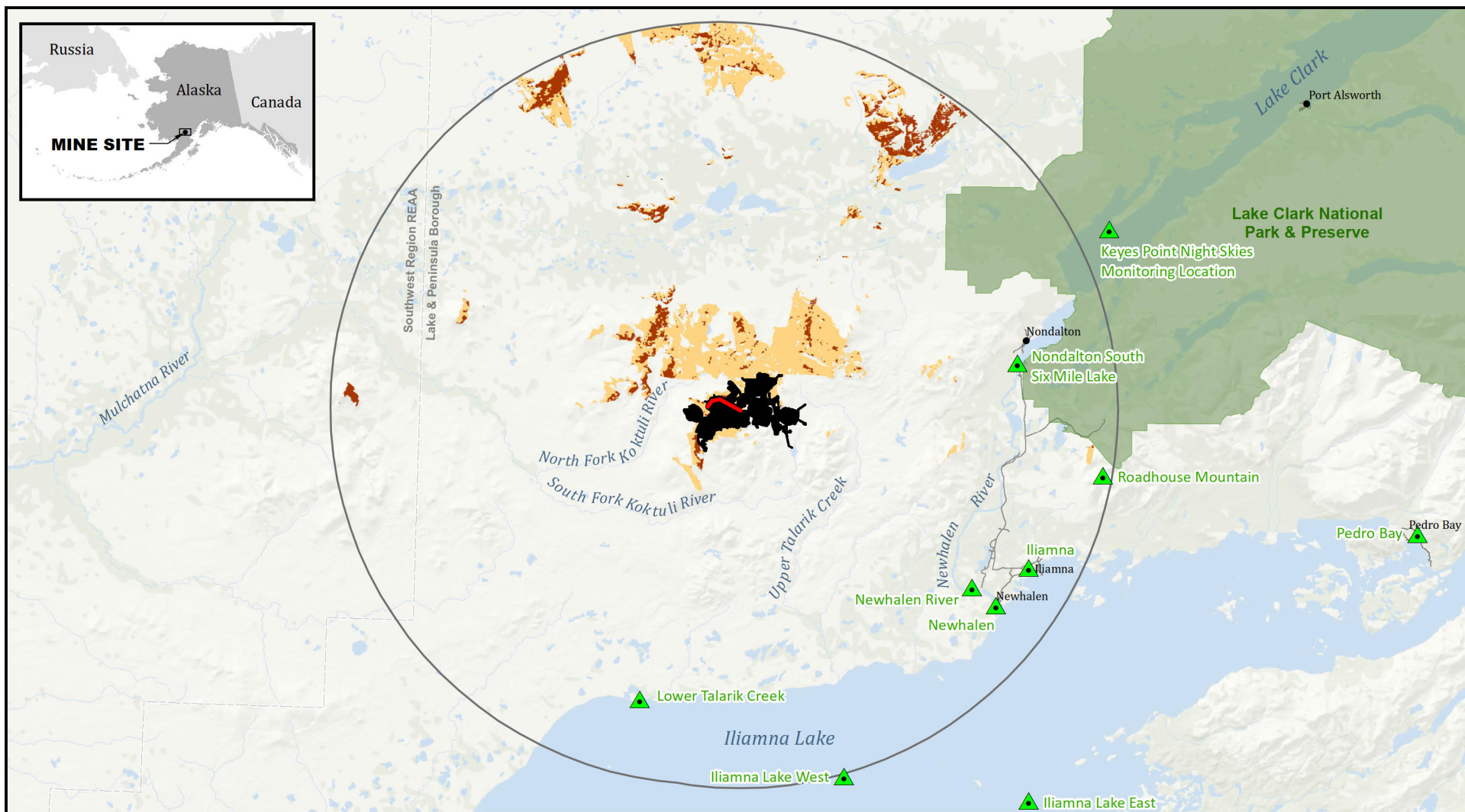


K4.11 AESTHETICS

Pebble Limited Partnership (PLP) developed viewshed analyses for Alternative 1a, Alternative 1, Alternative 2-North Road and Ferry with Downstream Dams, and Alternative 3—North Road Only (PLP 2018-RFI 034a; PLP 2018-RFI 034c; PLP 2019-RFI 034e, PLP 2020-RFI 034g). These analyses were used to form the basis of analysis in Section 4.11, Aesthetics, and are below in Figure K4.11-1 through Figure K4.11-15.

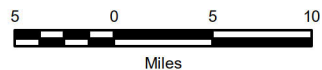
Simulations of project components from a series of predetermined Key Observation Points (KOPs) were developed by PLP (PLP 2018-RFI 034a) and shown in Figure K4.11-16 through Figure K4.11-22.



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- Main Embankment Crest
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (25 mi radius)

Action Alternative

- Alternative 1a

Other Features

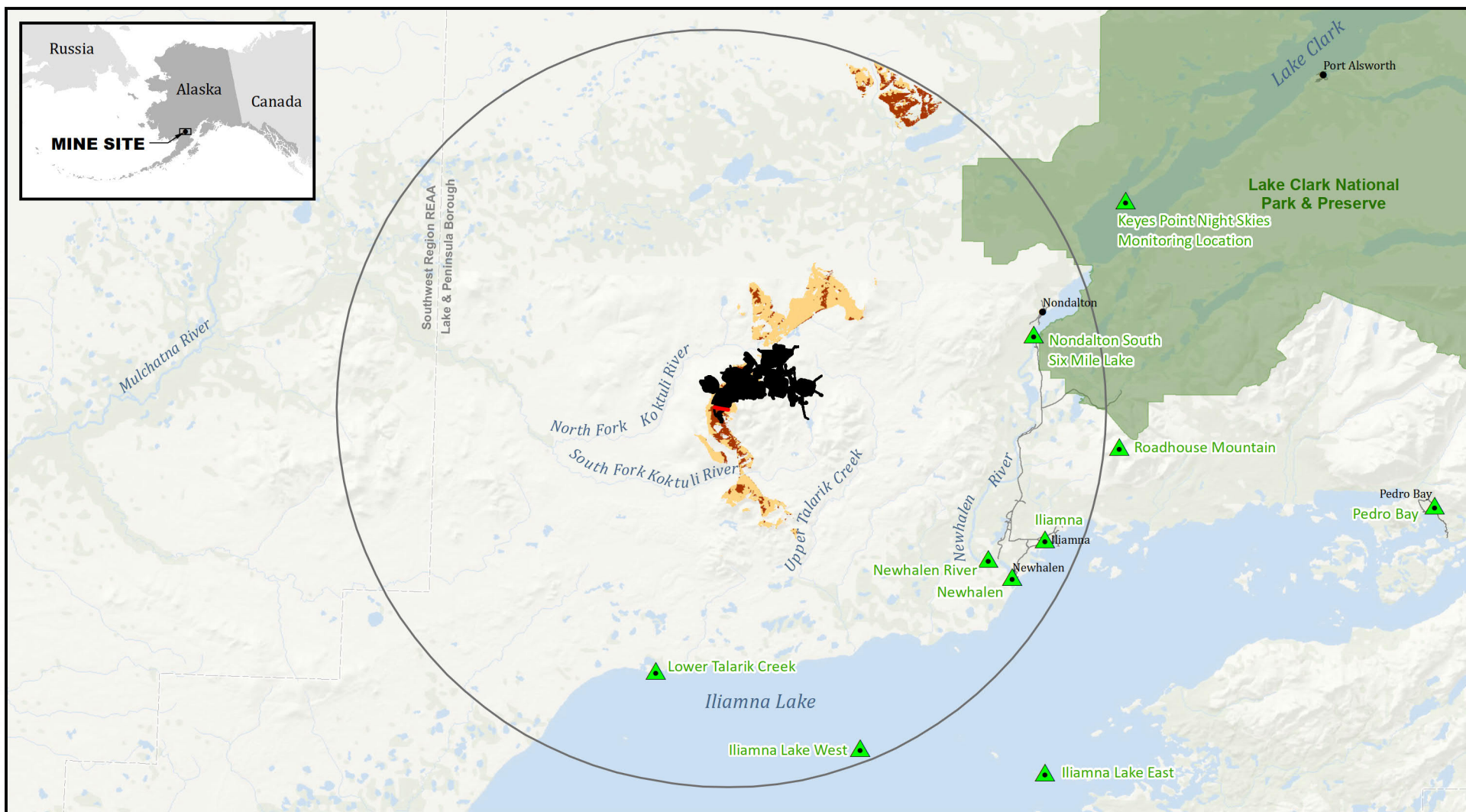
- Local Roads
- Borough Boundary
- National Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

PEBBLE PROJECT EIS

TSF MAIN EMBANKMENT VIEWSHED ANALYSIS

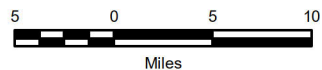
FIGURE K4.11-1



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- South Embankment Crest
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (25 mi radius)

