertainty (Caelus Energy LLC, 2017). | 42 miles west of Alaska LNG Project | No | S |

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|---|---|---|---|---|---|---|
| Caelus Energy LLC, Oooguruk Unit | The existing Oooguruk Project includes a 6-acre gravel island about 5 miles offshore in 4.5 feet of water in Harrison Bay and a subsea flowline bundle connecting to an onshore tie-in pad (Caelus Energy LLC, 2017). As noted in ADNR DOG August update, drilling activities at currently postponed, but future, activities are planned with the pursuit of six new wells (ADNR, 2017c). | No specific additional acreage identified. | Drilling activities at Oooguruk Unit postponed through 2018 (Petroleum News, 2018f); planning future workover campaign and pursuit of six new wells. | 42 miles west of Alaska LNG Project | No | S |
| Cook Inlet Gas Gathering System (CIGGS) – Marine Pipeline Conversion | CIGGS proposes to convert a 10-inch-diameter, 21-mile-long natural gas pipeline that lies on the seabed of Cook Inlet to oil service. No physical changes to the existing pipeline are proposed. No heating or refrigeration is proposed. No changes to existing pump stations are proposed (Harvest Alaska, 2017). | No land or sea disturbance is anticipated from the conversion. Converted pipeline operation involves annual line inspection and remediation of any seabed support erosion beneath the line, utilizing sacks of custom-made cement mix for Cook Inlet. | Application for a right-of-way lease filed with ADNR September 2017. Conversion completed in October, 2018 | 4 miles northwest of Alaska LNG Project | Yes | None |

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| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| Cook Inlet area oil and gas development | Cook Inlet is a mature, petroleum-producing basin that has seen extensive exploration and development over the past 40 years (AOGA, 2015a).<br>Hilcorp Alaska has acquired numerous leases in the lower and middle Cook Inlet for oil and gas exploration and potential development.<br>Planned activities between 2019 and 2024 include two seismic surveys, approximately 22 exploratory wells, platform and pipeline maintenance/repair, three geohazard surveys, a well abandonment, and marine construction associated with land-based exploration and development on the Iniskin Peninsula. | In 2017, 1.09 million acres were offered for lease. A total of 76,615 acres of lease sales were completed (BOEM, 2017a).<br>Acreage affected by Hilcorp's activities is unknown. | In 2018 Hilcorp Alaska and Harvest Alaska, together with Alaska LNG, submitted a joint Petition for Incidental Take Regulations to U.S. Fish and Wildlife Service. The petition identifies numerous planned operational and exploratory oil and gas activities within Hilcorp's and Harvest Alaska's leaseholds in Cook Inlet between 2019 and 2024. | Various activities within middle and lower Cook Inlet; some are within 5 miles of Alaska LNG Mainline Pipeline crossing of Cook Inlet. | Yes | A, LS, M, RT, S, V, WL |
| Eni – Spy Island | Eni US proposes drilling up to four exploration wells, consisting of two extended reach mainbores and two sidetracks from Spy Island to Outer Continental Shelf, to evaluate the oil and gas resource potential of three of the company's Outer Continental Shelf (OCS) leases in the U.S. Beaufort Sea. Spy Island is located about 3 miles offshore in 6 to 8 feet of water off Oliktok Point (BOEM, 2017b). | None. Wells would be drilled from existing artificial island. The use of extended reach drilling allows for use of existing facilities. | BOEM approved the Initial Exploration Plan in 2017, and approved a revision to the Plan in April 2018 (BOEM, 2018).<br>Development drilling at Nikaitchuq Unit may resume late 2018 to 2019 (Petroleum News, 2018h). | 38 miles northwest of Alaska LNG Project | No | S |
| Furie Operating Alaska | New offshore gas wells and workover of existing offshore wells in Cook Inlet. The company's 2017 development plan called for completing the KLU-A1 well and drilling another to be completed later. | Uncertain. Work will use existing platforms; one or more new rigs could be erected in Cook Inlet. | The company has completed three wells in 2018 and plans to complete another by the end of 2018 (Petroleum News, 2018b). | 2 miles east of Alaska LNG Project | Yes | A, AR, GS, GW, LS, LU, M, R, RT, S, SW, V, VG, WL, VT, W |
| Hilcorp, Beluga River Unit | In early 2016, Hilcorp Alaska, LLC, became operator of the Beluga River Unit, one of the numerous units operated by Hilcorp in the Cook Inlet area (Petroleum News, 2017d). | None identified | Continued operation; no new wells identified | 5 miles east of Alaska LNG Project | Yes | A, AR, GS, GW, LS, LU, R, RT, S, SW, V, VG, WL, W |

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| Hilcorp, Moose Pad | Hilcorp is building a new pad, the Moose Pad, on the west side of the Milne Point Unit (MPU). The new pad will provide Hilcorp access to about 7 square miles of undeveloped oil reserves within the MPU. Initial development plans for Moose Pad will include developing up to 44 new wells. To support new oil production wells on Moose Pad, an oil production pipeline, a small tie-in pad, and new pad infrastructure will be installed (Mat-Su Valley Frontiersman, 2017). In August 2017, modification to flowline route was requested. | 17.2 acres (new well pad)<br>14 acres (est.) access road, aboveground oil pipeline (2.8 miles)<br>1 acre flowline realignment | Expected to commission new pad by January, 2019 (Petroleum News, 2018i). | 18 miles west of Alaska LNG Project | No | A, RT, S |
| Hilcorp, Liberty Development Project | Construction of artificial island to support drilling and production facilities, with 5.6 miles of buried offshore oil pipeline and 1.5 miles of onshore aboveground oil pipeline. Associated onshore activities include use of permitted water sources, construction of onshore gravel pads to support the pipeline tie-in location, onshore and offshore ice roads and ice pad construction, hovercraft shelter, small boat dock, and gravel mine site development west of the Kadleroshilik River (BOEM, 2017d). | 24-acre seabed footprint<br>25-acre mine site<br>Offshore pipeline would use a 1,500-foot-wide temporary strip for pipe burial (1,018 acres). | Final EIS issued by BOEM in September 2018 (Petroleum News, 2018i). Construction would occur over a 3-year period following permitting. | 25 miles east of Alaska LNG Project | No | A, RT, S, WL |
| Eva Creek Wind Project expansion and maintenance | Golden Valley Electric Association (GVEA) constructed a 24-megawatt wind farm on the ridges above the Eva Creek Valley, east of the Nenana River about 15 miles northeast of Healy, Alaska. The public and charitable lease to GVEA for constructing and operating the wind farm is for 25 years, subject to standard and special lease terms (GVEA, 2014). | 170 acres (GVEA, 2014) | Completed 2013. Operations and maintenance ongoing. | 9 miles east of Alaska LNG Project | No | A, RT, S, V, WL |

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| Golden Valley Electric Plant and Transmission Line | Proposed new gas-fired generating plant and electric transmission line from North Pole to Livengood (GVEA, 2017). | Unavailable | The North Pole Expansion Power Plant was completed in 2006 (GVEA, 2017). A transmission line to Livengood would most likely be dependent on the status of the Livengood Gold Project. A pre-feasibility study for the proposed mine was completed in 2016 (Tower Hill Mines, Ltd [Tower Hill], 2017).<br>Within the same footprint as the Mainline Pipeline. | 30 miles east of Alaska LNG Project | No | A, RT, S |
| ConocoPhillips, GMT-1, GMT-2, and Willow Oil Development | ConocoPhillips Alaska, Inc., has been approved for placement of 72.5 acres of fill material to construct the Greater Mooses Tooth 1 (GMT-1) and has filed an application for Greater Mooses Tooth 2 (GMT-2). GMT-1 includes a drill site, an access road, pipeline valve pads, pipelines, bridge abutments, communication equipment, and power lines for O&G production. GMT-2 would include a 14-acre drill pad, an 8.2-mile access road, an 8.6-mile pipeline, and up to 48 wells (BLM, 2018a). Oil, gas, and water produced from the reservoir would be carried via pipeline for processing. Sales-quality crude would be transported via the Alpine Oil Pipeline and Kuparuk Pipeline to the Trans Alaska Pipeline System (TAPS). Lean gas and Kuparuk-supplied seawater would be delivered via pipelines to the drill sites for injection into the reservoirs. Willow is a new discovery near GMT-2; reserves need to be better defined. | GMT-1 installed 12 miles of pipeline, 7.7 miles of gravel road, and 11 acres of gravel pad in 2017 (Petroleum News, 2017c). The gravel footprint for the GMT-2 Project would total 78 acres (BLM, 2018a). | GMT-1 facility construction is in progress and expected to begin producing by the end of 2018. DOI issued a Final Supplemental EIS for the GMT-2 project in 2018 (Petroleum News, 2018g). Willow is in the early permitting phase; BLM initiated a scoping period in August 2018 (AJC, 2018d). | 74 miles west of Alaska LNG Project | No | S |

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| ConocoPhillips, Kuparuk River Unit | Working to improve production at existing pads in Kuparuk River Unit and slowly expand facilities designed to target undeveloped areas in unit. | Unknown | Five rotary wells and 17 coiled tubing drilling sidetracks completed in 2018. Additional well workovers planned for 2019 (Petroleum News, 2018g). | 28 miles west of Alaska LNG Project | No | A, RT, S |
| Great Bear Shale Oil Development | A single project is proposed to develop a source reservoir resource. Great Bear Petroleum plans exploration and evaluation wells along the Dalton Highway. Their success in the last two Central North Slope lease sales has secured leases that straddle about 20 miles of the highway, about 30 miles south of Prudhoe Bay (ADNR, 2015c). | Unknown. 500,000-acre lease purchased in 2010. Six leases terminated in 2017. | Over 1,000 square miles of seismic surveys have been completed south and southwest of Deadhorse and south of Nuiqsut. To date only one exploration well has been drilled (Petroleum News, 2017b). | 3 miles east of Alaska LNG Project | Yes | A, AR, GS, GW, LS, LU,R, RT, S, SW, VG, WL, W |
| Nenana Basin area oil and gas development | Continued oil field development: 400,000+ acres of state oil and gas leases (ADNR, 2015d) | Leased acreage: 400,000 (state), 43,000 (Doyon), and 9,500 (Mental Trust Land) | Ongoing. Exploratory drilling planned for 2018 (Petroleum News, 2018c). One exploratory well completed in July, 2018 (Daily News-Miner, 2018). | 12 miles west of Alaska LNG Project | No | A, RT, S, V |
| Kenai LNG Plant | The Kenai LNG Plant has been in "warm standby" since 2015 (Alaska Dispatch News [ADN], 2017). Trans-Foreland Pipeline Co. is proposing to cool down the facilities by importing LNG into its storage tanks, and to install a boil-off gas system that would provide up to 7 million cfd of gas to the adjacent Kenai Refinery. | None. All improvements would be within current site. | Trans-Foreland filed an application with FERC for authorization to install the proposed improvements under Section 3 of the NGA in March 2019. An application for authorization to import LNG for storage is pending. | 1 mile south of Alaska LNG Project | Yes | A, AR, GW, LS, M, N, S, VT |