Action Alternative

- Alternative 1a

Other Features

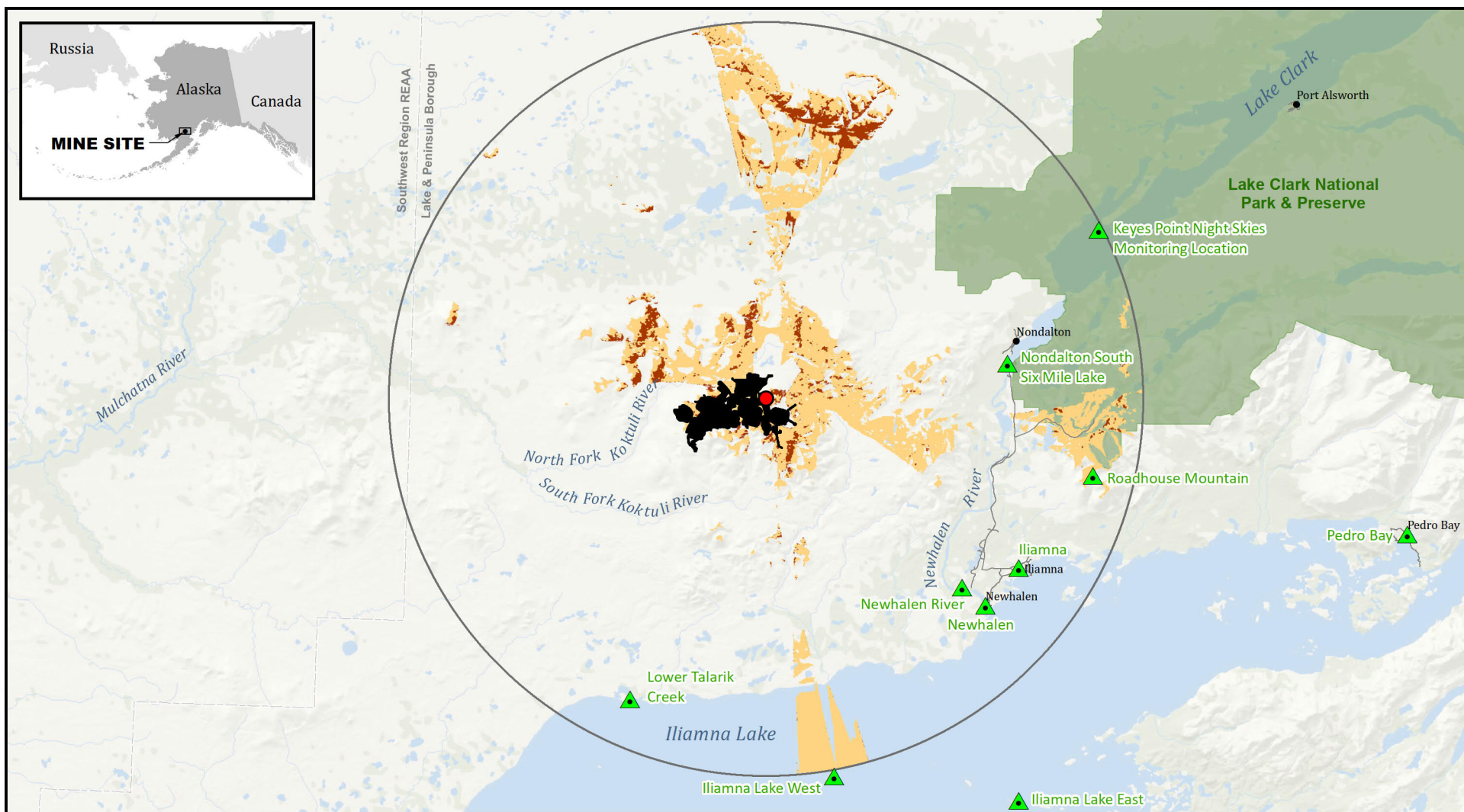
- Local Roads
- Borough Boundary
- National Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

TSF SOUTH EMBANKMENT VIEWSHED ANALYSIS

PEBBLE PROJECT EIS

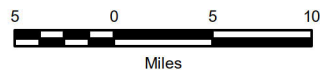
FIGURE K4.11-2



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- Coarse Ore Stockpile Top
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (25 mi radius)

Action Alternative

- Alternative 1a

Other Features

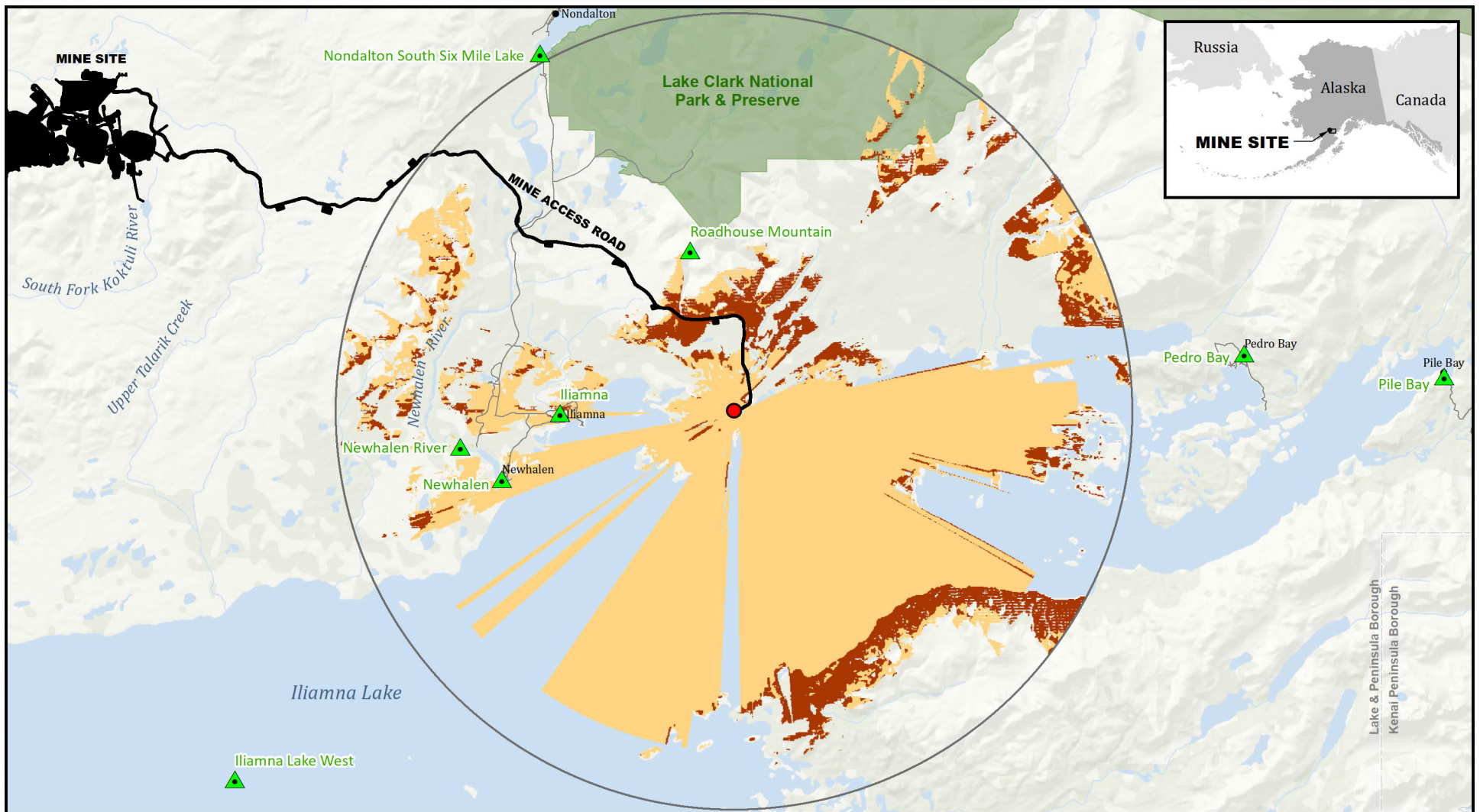
- Local Roads
- Borough Boundary
- National Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

PEBBLE PROJECT EIS

COARSE ORE STOCKPILE VIEWSHED ANALYSIS

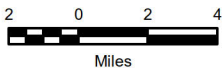
FIGURE K4.11-3



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- Eagle Bay Ferry Terminal Maintenance Shop
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (15 mi radius)

Action Alternative

- Alternative 1a

Other Features

- Local Roads
- Borough Boundary
- National Park

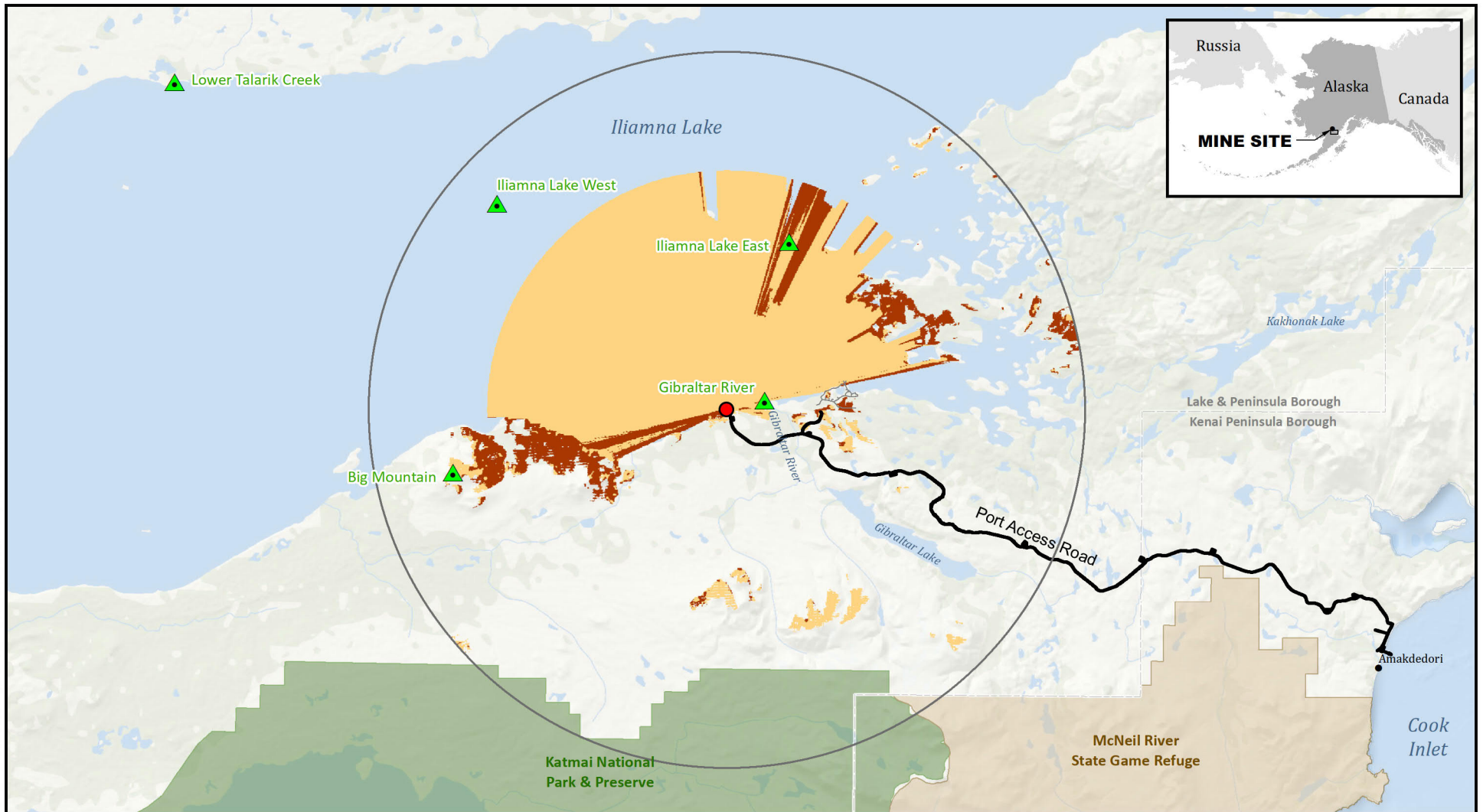
Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

Alternative 1a mine access road and Eagle Bay ferry terminal are also part of Alternative 2.

**ALTERNATIVE 1A AND ALTERNATIVE 2
EAGLE BAY FERRY TERMINAL VIEWSHED ANALYSIS**

FIGURE K4.11-4

PEBBLE PROJECT EIS



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- South Ferry Terminal Maintenance Shop
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (15 mi radius)

Action Alternative

- Alternative 1a

Other Features

- Local Roads
- Borough Boundary
- National Park
- State Game Refuge/Sanctuary

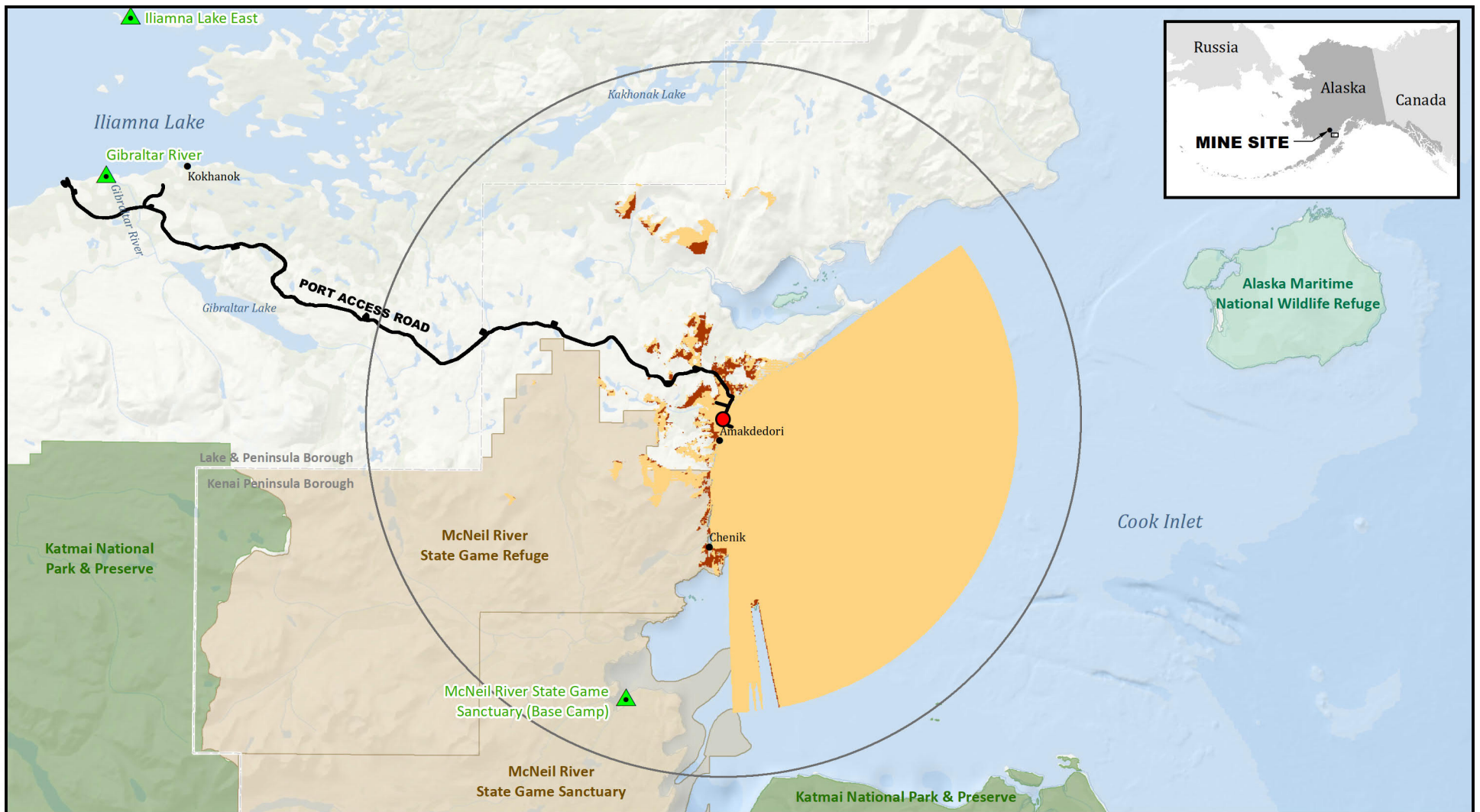
Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

Alternative 1a port access road and south ferry terminal are also part of the alternative 1.

ALTERNATIVE 1A AND ALTERNATIVE 1 SOUTH FERRY TERMINAL VIEWSHED ANALYSIS

FIGURE K4.11-5

PEBBLE PROJECT EIS



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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2 0 2 4
Miles

Viewshed Analysis

- Key Observation Points
- Amakdedori Port Power Generator Building
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (15 mi radius)

Action Alternative

- Alternative 1a

Other Features

- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary

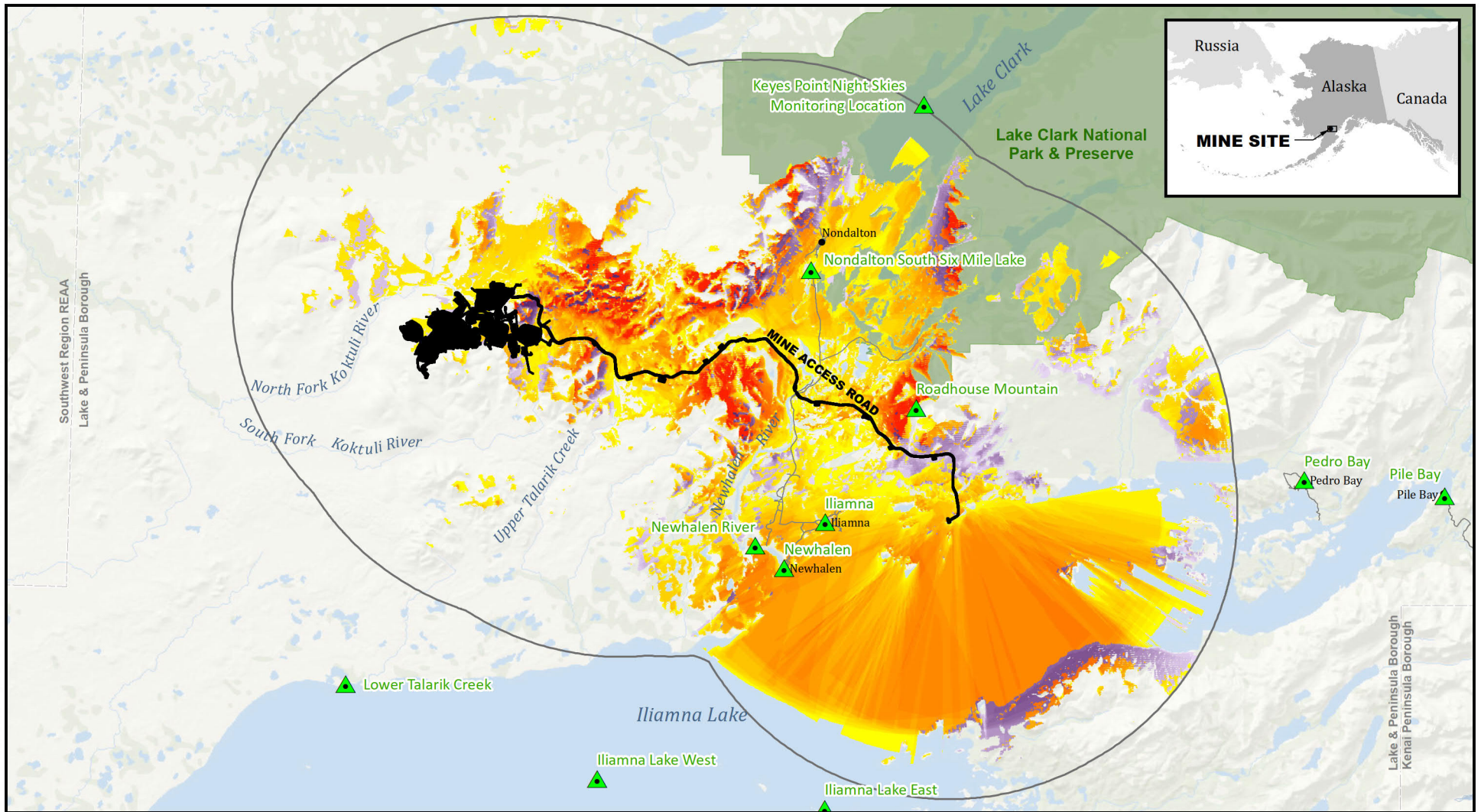
Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

The Amakdedori port and port access road are also part of Alternative 1a.