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| ORPC Cook Inlet Tidal Energy Project | ORPC's Cook Inlet Tidal Energy Project proposes installing turbine generator units in Cook Inlet that would capture energy from tides and deliver power to a utility grid. Would begin with a project at its East Foreland site, near the town of Nikiski, Alaska. The project includes a pilot project for Homer Electric (Turnagain Arm Tidal Energy Corporation, 2012). | Unknown | Active FERC Hydro Kinetic Preliminary Permit: expired May 31, 2016.<br>In 2016, ORPC applied to FERC to surrender the preliminary license for the proposed tidal energy project (Energy Policy Update, 2016).<br>Use of same marine, air, and highway transportation corridors as Alaska LNG Project. | 1 mile northwest of Alaska LNG Project | Yes | A, AR, C, GS, GW, LS, LU, M, N, R, RT, S, SW, V, VG, WL, VT |
| Susitna-Watana Hydroelectric Project | The Susitna-Watana Hydroelectric project would include construction of a dam, reservoir, and related facilities in a remote part of the Susitna River, 184 river miles from Cook Inlet, 87 river miles beyond Talkeetna, and 22–32 river miles above Devils Canyon, which acts as a natural impediment to salmon migration. Transmission lines connecting to the existing Railbelt transmission system and an access road would also be constructed. Initial models show Susitna-Watana hydropower rates would be competitive with other fuel sources at start-up (Susitna-Watana Hydro, 2017). | 42-mile-long by 1-mile-wide reservoir – about 26,900 acres | The project was shut down by Alaska Governor Walker in 2016 as a result of the state's fiscal situation (State of Alaska [SOA], 2016). | 40 miles southeast of Alaska LNG Project | No | RT, S |
| TAPS maintenance and upgrades | The operation and maintenance of the existing 800-mile-long, 48-inch-diameter hot oil pipeline (BLM, 2002). | Unknown. Most activities would take place within existing TAPS footprint. | Ongoing | In same corridor as Alaska LNG from Prudhoe to Livengood | Yes | A, AR, C, GS, GW, LS, N, RT, S, SW, V, VG, WL, W |

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| Andeavor Kenai Refinery | The Andeavor Kenai Refinery can process up to 72,000 barrels per day (bpd). The refinery produces gasoline and gasoline blendstocks, jet fuel, diesel fuel, heating oil, heavy fuel oils, propane, and asphalt. Crude oil is delivered by double-hulled tankers through Cook Inlet and by pipeline from the Kenai Peninsula and Cook Inlet. A 68-mile-long, 42,000 bpd common-carrier products pipeline transports jet fuel, gasoline, and diesel fuel to the Port of Alaska (POA) and the Anchorage International Airport. Wholesale delivery occurs through terminals in Kenai, Anchorage, and Tesoro's Nikiski dock (Andeavor, 2018). | Unknown | Ongoing operations; no known expansion plans. | 1 mile southwest of Alaska LNG Project | Yes | A, GW, N, S, |
| Umiat Development | Continued oil field development in the National Petroleum Reserve-Alaska (Linc Energy, 2014). | Unknown | No specific future actions identified. Exploratory wells were drilled in 2013-2014. | 80 miles west of Alaska LNG Project | No | RT, S |
| Yukon Flats area oil and gas development | The Yukon Flats basin is an underexplored part of interior Alaska. Surface hydrocarbons in soils, along with oil and gas in lakebed sediment cores, indicate the presence of an active thermogenic hydrocarbon system. Oil export is readily available via the TAPS (where capacity is available), and potential gas export availability with the development of the Project (Doyon Limited Oil and Gas Exploration [Doyon], 2015). | Doyon Limited controls 1.4 million acres in the Yukon Flats area, and in 2010 acquired 96 miles of 2D seismic data. | Seismic exploratory activities ongoing. In December 2017, Congress opened up an additional 1.5 million acres for drilling in the Arctic National Wildlife Refuge. | 26 miles northeast of Alaska LNG Project | No | A, RT, S |

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| **Transportation Projects** | | | | | | |
| Alaska Roads to Resources – proposed new road construction | State and private road construction projects to access natural resources (Alaska Department of Transportation and Public Facilities [ADOT&PF], 2011a) | Ambler road: 211-mile-long road to Ambler Mining District. About 80 acres of wetlands within the Alaska LNG Project's HUC-12 watershed would be affected.<br>West Susitna road: 72-mile-long road extension, Umiat: 100-mile-long road | Ambler: BLM expects to issue a Draft EIS by spring 2019, with Final EIS by end of 2019 (The Arctic Sounder, 2018). Company expects permit decision on Ambler Road by 2020 (AJC, 2018b).<br>West Susitna 2014: ADOT&PF released a reconnaissance study assessing five possible routes.<br>Umiat 2015: ADOT&PF requested work on the EIS be halted. Project proponent states work can be completed using ice roads (AJC, 2015). | Ambler and Umiat Roads would intersect the Dalton Highway in the same corridor as the Alaska LNG Project in the Brooks Range (about MP 254), and extend west from that point. Routes for the West Susitna Road are under investigation; it is possible that the road would cross the Mainline Pipeline corridor south of Denali Park and Preserve in the Trapper Creek vicinity. | Yes; about 9 miles of the Ambler Road alignment would lie within the same HUC-12 watershed as Alaska LNG. | A, AR, C, GS, GW, LS, LU, N, R, RT, S, SW, V, VG, WL, W |
| Fairbanks Intermodal Yard | Increase staging and laydown yard acreage in Fairbanks near ARRC site. Part of a long-term rail plan. | Unknown | Public comment period for Alaska State Rail Plan ended March 10, 2018 (Fairbanks Daily News Miner, 2018). | 30 miles east of Alaska LNG Project | No | A, RT, S |

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|---|---|---|---|---|---|---|
| Highway maintenance and upgrades | ADOT&PF plans highway maintenance to the Parks, Dalton, Seward, and Sterling Highways. Proposing to reconstruct the Dalton Highway from its junction of the Elliott Highway near Livengood Highway MP 0 to MP 9. Proposing improvements to the Sterling Highway between its eastern intersection with Skilak Lake Road (near historic MP 58) and Kenai Keys Road (near historic MP 79). Plan to rehabilitate and improve the safety of 5.5 miles of the Seward Highway between the communities of Moose Pass and Seward, Alaska (ADOT&PF, 2011b,c). | Unknown | Ongoing<br>Use of the same marine, air, and highway transportation corridors as Alaska LNG Project. | Some locations are near or adjacent to highways. | Yes | A, AR, C, GS, GW, LS, LU, N, R, RT, S, SW, VG, WL, W |
| Homer Capital Improvement Plan (CIP) | City of Homer CIP includes water storage/distribution improvements, road system improvements, and improvements to port and harbor facilities (City of Homer, 2017). | Over 100 acres | 2018-2023 Plan included a Legislative Request for over $123 million FY19 capital budget.<br>Use of the same marine and highway transportation corridors as Alaska LNG Project. | 72 miles south of Alaska LNG Project | No | RT, S |
| Knik Arm Bridge | The Knik Arm Crossing is an ADOT&PF project to construct a 1.7-mile toll bridge over Cook Inlet's Knik Arm, connecting Anchorage, Alaska's largest city, with the MSB, Alaska's fastest-growing region (U.S. Department of Transportation [DOT], 2015). | 1.7-mile-long bridge | In 2014, legislation establishing public finance passed the House and the Senate; design and construction was transferred to ADOT&PF.<br>In June 2016, the project was halted and all funding removed from the state's FY18 operating budget. At that time the project was being finalized for closeout with the Federal Highway Administration (SOA, 2017a).<br>Would use the same highway transportation corridors as Alaska LNG Project. | 29 miles east of Alaska LNG Project | No | A, M, RT, S |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| Port MacKenzie Rail Extension | The Port MacKenzie Rail Extension is a 32-mile rail line in the Susitna River valley. The rail line travels north from the port facility and connects to the existing rail system near Houston, Alaska. The new rail line would establish a rail link between Port MacKenzie and the ARRC system, which currently connects ports in Seward, Whittier, and Anchorage with interior Alaska, including Denali National Park, Fairbanks, and North Pole. The MSB is the operator of Port MacKenzie, project sponsor, and co-manager of the project. The project would provide Port MacKenzie customers/shippers efficient rail transportation between the Port and interior Alaska (ARRC and MSB, 2014). | 8,940 acres (ARRC, 2016) | Project is 75% complete, but is currently on hold. In January 2017, the McDowell Group prepared a Market Analysis for the MSB to evaluate necessity and benefit of the project (McDowell Group, 2017b). | 21 miles east of Alaska LNG Project | No | A, RT, S |
| Ted Stevens Airport Expansion | Airport management and ADOT&PF plan to expand the Ted Stevens Anchorage International Airport to strategically position the airport for the future by maximizing operational efficiency and business effectiveness, and by maximizing property availability for aeronautical development through efficient planning. The planning horizon for the Master Plan Update is 20 years and considers terminal, runway, and security expansions on airport property (ADOT&PF, 2014b). | 4,612 acres with hundreds of acres available for development, including Kulis Business Park (SOA, 2017b). | 2015 to 2035 | 28 miles southeast of Alaska LNG Project | No | A, RT, S |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| **Mining Projects** | | | | | | |
| Chuitna Coal Mine | The Chuitna Coal Mine Project, designed by PacRim Coal, LP, is a surface coal mine with contemporaneous reclamation to recover an estimated 300 million tons of sub-bituminous ultra-low-sulfur coal. Project permitting began in 2006 and is currently in the advanced permitting phase. Production is expected to average 12 million metric tons per year depending on market demand. Major components are the mine area, infrastructure, and port facilities (PacRim Coal, LP [PRC], 2012). | About 5,000 acres (AJC, 2017) | Preliminary Draft Supplemental EIS Released for cooperating agency review in November 2015.<br>March 31, 2017, all permitting activities related to the Chuitna Coal Project were suspended (ADNR, 2017a). | 6 miles west of Alaska LNG Project | No, but lies within HUC10 watershed | A, RT, S, WL |
| Donlin Gold Mine | Gold mine with infrastructure plans for a gas-fired power generation plant, water treatment plant, access roads, housing, a new port, a 316-mile, 14-inch natural gas pipeline, and an airstrip. The mine is estimated to produce on average 1.3 million ounces of gold annually during operation (Donlin Gold, 2015), (COE, 2018b). | Near the end of operation, the resulting pit would be about 2.2 miles long by 1 mile wide. Tailing storage would encompass 2,351 acres. The pipeline and a related fiber optic cable would be built within a 150-foot construction right-of-way. The pipeline would affect about 408 acres within Cook Inlet Basin, including roughly 84 acres of wetland impacts within HUC12 watersheds crossed by the Alaska LNG Project (COE, 2018b). | The COE released the Final EIS in April 2018 (Alaska Public Media, 2018a), and issued Section 10 and 404 permits for the project in August 2018 (Mining Journal, 2018). | Mine site is 228 miles west of Alaska LNG Project. Natural gas pipeline would cross alignment of Alaska LNG Mainline Pipeline at about MP 749. | Pipeline would cross alignment of Alaska LNG Mainline Pipeline.<br>Use of the same marine, air, and highway transportation corridors as Alaska LNG Project. | A, AR, C, GS, GW, LS, LU, N, R, RT, S, SW, VG, WL, W |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| Livengood Gold Project | The Livengood Gold Project is in the Tolovana mining district within the Tintina Gold Belt. The project area centers on a local topographic high point named Money Knob. This feature and the adjoining ridgelines have been considered by many to be the lode gold source for placer gold deposits that lie in the adjacent valleys and that have been actively mined since 1914, with the production of more than 500,000 ounces of gold (Tower Hill, 2018). | 48,300 acres | Development during later years of Alaska LNG construction to commence operations when gas is available to Fairbanks. As of 2018, developer was continuing optimization and environmental baseline studies (North of 60 Mining News, 2018). | 17 miles northeast of Alaska LNG Project | No, but lies within HUC10 watershed | A, RT, S, WL |
| Usibelli Coal Mine expansion, operations, and maintenance | Usibelli Coal Mine (UCM) currently has a workforce of about 130 employees, and operates year-round. Mine production has grown from 10,000 tons in 1943 to an average above 2 million tons of coal per year. UCM supplies coal to six interior Alaska power plants and exports coal to Chile, South Korea, and several other Pacific Rim destinations (UCM, 2015). | 35,100 acres under coal lease from the State of Alaska (UCM, 2015). | Operations and maintenance are ongoing; no specific future actions identified. However, Governor Bill Walker announced in February 2018 that China might have an interest in importing coal from Alaska, which could lead to expansion of the mine site (Juneau Empire, 2018). | 3 miles northeast of Alaska LNG Project | Yes | A, AR, GS, GW, LS, LU, R, RT, S, SW, V, VG, WL, W |
| **Marine Projects** | | | | | | |
| Alaska Deep-Draft Arctic Port at Nome. | A feasibility report and draft Environmental Assessment (EA) was completed in 2015 for constructing navigation improvements as part of a larger system of port facilities in the Arctic and sub-Arctic region. The outcome of the study was to select project sites, develop measures and alternatives, and select the recommended alternative (COE, 2015a). | Census Area. The extension would increase the existing 22.5 mean lower low water (MLLW) deep causeway to -35 MLLW. Existing causeway includes a 270-foot spur at the end and a 3,025-foot protective breakwater. | Project had been shelved since 2015. In early 2018, COE and the City of Nome entered into an agreement to split the cost of a new study of potential regional benefits of a deepwater port (Alaska Public Media, 2018b). COE feasibility study in progress as of late 2018. | 375 miles west of Alaska LNG Project | No | RT, S |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| POA Expansion | The U.S. Department of Transportation, Maritime Administration (MARAD) in cooperation with the POA originally proposed to expand, reorganize, and improve the POA. This Marine Terminal Redevelopment Project would double the size of the POA, and provide about 8,880 linear feet of waterfront structures west, northwest, and southwest of the existing POA (POA, 2017a). The Port was renamed POA in October 2017. | Unavailable | On hold.<br>The Anchorage municipality is currently in Phase I of a new port modernization project intended to update, repair, and replace existing infrastructure. The project is scheduled for completion in 2022 (POA, 2017a).<br>Use of the same marine, air, highway, and rail transportation corridors as Alaska LNG Project. | 30 miles southeast of Alaska LNG Project | No | A, M, RT, S |
| Seward Marine Terminal Expansion | The Seward Marine Terminal Expansion Planning Project would provide a comprehensive master planning effort, inclusive of all relevant transportation and engineering disciplines, and result in a Seward Marine Terminal Expansion Master Plan for ARRC's Seward port facilities and conceptual/preliminary designs of the port and upland support facilities. A completed expansion effort would accommodate a variety of vessel types including freight, passenger, ferry, research, military, fishing, and barges. It would also improve Port of Seward safety and efficiency; preserve and enhance the intermodal operations of 40+ existing freight and passenger vessel docking customers; accommodate demonstrated and projected increases in traffic volumes and types; promote economic growth, employment, and sustainability; and ensure the long-term utility of Seward facilities (ARRC, 2015). | Unavailable | In summer 2017, ARRC held public meetings in Seward to discuss the expansion Master Plan. Passenger and Freight Traffic Report completed as of May 2017 (ARRC, 2017a).<br>Use of the same marine, air, highway, and rail transportation corridors as Alaska LNG Project. | 77 miles southeast of Alaska LNG Project | No | M, RT, S |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| **Other Projects** | | | | | | |
| Agrium Kenai Nitrogen Operations Facility | The Agrium Kenai Nitrogen Operations Facility is at Mile 21 of the Kenai Spur Highway near Kenai, Alaska. It is classified as a nitrogenous fertilizer manufacturing facility under Standard Industrial Classification code 2873 and under North American Industrial Classification code 325311. The facility will produce ammonia and urea for bulk sale (Alaska Department of Environmental Conservation [ADEC], 2014). | N/A – would use existing plant | Facility closed in 2007. An ADEC Air Quality Control Construction Permit was issued for 2015-2020. Agrium also applied for an ADEC discharge permit for the facility under the scenario the plant would reopen in 2018 (ADEC, 2017b). Reopening still on hold as of early 2018 (Peninsula Clarion, 2018). | 1 mile south of Alaska LNG Project | Yes | A, AR, C, GW, N, RT, S, SW |
| F-35 Beddown | The Alaska LNG Project would base up to 54 F-35A aircraft at Eielson Air Force Base, Alaska, as an additive operational mission to the 354th Fighter Wing (U.S. Air Force [USAF], 2015). | 135 acres (USAF, 2017) | Record of Decision was signed April 2016. The Supplemental EIS finalized June 2017. The first aircraft would be delivered in 2020, allowing full operational capabilities for both squadrons by 2021. | 45 miles east of Alaska LNG Project | No | RT, S |
| Four Lakes Warming Research | Researchers would experimentally raise upper layer lake temperatures by 2-4 degrees Celsius, delaying ice formation by approximately 30 days, over a period of five years. Data gathered from the project is to gauge the effect of long and warmer growing seasons on ecosystem and community composition and to predict lake temperatures with a coupled, lake climate model (BLM, 2017a). | Minimal ground disturbance from foot traffic to and from lakes. | Environmental Assessment completed, 2017 | 0.75 mile from Alaska LNG Project | No (within HUC10 watershed) | WL |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|
| South Denali Visitor Center | The project would enhance recreation and access throughout the South Denali region, design expanded visitor facilities and recreational opportunities in the South Denali region, protect the cultural and natural resource values of the area, and preserve quality of life for residents in nearby communities. The plan is to develop new facilities and enhancements; project partners are exploring cooperative efforts for implementation and maintenance through public and private sector support (National Park Service [NPS], 2006b). | 2.5 acres plus 31 miles of trails (NPS, 2006b) | Opened in 2017, it includes a 3,300-square-foot interpretive center, 32 recreational vehicle campsites, 10 walk-in campsites, three public-use cabins, and a 34-mile-long power extension along the Parks Highway (ADNR, 2017g). | 2 miles northwest of Alaska LNG Project | Yes | AR, GS, LS, R, RT, V, VG, WL, W |
| U.S. Army Corps of Engineers Anchorage Harbor Maintenance Dredging | Annual maintenance dredging, Anchorage Harbor | Volume has ranged from 600,000 to 1.1 million cubic yards annually (COE, 2017b). | Ongoing | Dredge disposal area lies 35 miles from Alaska LNG facilities. | Yes | A,R,M, VT |
| Quintillion Terrestrial and GCI Alaska United Fiber Optic Projects | The two fiber optic projects were installed adjacent to the Dalton Highway in 2017. | Unknown. Estimated permafrost thaw area up to 12 acres (based on 20 locations measuring 500' by 50'). | Projects went into service in 2017. Permafrost thawing along the trenchline has been observed at about 20 locations; restoration/remediation efforts are in progress (Alaska Public Media, 2018c). | In same corridor as Alaska LNG between MPs 25 and 400. | Yes | A, AR, C, GS, GW, LS, LU, N, R, RT, S, SW, V, VG, WL, VT, W |

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Actions that Could Cumulatively Affect Resources**

| Project/Activity | Project Description | Area Affected | Status | Location Relative to Nearest Project Facility | HUC12 Watershed Shared with Alaska LNG | Resources with Potential Cumulative Impacts [a] |
|---|---|---|---|---|---|---|

_____

Resources Affected Acronyms:

| | |
|---|---|
| A | Air |
| AT | Air Travel |
| AR | Aquatic Resources |
| C | Cultural Resources |
| GS | Geology and Soils |
| GW | Groundwater |
| LS | Listed Species |
| LU | Land Use |
| M | Marine Offshore Biological |
| N | Noise |
| R | Recreation |
| RT | Road or Rail Traffic |
| S | Socioeconomics |
| SW | Surface Water |
| V | Visual |
| VG | Vegetation |
| WL | Wildlife |
| VT | Vessel Traffic |
| W | Wetlands |

Acronyms:

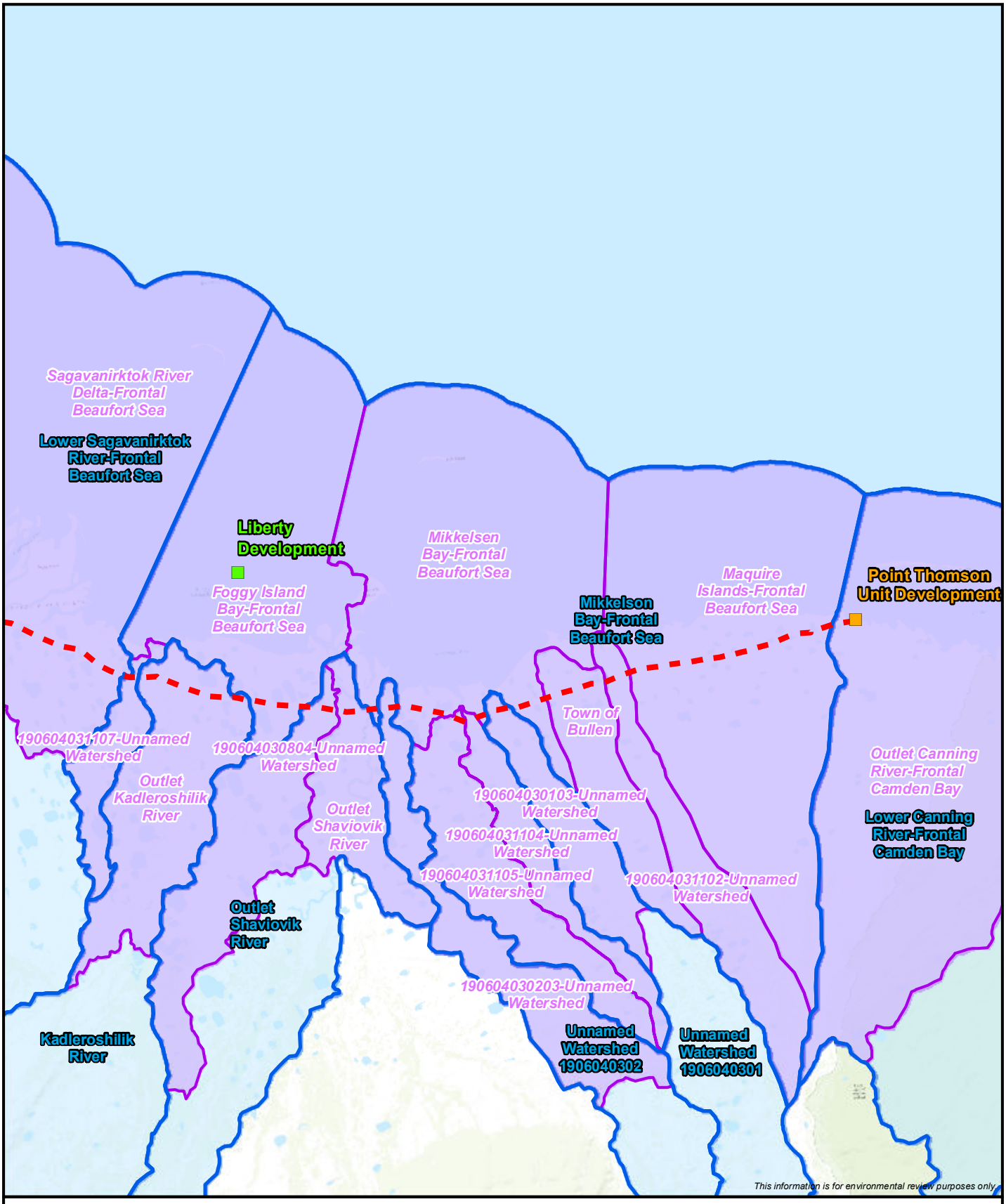
| | |
|---|---|
| ADEC | Alaska Department of Environmental Conservation |
| ADN | Alaska Dispatch News |
| ADNR | Alaska Department of Natural Resources |
| ADOT&PF | Alaska Department of Transportation and Public Facilities |
| AGDC | Alaska Gasline Development Corporation |
| AJC | Alaska Journal of Commerce |
| ANILCA | Alaska National Interest Lands Conservation Act |
| AOGA | Alaska Oil and Gas Association |
| ARRC | Alaska Railroad Corporation |
| BLM | Bureau of Land Management |
| BOEM | Bureau of Ocean Energy Management |
| bpd | barrels per day |
| BRP | Brooks Range Petroleum |
| cfd | cubic feet per day |
| CIP | Capital Improvement Plan |
| CIGGS | Cook Inlet Gathering System |
| COE | United States Army Corps of Engineers |
| DOG | ADNR Division of Oil and Gas |
| DOI | United States Department of the Interior |
| DOT | United States Department of Transportation |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| FERC | Federal Energy Regulatory Commission |
| gal | gallons |
| GCI | General Communication Inc. |
| GMT | Greater Mooses Tooth |
| GVEA | Golden Valley Electric Association |
| HUC | Hydrologic Unit Code |
| LLC | Limited Liability Company |
| LP | Limited Partnership |
| Ltd. | Limited |
| LNG | liquefied natural gas |
| MARAD | Maritime Administration |
| MGS | Major Gas Sales |
| MLLW | mean lower low water |
| MPU | Milne Point Unit |
| MP | milepost |
| N/A | not applicable |
| NPS | National Park Service |
| O&G | oil and gas |
| OCS | Outer Continental Shelf |
| ODS | Oooguruk Drill Site |
| ORPC | Ocean Renewable Power Company |
| PBU | Prudhoe Bay Unit |
| POA | Port of Alaska |
| PRC | PacRim Coal |
| PTTL | Point Thomson Unit Gas Transmission Line |
| PTU | Point Thomson Unit |
| SOA | State of Alaska |
| TAPS | Trans Alaska Pipeline System |
| UCM | Usibelli Coal Mine |
| USAF | U.S. Air Force |