ALTERNATIVE 1A AND ALTERNATIVE 1 AMAKDEDORI PORT VIEWSHED ANALYSIS

FIGURE K4.11-6

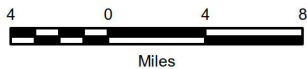
PEBBLE PROJECT EIS



Sources: PLP 2019-RF1153, 2019-RF1034e



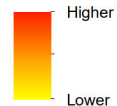
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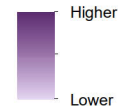
Viewshed Analysis

- Key Observation Points
- Analysis Area (15 mi radius)
- Action Alternative**
- Alternative 1a

Visible Area/Land Cover



Visible Area/Bare Earth



Other Features

- Local Roads
- Borough Boundary
- National Park

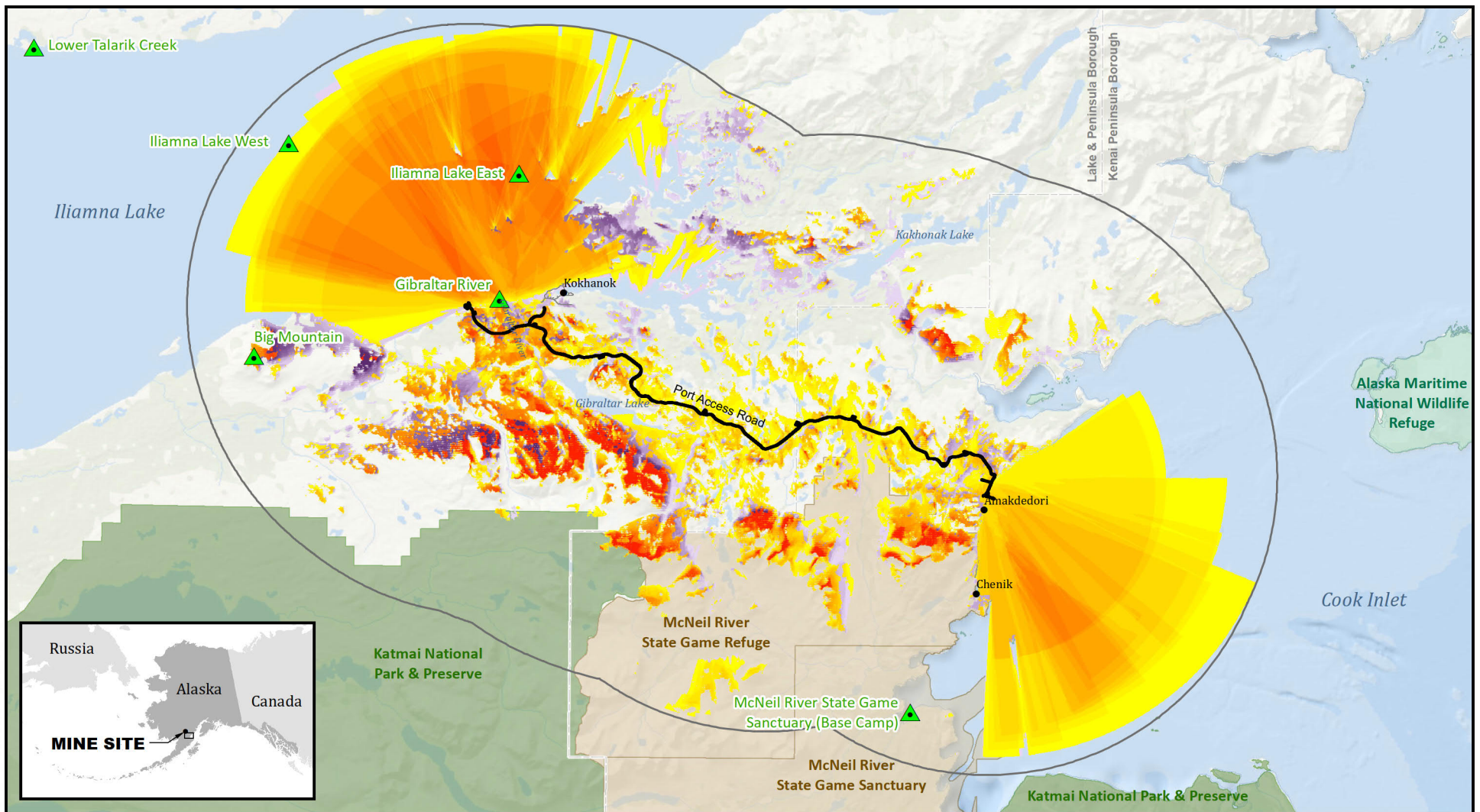
Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

The alternative 1a mine access road is also part of the alternative 2.

PEBBLE PROJECT EIS

ALTERNATIVE 1A AND ALTERNATIVE 2 MINE ACCESS ROAD VIEWSHED ANALYSIS

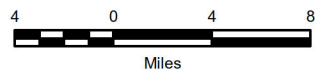
FIGURE K4.11-7



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a

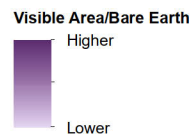
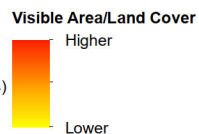


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Viewshed Analysis

- Key Observation Points
- Analysis Area (15 mi radius)



Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

The alternative 1a port access road is also part of the alternative 1.

PEBBLE PROJECT EIS

Alternative Alternative

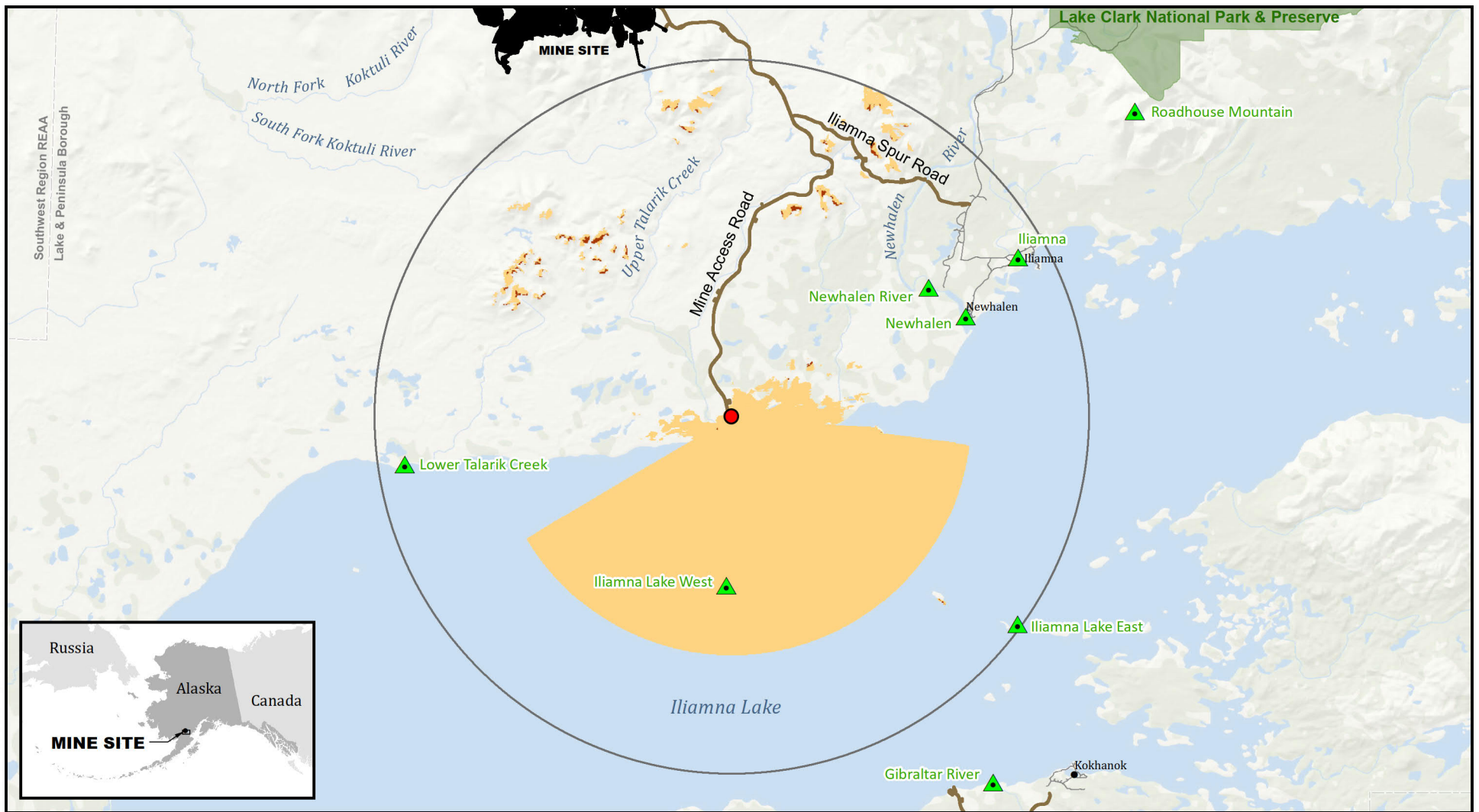
- Alternative 1a

Other Features

- Local Roads
- Borough Boundary
- National Park
- State Game Refuge/Sanctuary

ALTERNATIVE 1A AND ALTERNATIVE 1 PORT ACCESS ROAD VIEWSHED ANALYSIS

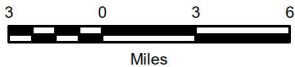
FIGURE K4.11-8



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- North Ferry Terminal Maintenance Shop
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (15 mi radius)