# Appendix W-2

# Maps of Past, Present, and Reasonably Foreseeable Actions

## APPENDIX W-2: MAPS OF PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

**List of Figures**

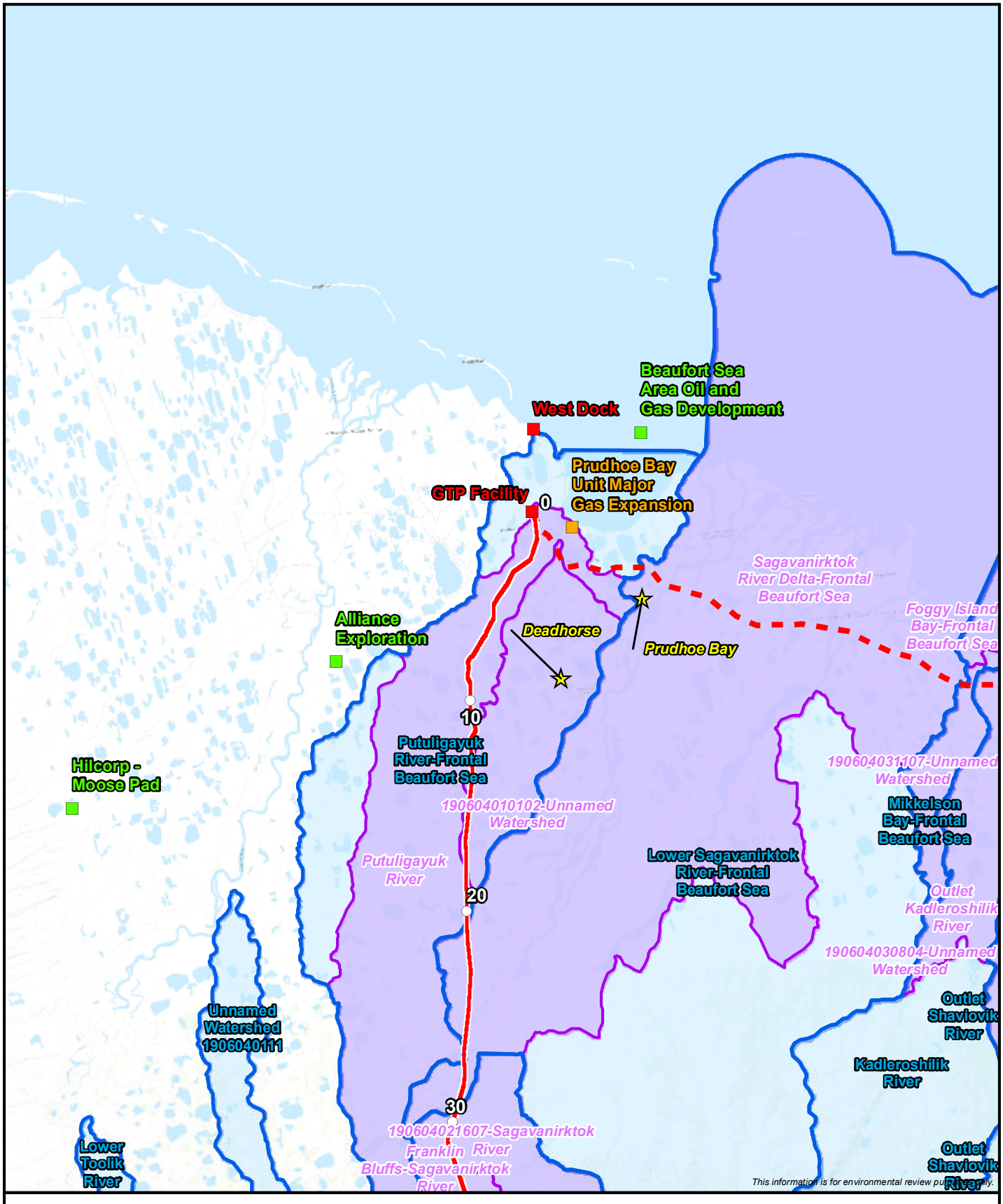



Non-Jurisdictional Facility
Existing/Future Project
Point Thomson Transmission Line
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in HUC10 and HUC12 Watersheds, PTTL Eastern Portion

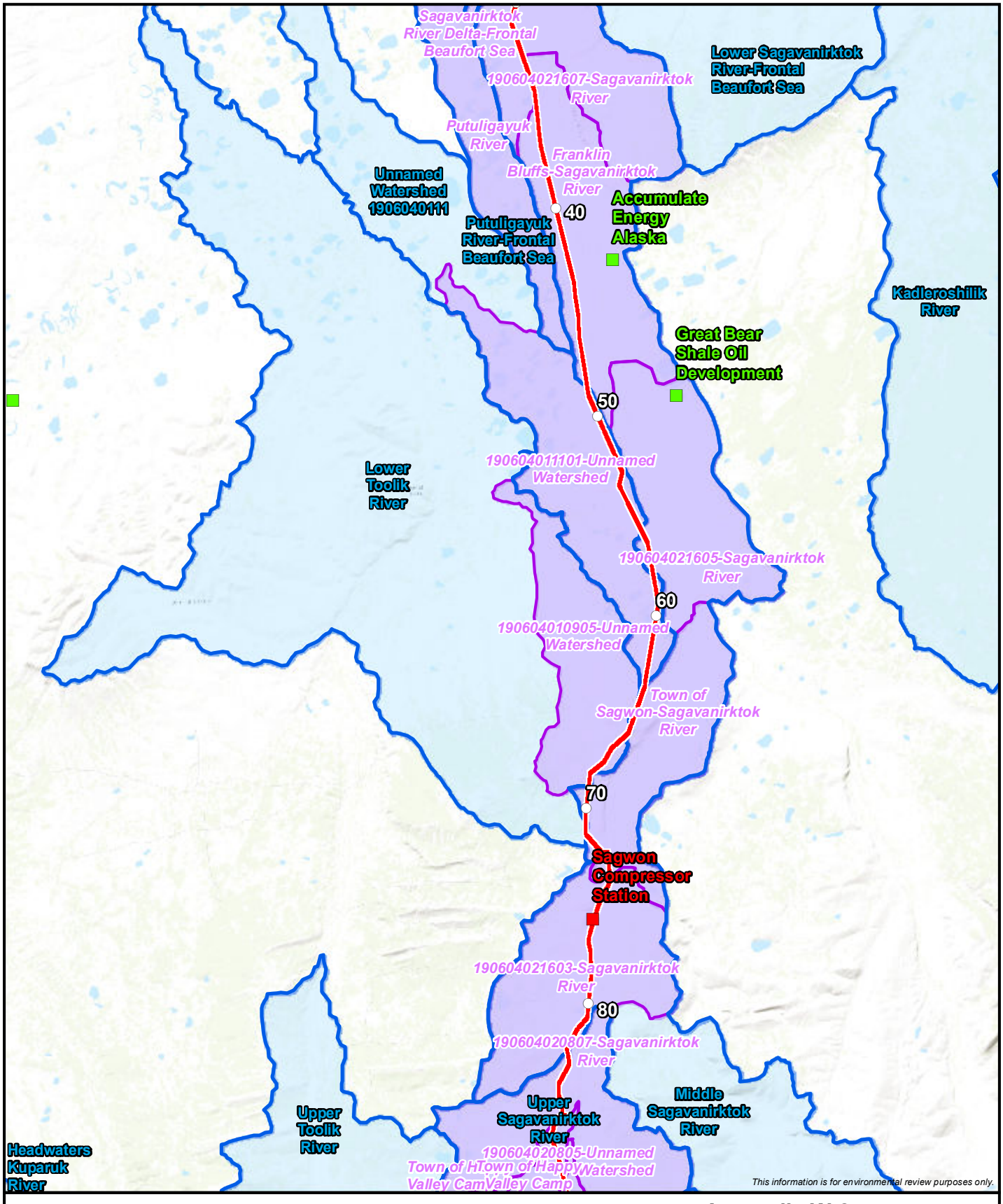



Alaska LNG Major Aboveground Facility
Community
Non-Jurisdictional Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
Point Thomson Transmission Line
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, PTTL Western Portion, Mainline Pipeline MP 0–35




Alaska LNG Major Aboveground Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

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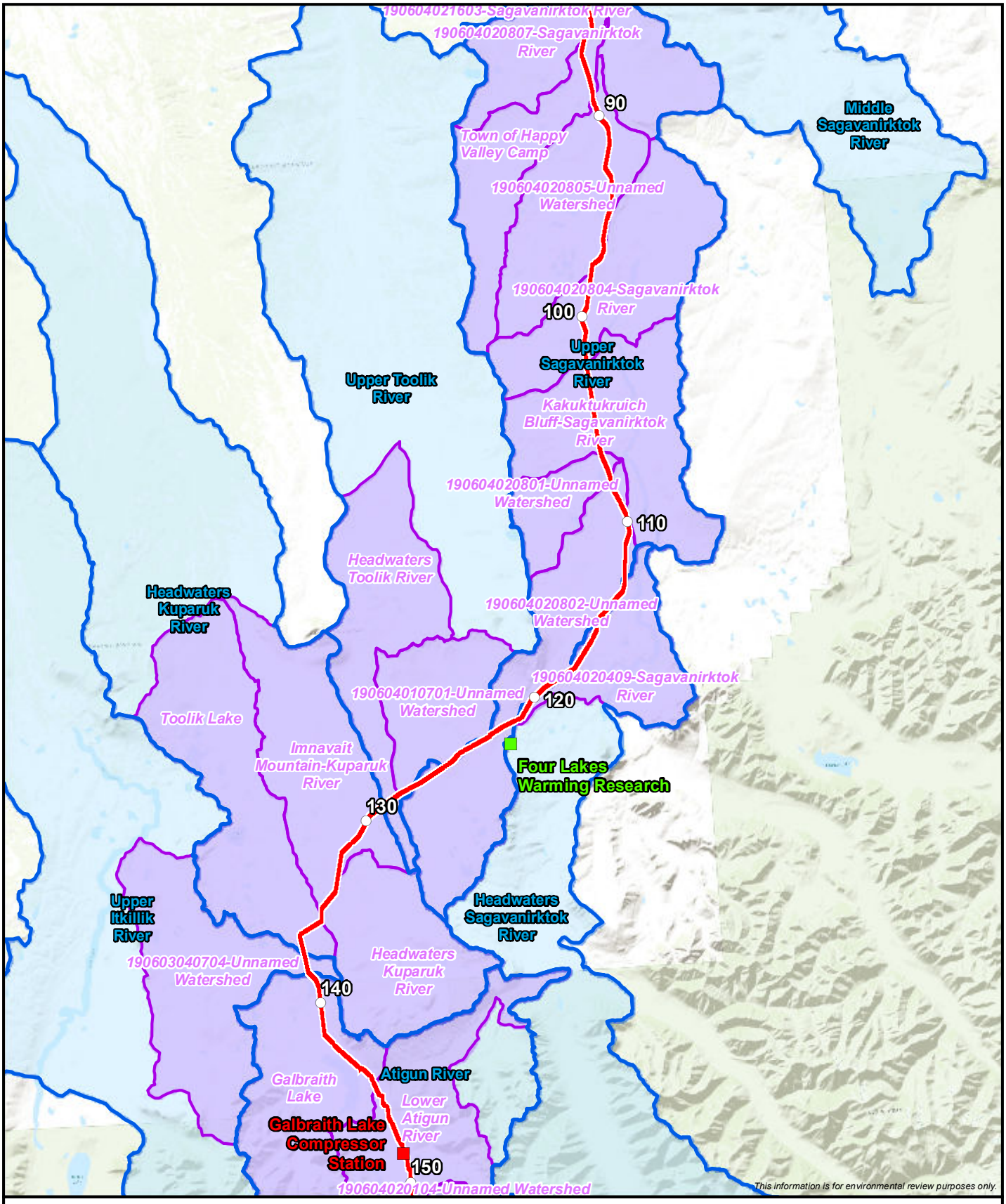
**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 35–90




Alaska LNG Major Aboveground Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

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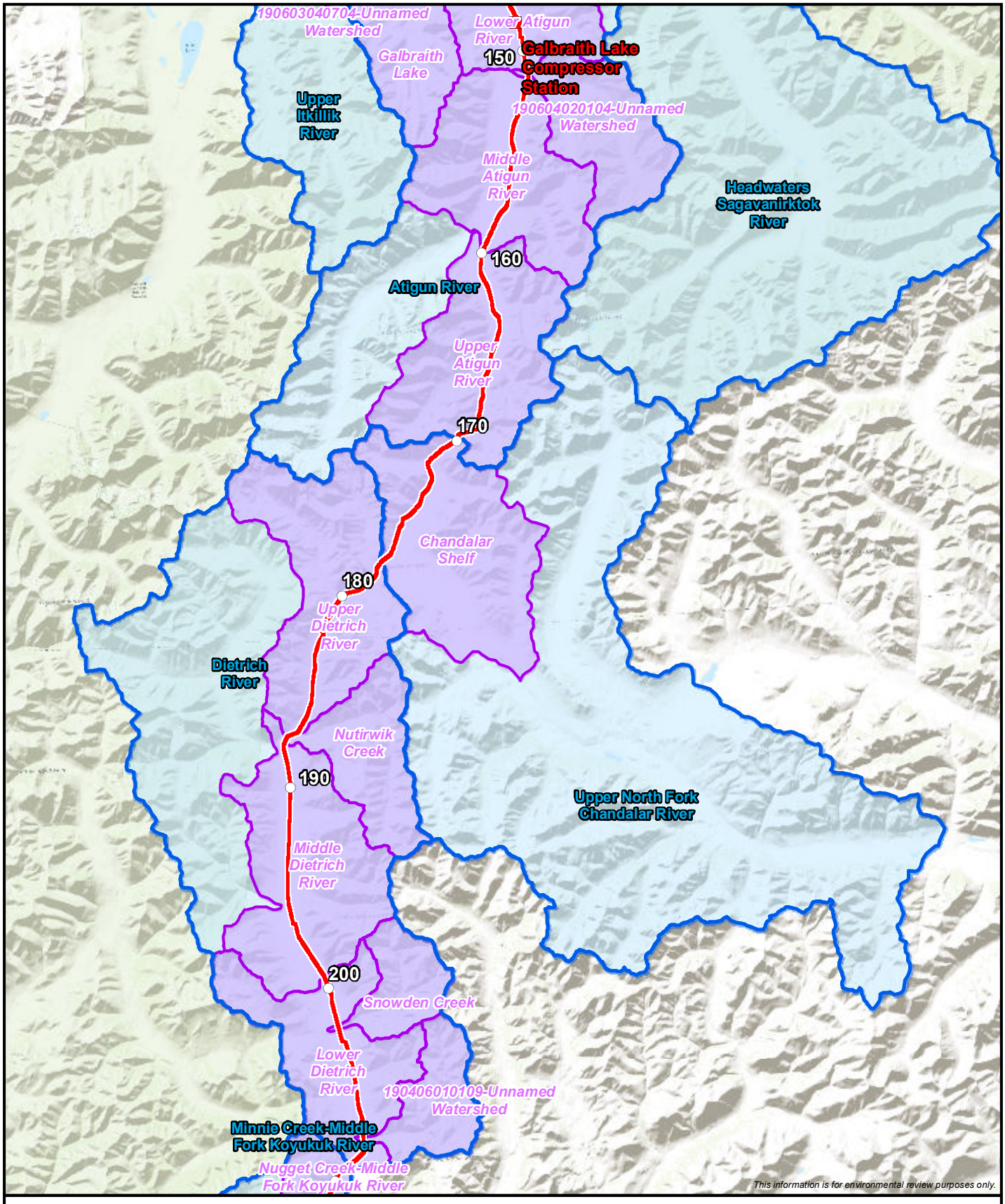
# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 90–150

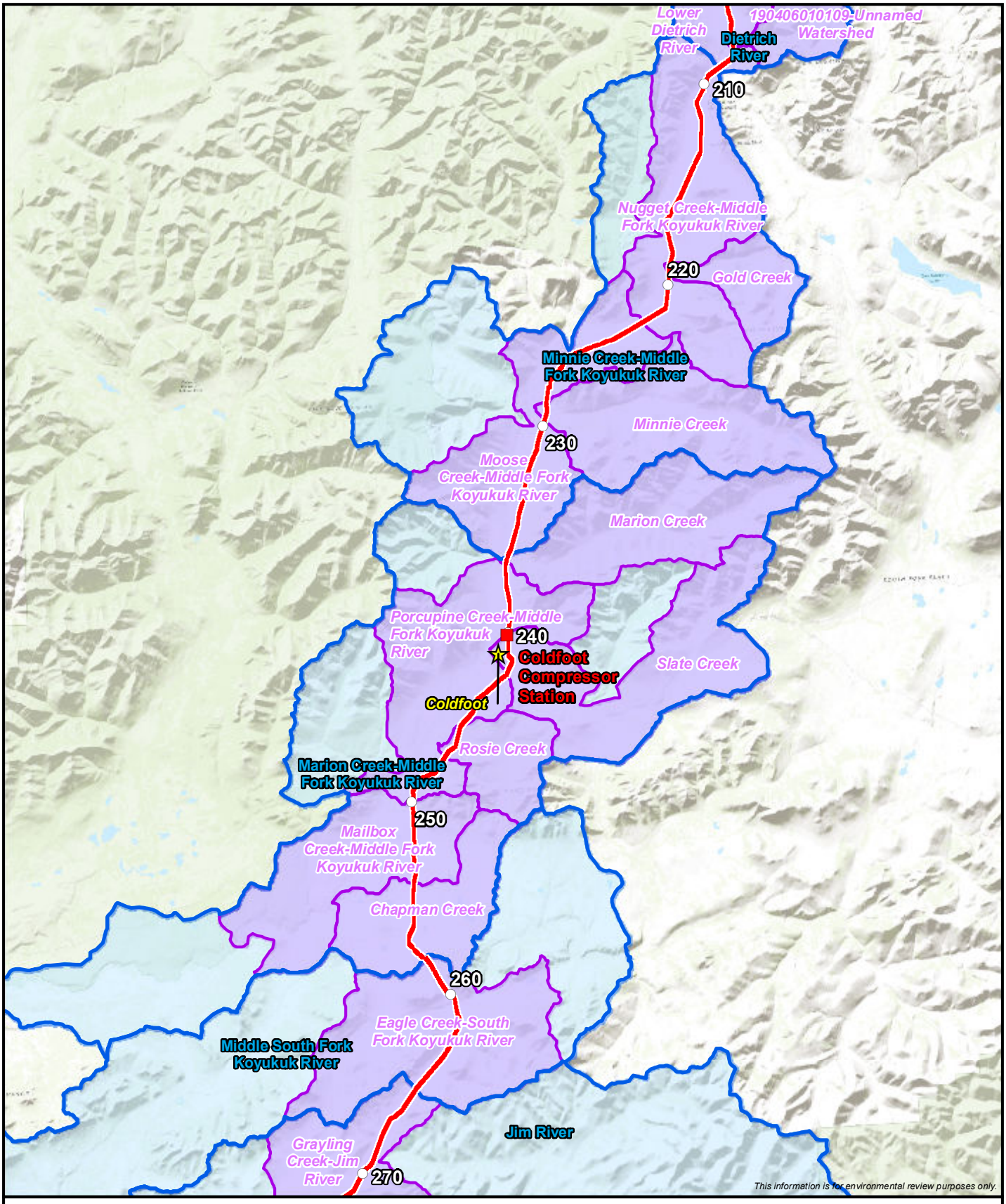



Alaska LNG Major Aboveground Facility
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 150–210




Alaska LNG Major Aboveground Facility
HUC 12 Watershed
Community
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