Action Alternatives

- Alternative 1a
- Alternative 1

Other Features

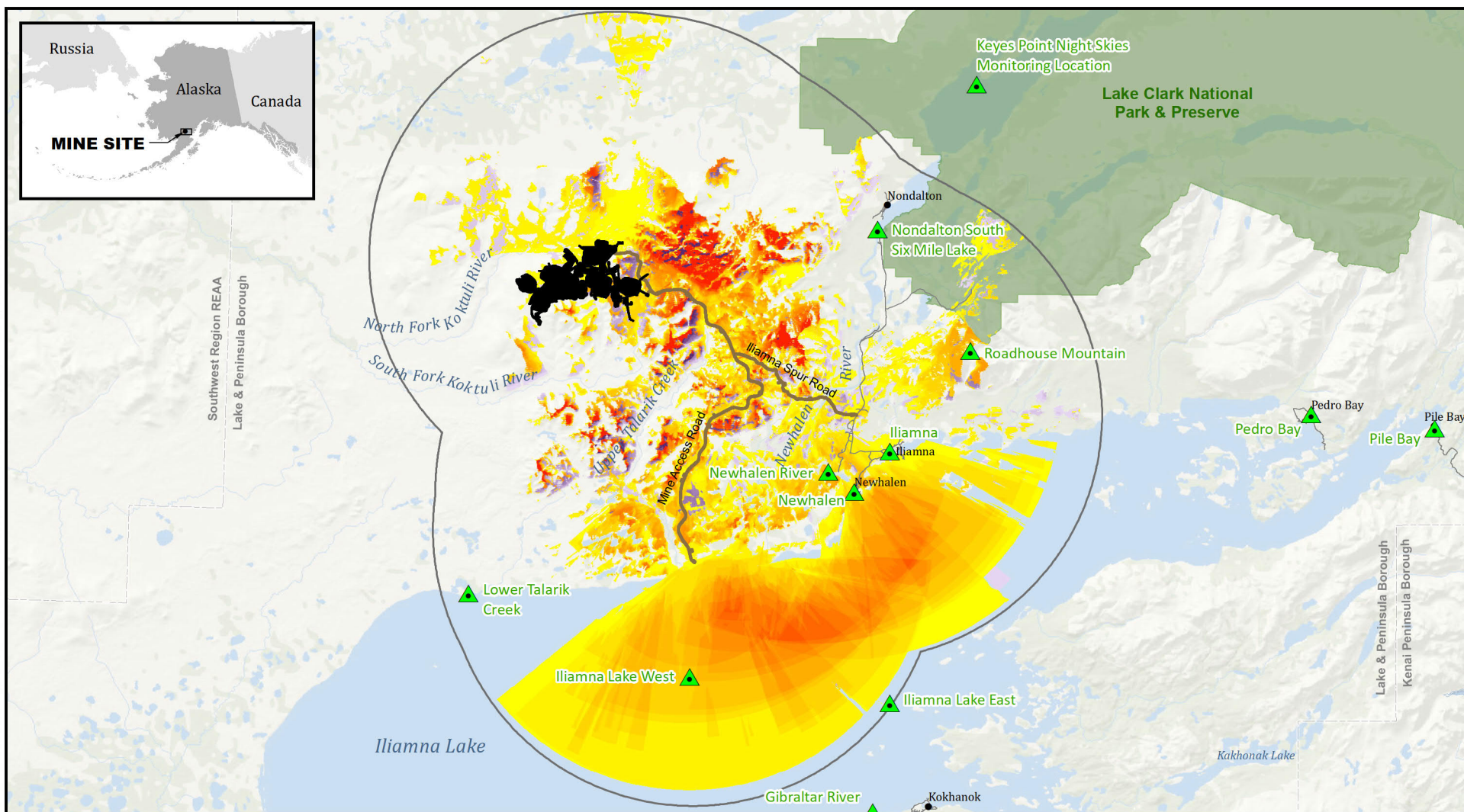
- Local Roads
- Borough Boundary
- National Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

PEBBLE PROJECT EIS

ALTERNATIVE 1 NORTH FERRY TERMINAL VIEWSHED ANALYSIS

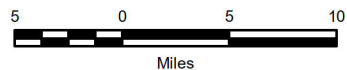
FIGURE K4.11-9



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



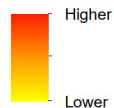
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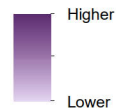
Viewshed Analysis

- Key Observation Points
- Analysis Area (15 mi radius)

Visible Area/Land Cover



Visible Area/Bare Earth



Action Alternatives

- Alternative 1a
- Alternative 1

Other Features

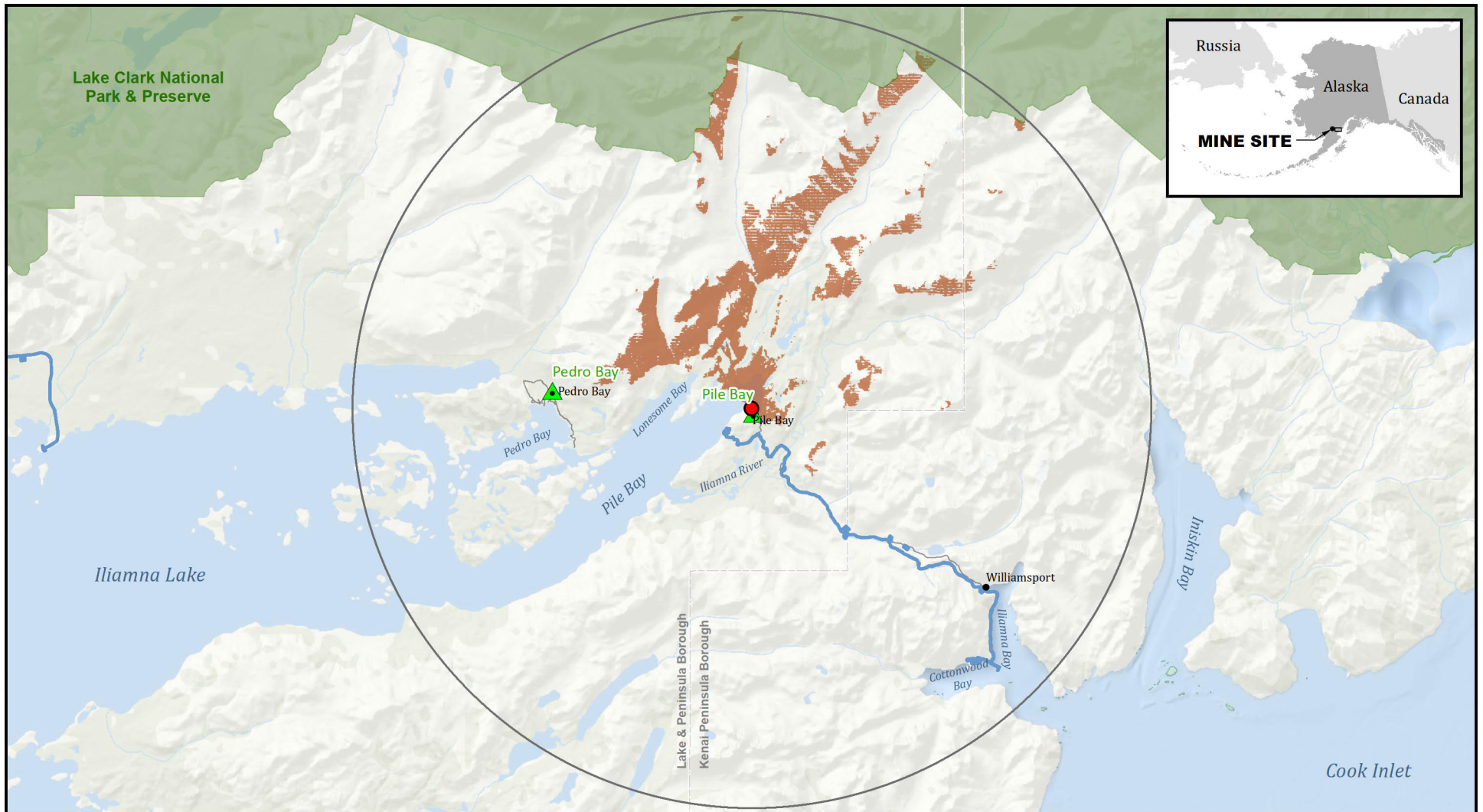
- Local Roads
- Borough Boundary
- National Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

PEBBLE PROJECT EIS

ALTERNATIVE 1 MINE ACCESS ROAD VIEWSHED ANALYSIS

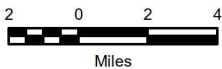
FIGURE K4.11-10



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- Pile Bay Ferry Terminal Maintenance Shop
- Viewshed*
- Analysis Area (15 mi radius)

Action Alternative

- Alternative 2

Other Features

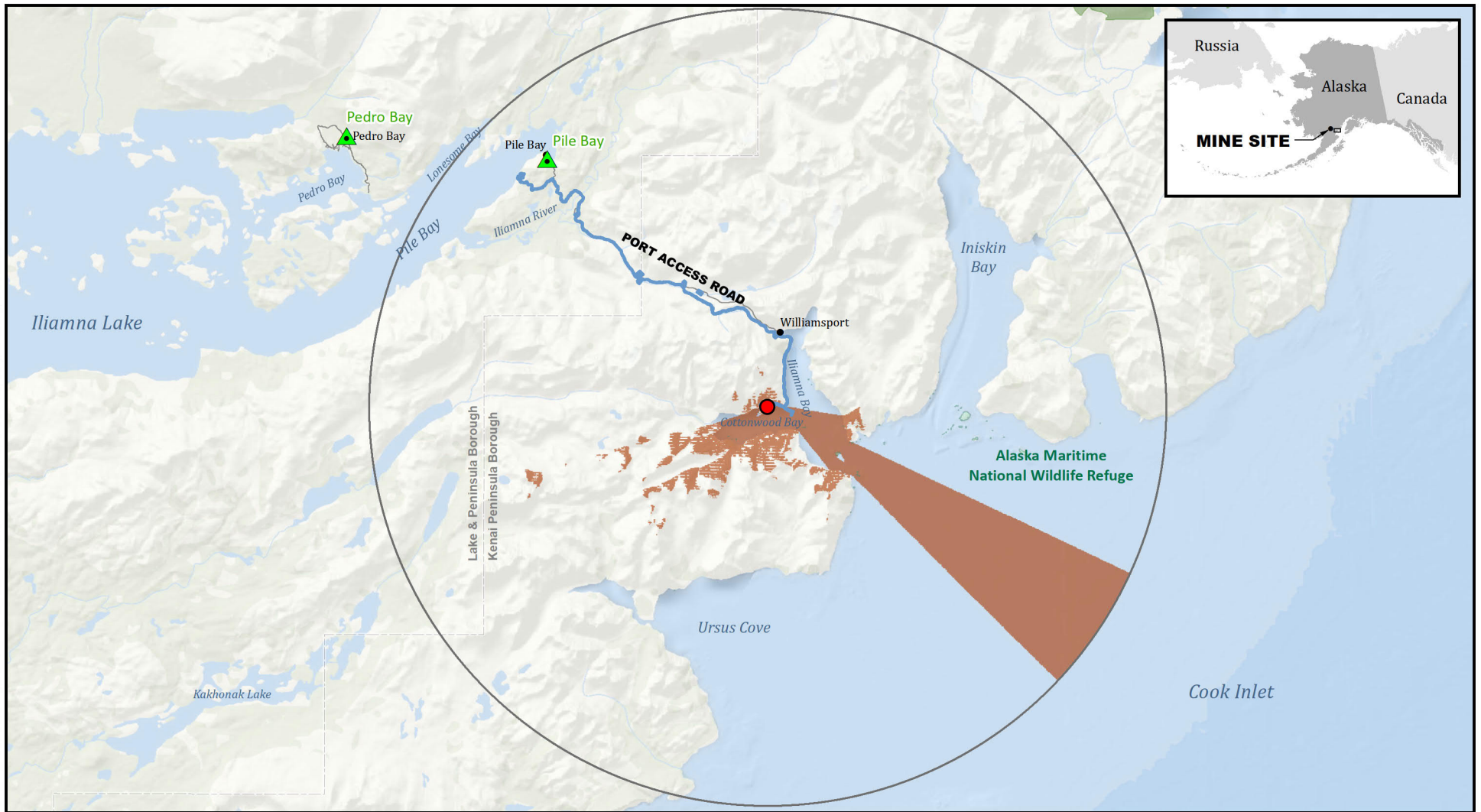
- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge

*Viewshed and visibility potential are based on base-earth digital elevation data and do not account for screening effects from vegetation. Actual visibility may be substantially less.

PEBBLE PROJECT EIS

ALTERNATIVE 2 PILE BAY FERRY TERMINAL VIEWSHED ANALYSIS

FIGURE K4.11-11



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



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2 0 2 4
Miles

Viewshed Analysis

- Key Observation Points
- Diamond Point Port Power Generator Building
- Viewshed*
- Analysis Area (15 mi radius)

Action Alternative

- Alternative 2

Other Features

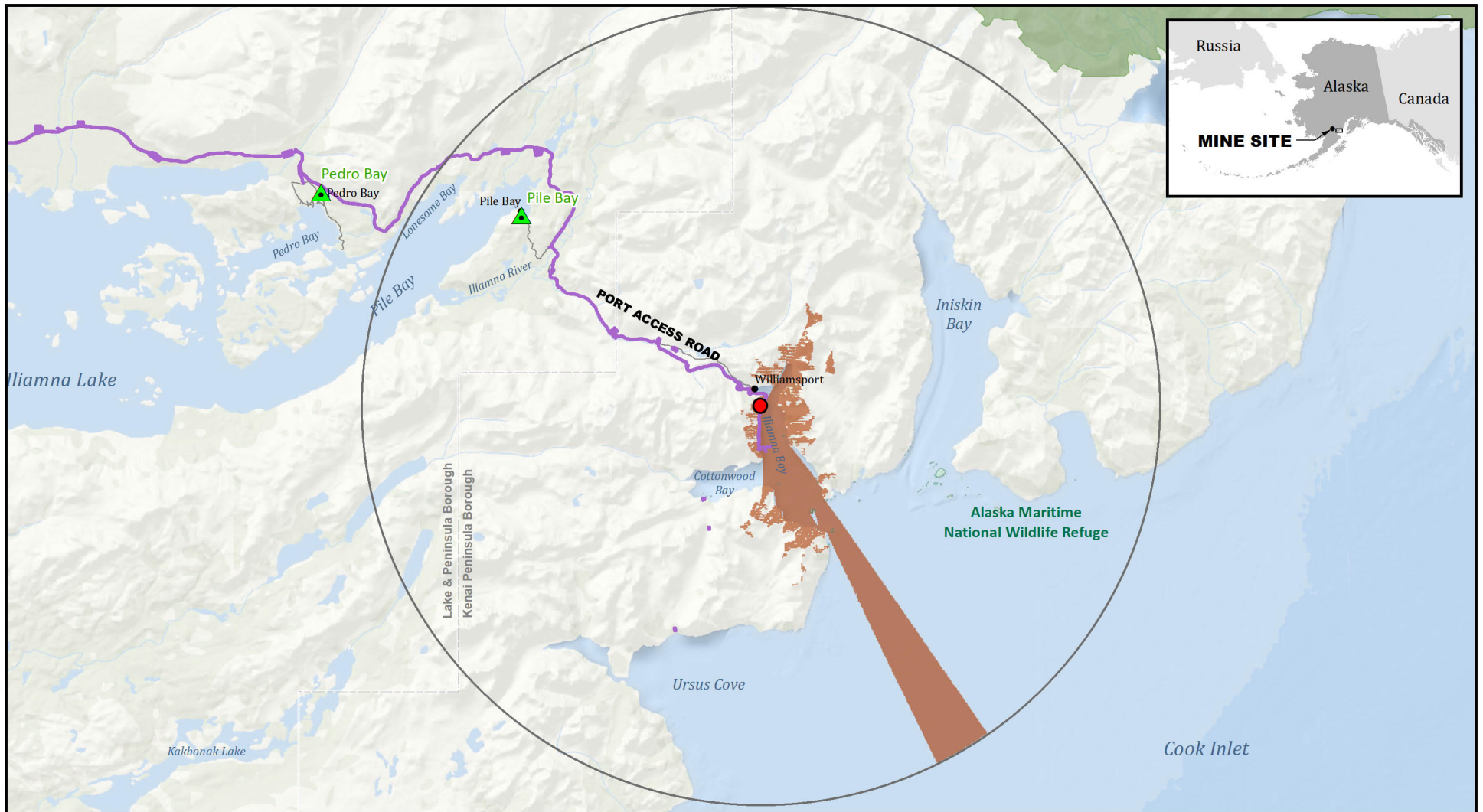
- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge

*Viewshed and visibility potential are based on base-earth digital elevation data and do not account for screening effects from vegetation. Actual visibility may be substantially less.