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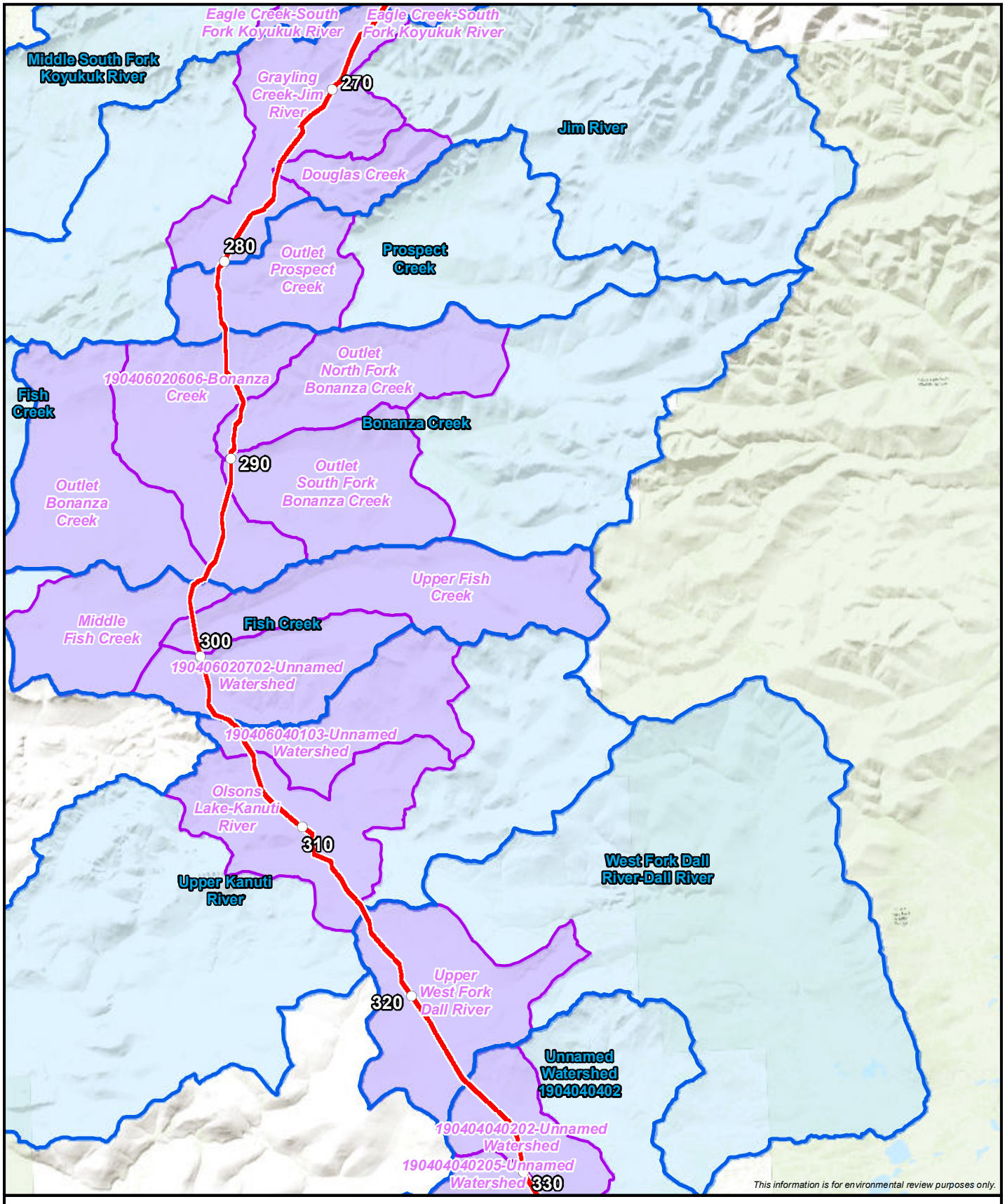
**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 210–270

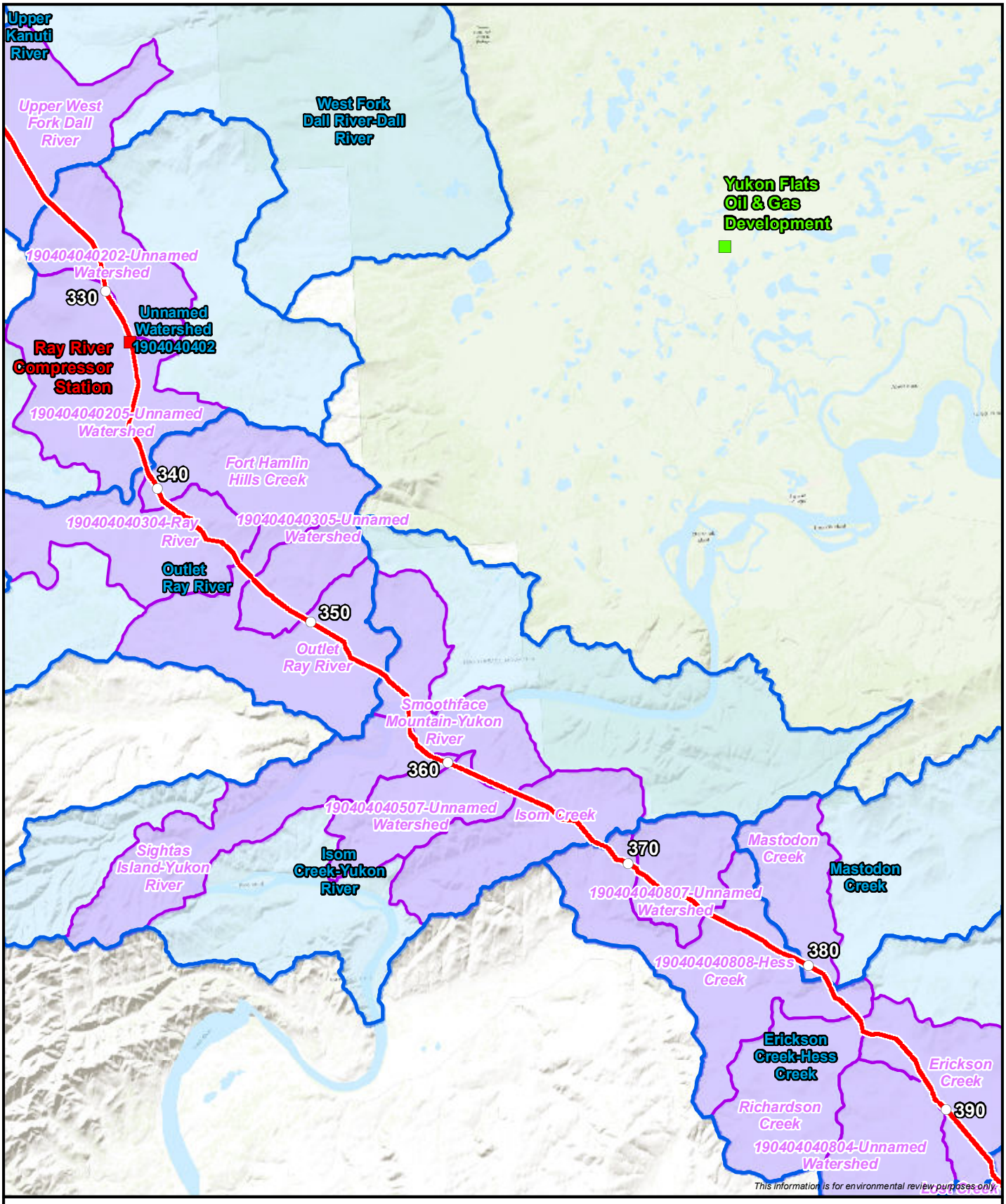



Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

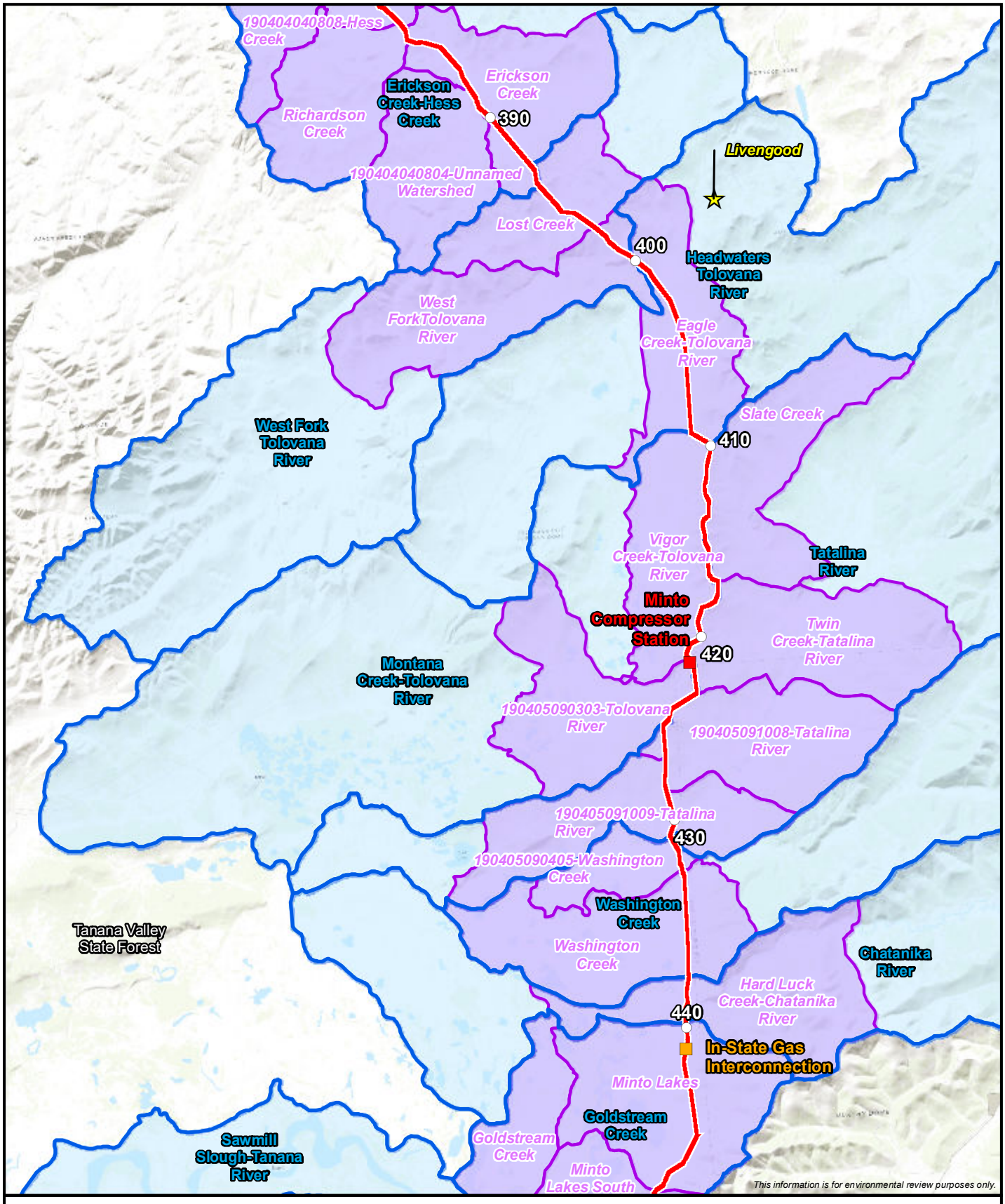
0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 270–330




**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC 12 Watersheds, Mainline Pipeline MP 330–390

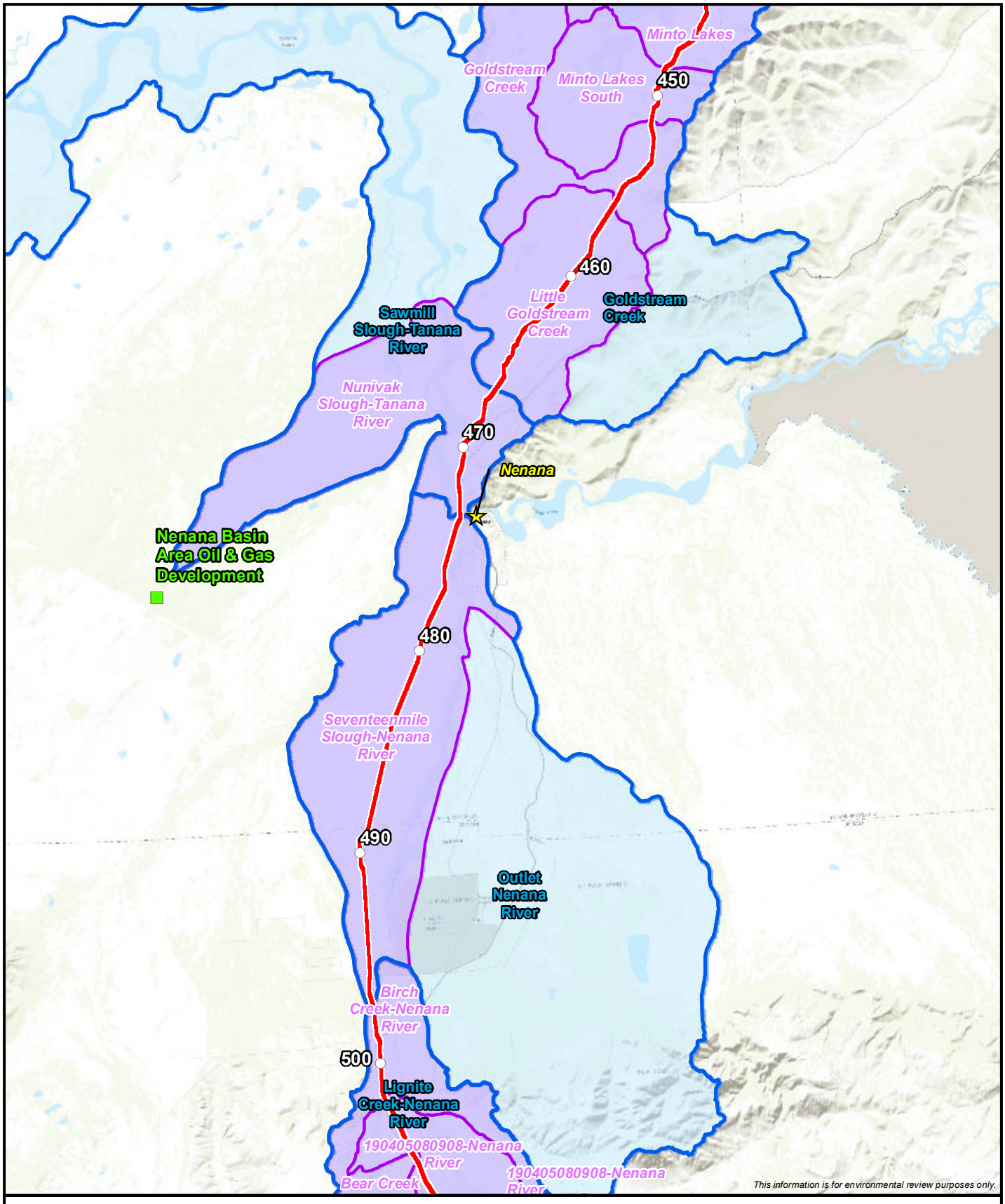



Alaska LNG Major Aboveground Facility
Alaska LNG Proposed Mainline Route
Community
HUC 10 Watershed
HUC 12 Watershed
Non-Jurisdictional Facility
Milepost

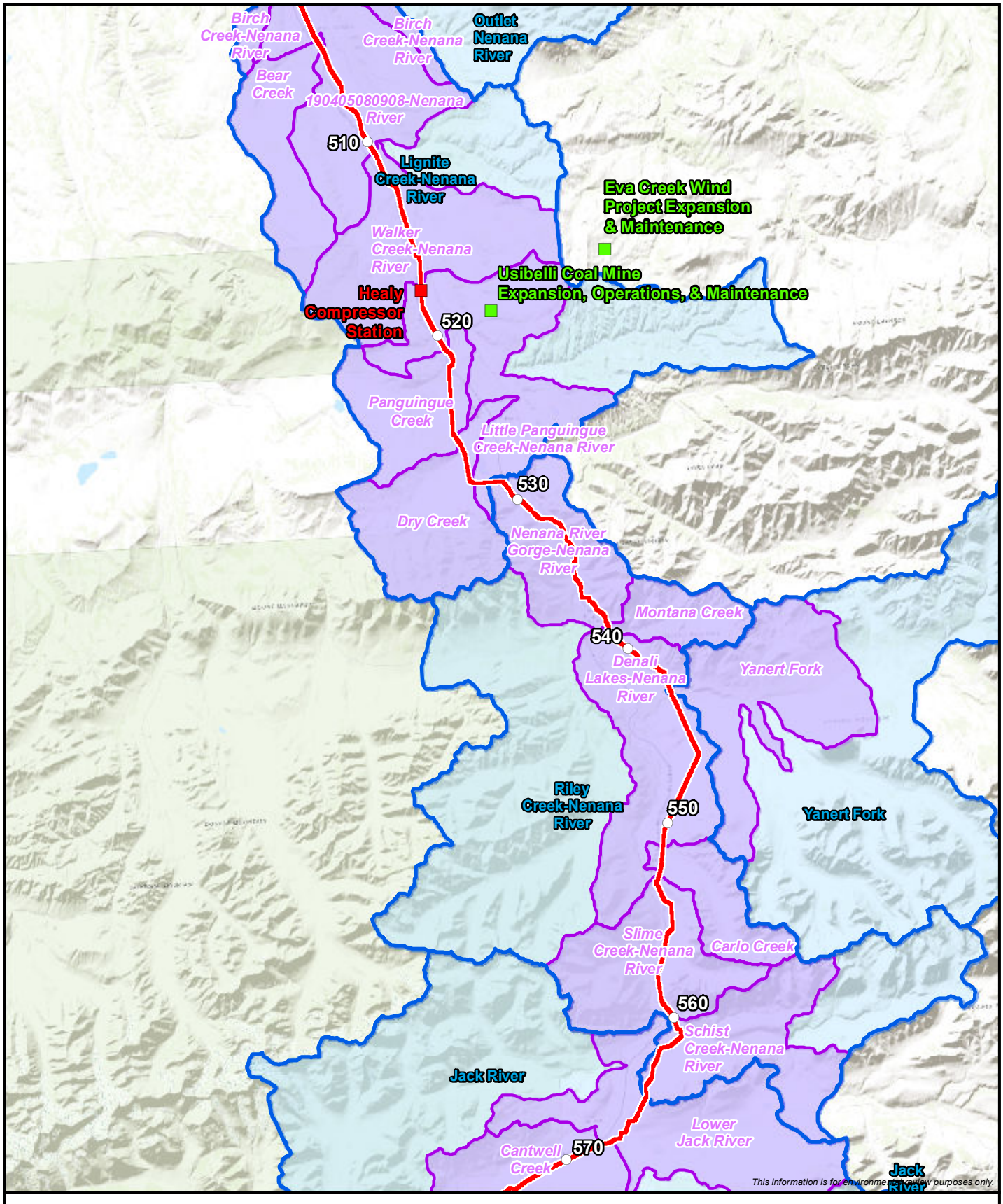
0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC 12 Watersheds, Mainline Pipeline MP 390–450




**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 450–510




Alaska LNG Major Aboveground Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

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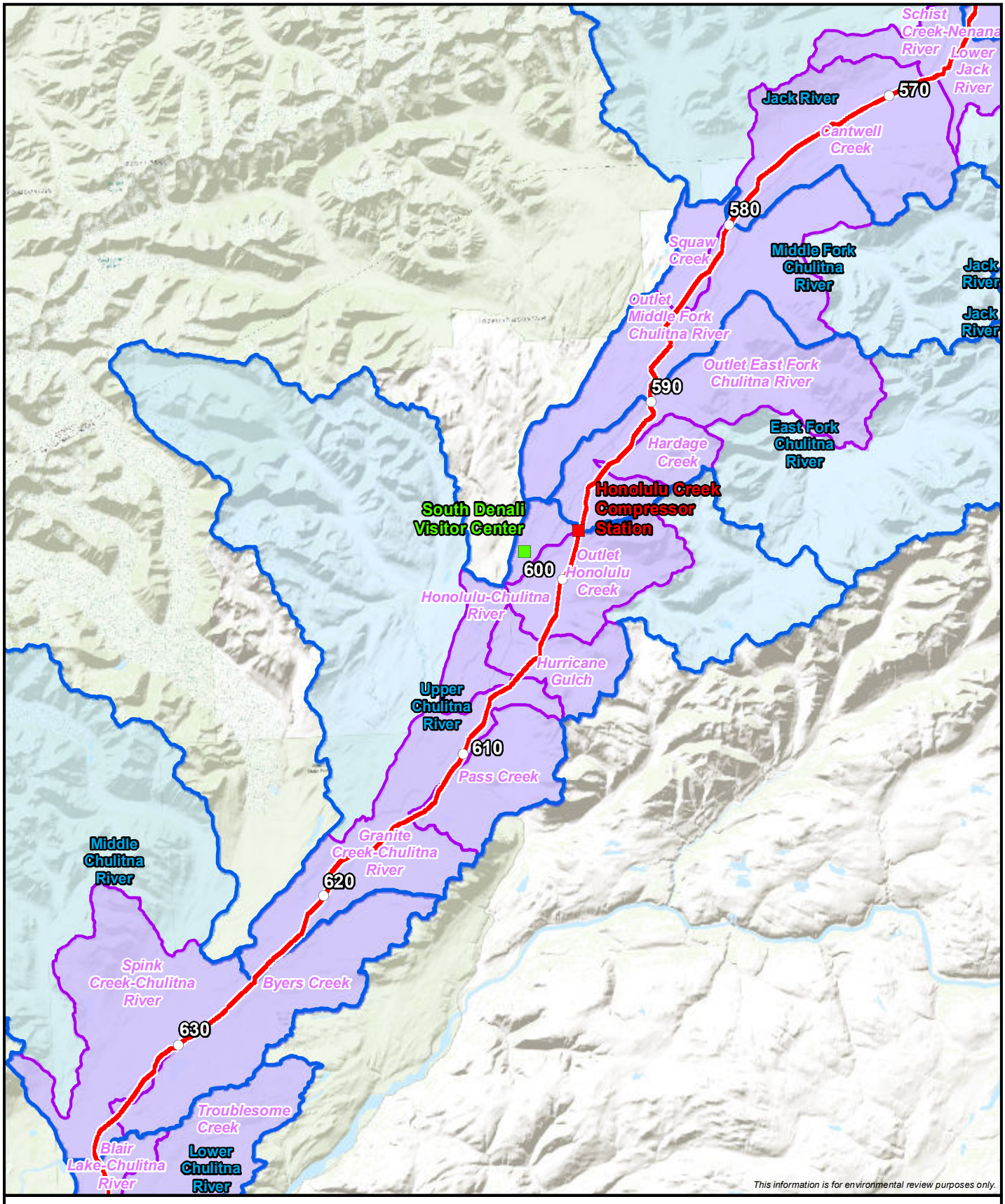
# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 510–570