PEBBLE PROJECT EIS

ALTERNATIVE 2 DIAMOND POINT PORT VIEWSHED ANALYSIS

FIGURE K4.11-12



Sources: PLP 2020-RF1168; PLP 2019-RF1153;
HDR 2018-RF1 034a



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Viewshed Analysis

- Key Observation Points
- Diamond Point Port Power Generator Building
- Viewshed*
- DiamondPointPort_15miBuff_Alt3
- Action Alternative**
- Alternative 3

Other Features

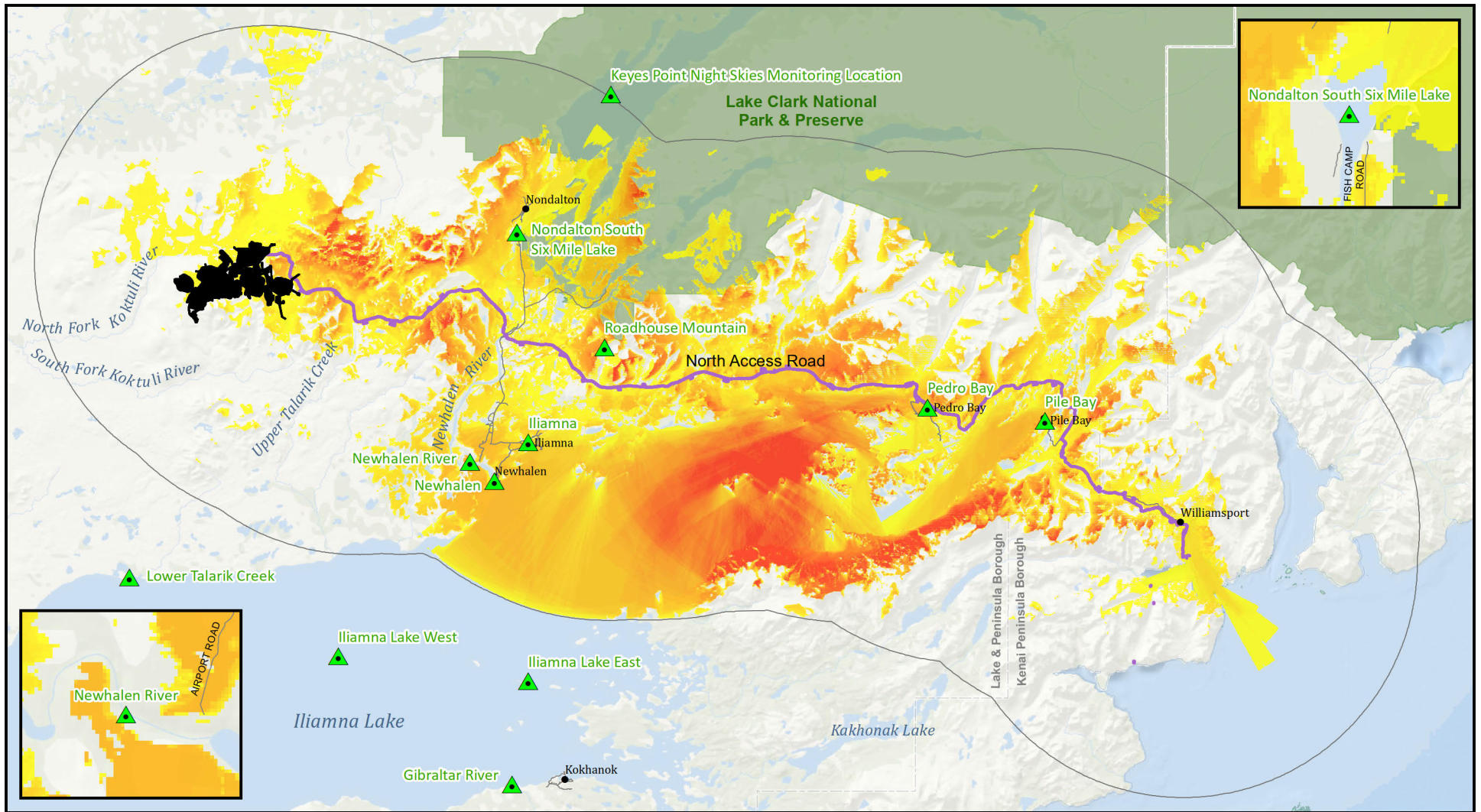
- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge

*Viewshed and visibility potential are based on base-earth digital elevation data and do not account for screening effects from vegetation. Actual visibility may be substantially less.

PEBBLE PROJECT EIS

ALTERNATIVE 3 DIAMOND POINT PORT VIEWSHED ANALYSIS

FIGURE K4.11-13



Sources: PLP 2020-RF1168; PLP 2019-RF1153;
HDR 2018-RF1 034a



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5 0 5 10
Miles

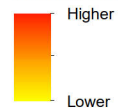
Viewshed Analysis

- Key Observation Points
- Analysis Area (15 mi radius)

Action Alternatives

- Alternative 1a
- Alternative 3

Potential Visibility Index



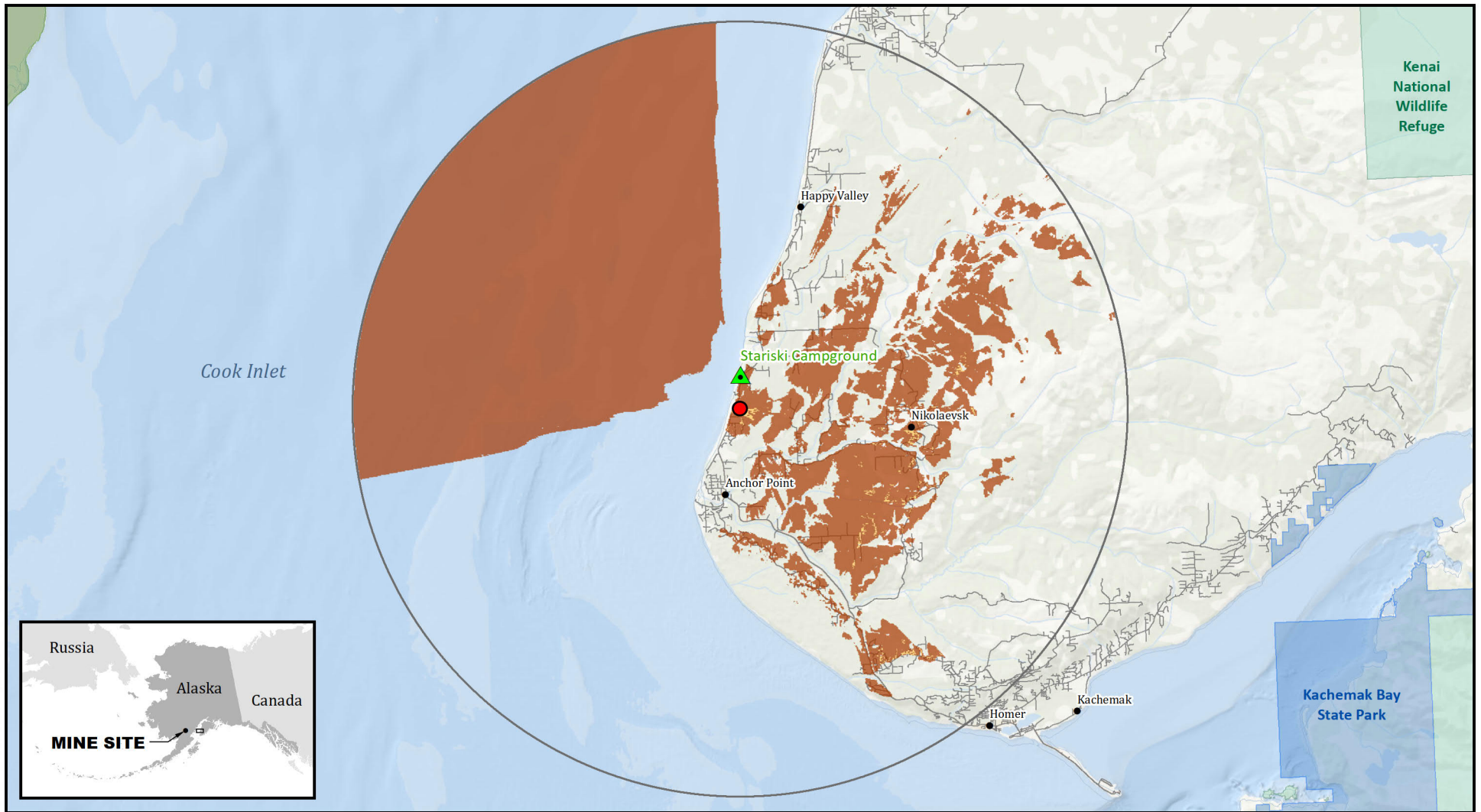
Other Features

- Local Roads
- Borough Boundary
- National Park

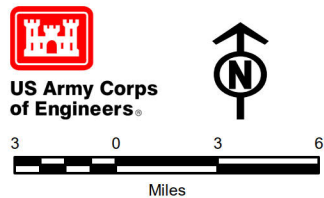
PEBBLE PROJECT EIS

ALTERNATIVE 3 NORTH ACCESS ROAD VIEWSHED ANALYSIS

FIGURE K4.11-14



Sources: PLP 2019-RF1153; HDR 2018-RF1 034a



Viewshed Analysis

- Key Observation Points
- Compressor Station
- Visible Area/Land Cover
- Visible Area/Bare Earth
- Analysis Area (15 mi radius)