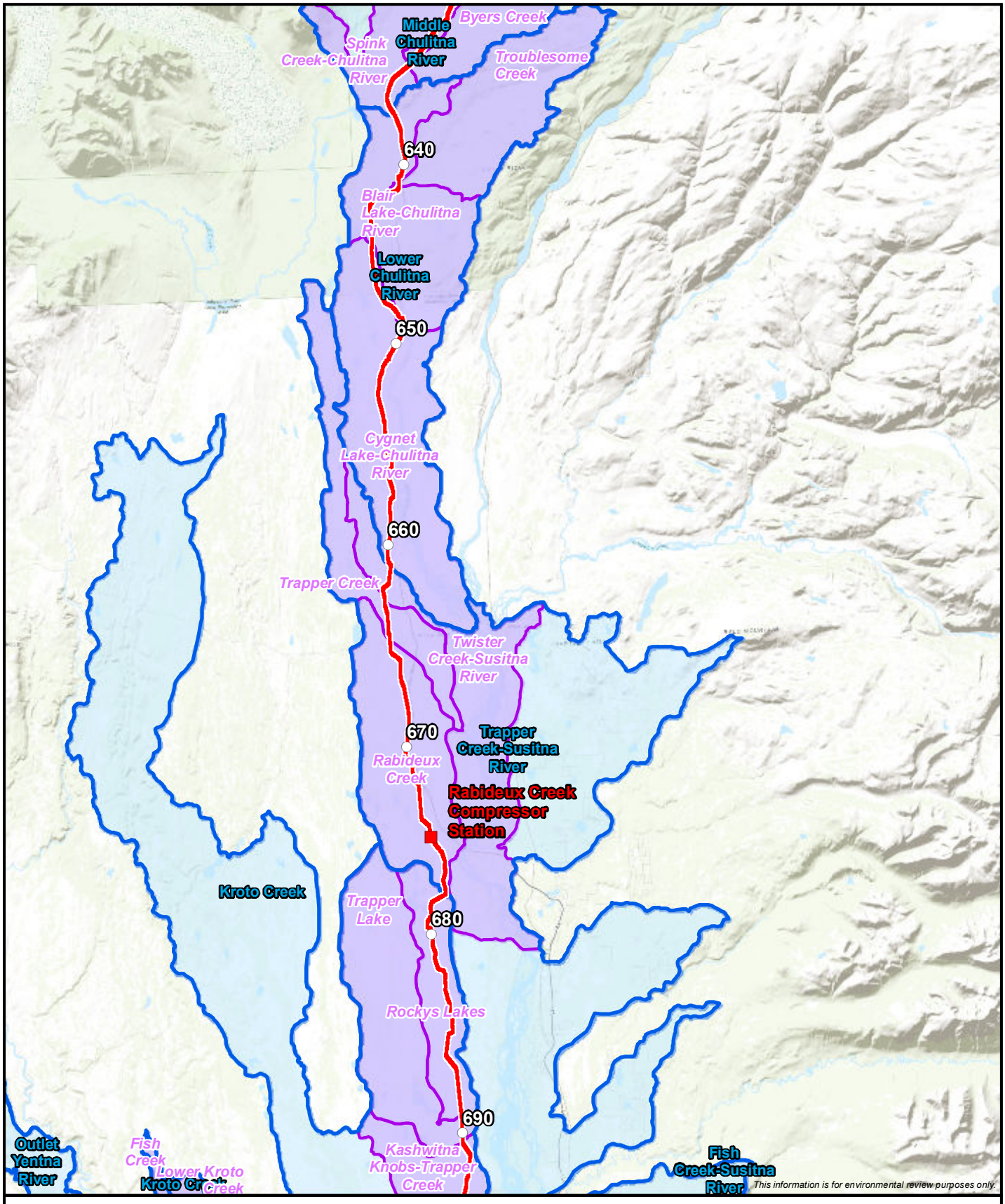

Alaska LNG Major Aboveground Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

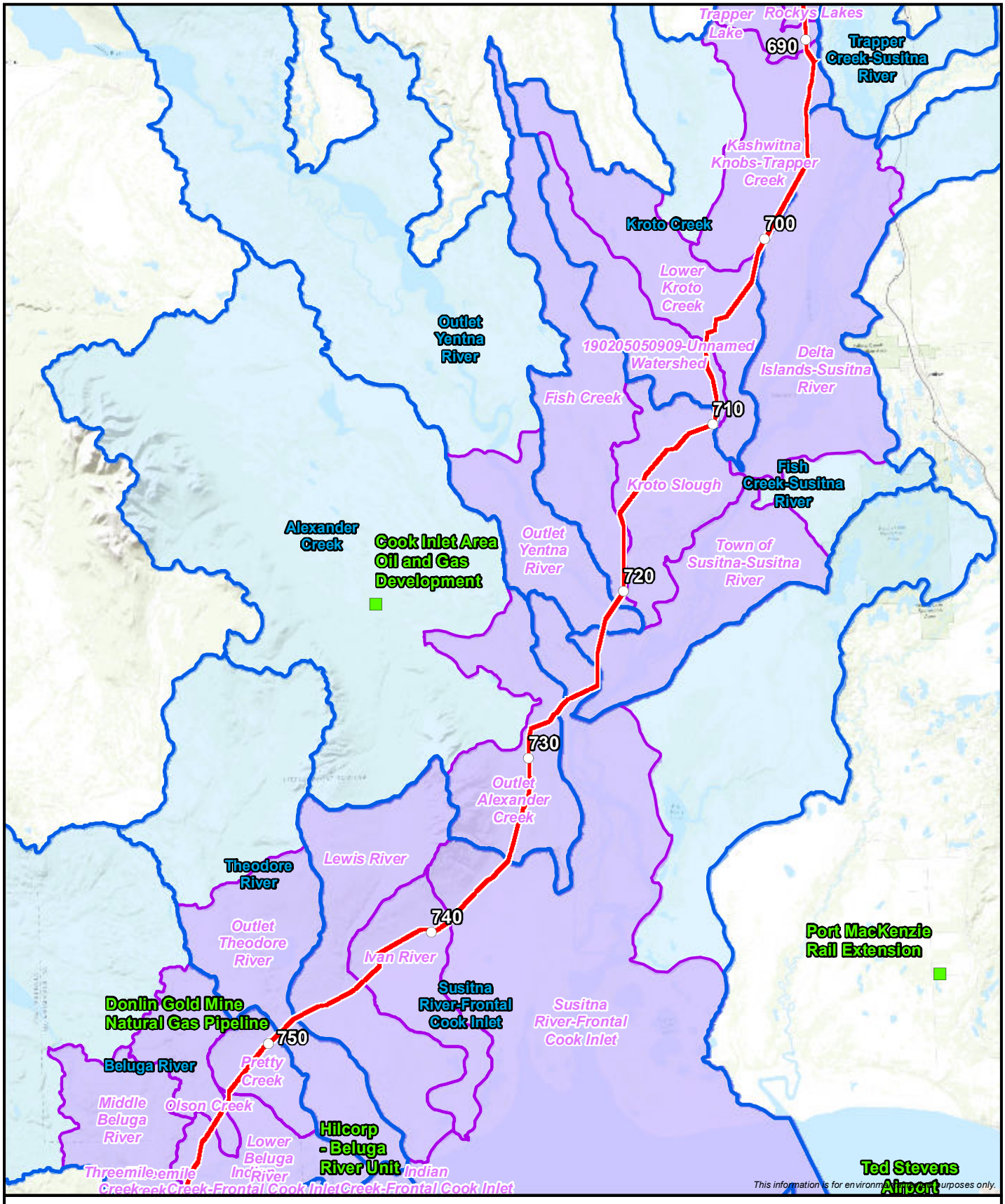
Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

N W E S

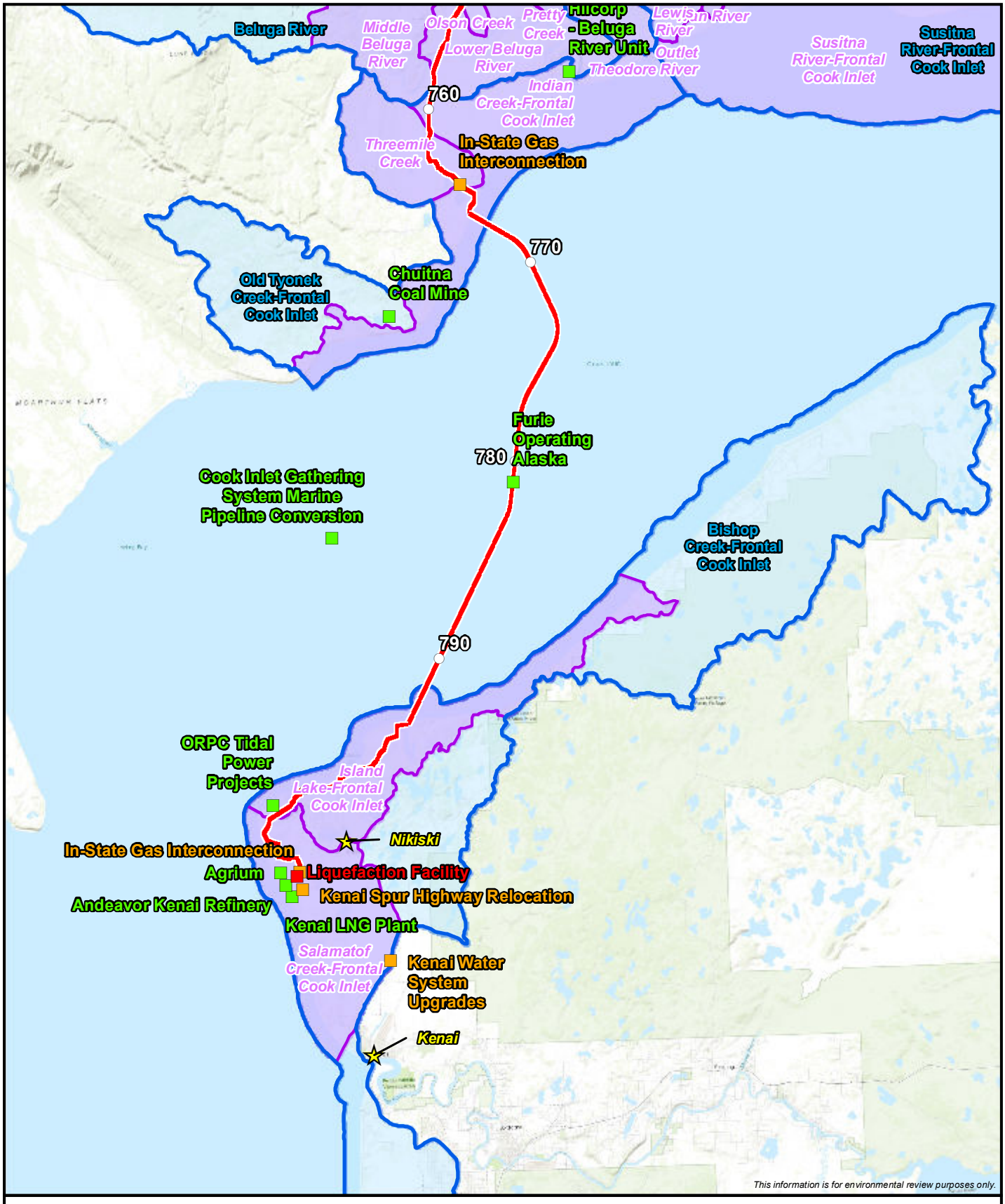
# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 570–640




**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 640–690




**Appendix W-2**
**Alaska LNG Project**
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 690–760




Alaska LNG Major Aboveground Facility
Community
Non-Jurisdictional Facility
Existing/Future Project
Milepost
Alaska LNG Proposed Mainline Route
HUC 10 Watershed
HUC 12 Watershed

0 5 10 Miles

Date: 06/14/2019 | SCALE: 1:400,000 when printed at 8.5x11

# Appendix W-2
## Alaska LNG Project
Past, Present, and Reasonably Foreseeable Actions in Project HUC10 and HUC12 Watersheds, Mainline Pipeline MP 760–806