Other Features

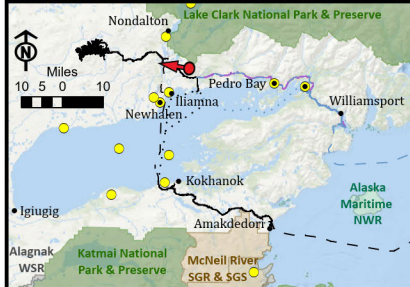
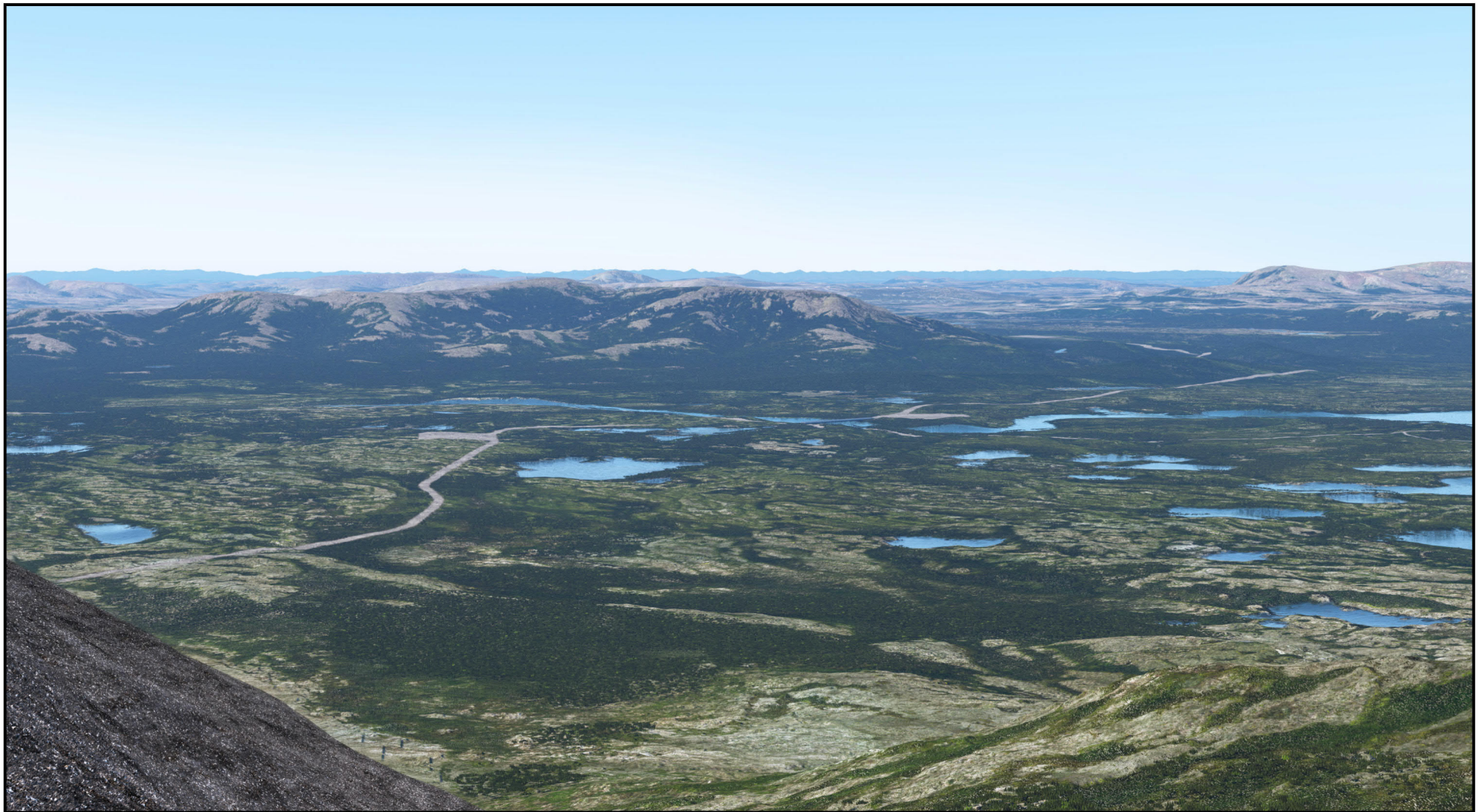
- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge
- Alaska State Park

Note: The visible area for the land cover viewshed model is also visible in the bare earth model.

PEBBLE PROJECT EIS

KENAI COMPRESSOR STATION VIEWSHED ANALYSIS

FIGURE K4.11-15



Sources: PLP 2020

- Key Observation Points
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a

- Alternative 2
- Alternative 3



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PEBBLE PROJECT EIS

Other Features

- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

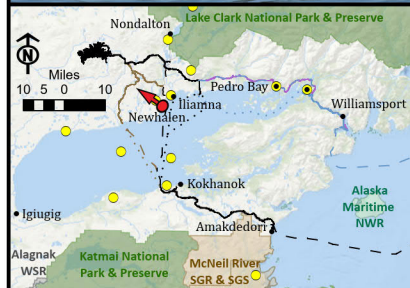
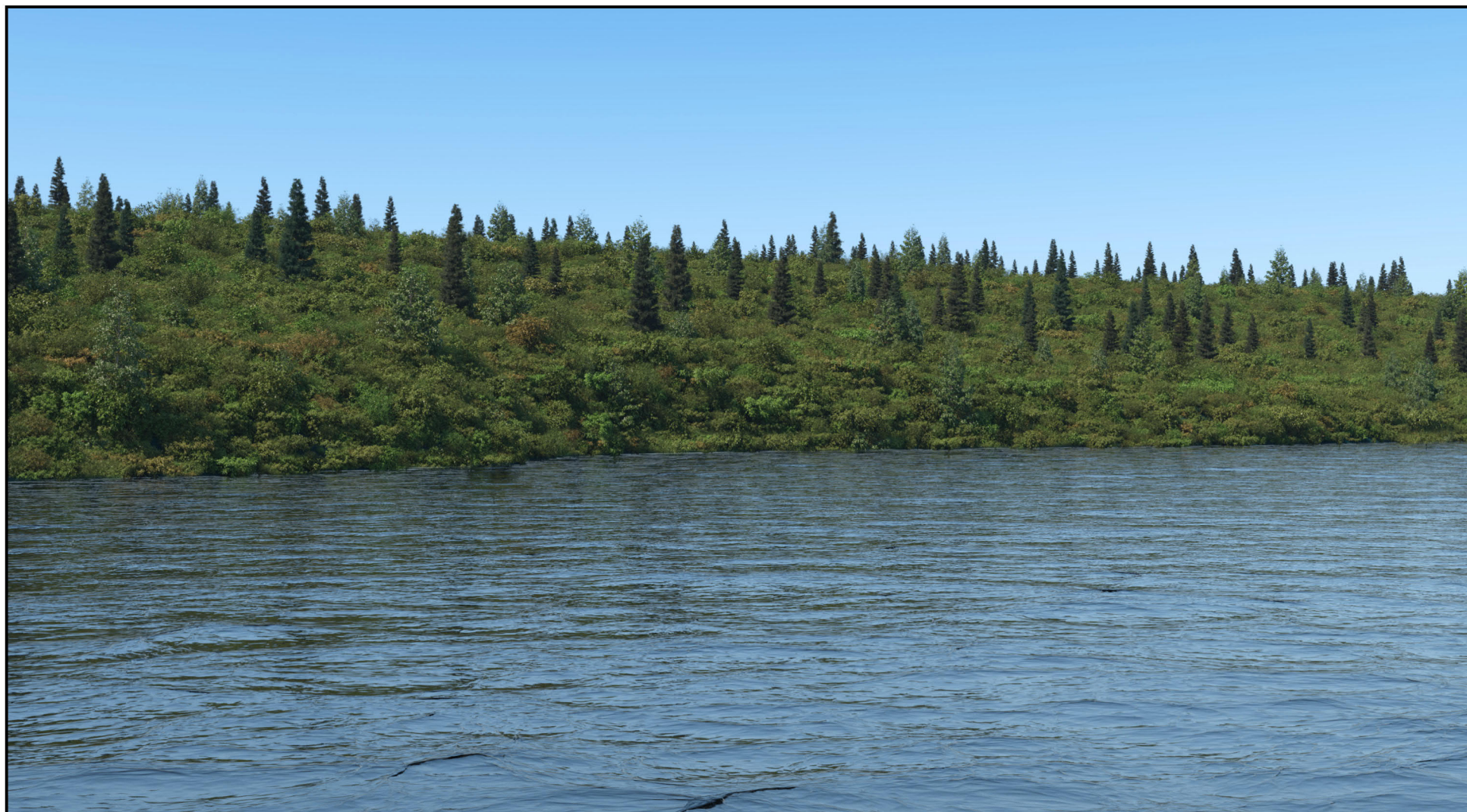
Simulation Information

Viewing direction: West
 Latitude: 59°50'41.62"N
 Longitude: 154°41'56.69"W
 Distance to project: 26 miles

SIMULATION

KOP: ROADHOUSE MOUNTAIN WEST TOWARD MINE SITE
 ALTERNATIVE 1A, ALTERNATIVE 2, AND ALTERNATIVE 3

FIGURE K4.11-16



Sources: PLP 2020



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- Key Observation Points
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a

- Alternative 1
- Alternative 2
- Alternative 3

Other Features

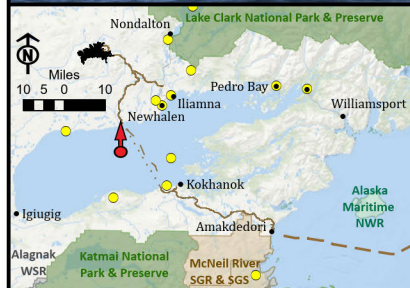
- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

Simulation Information

Viewing direction: Northwest
Latitude: 59°44'11.12"N
Longitude: 154°56'40.89"W
Distance to project: 23 miles

SIMULATION
KOP: NEWHALEN RIVER NORTHWEST TOWARD MINE SITE
ALL ALTERNATIVES

FIGURE K4.11-17



Sources: PLP 2020

- Key Observation Points
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines

■ Alternative 1



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PEBBLE PROJECT EIS

Other Features

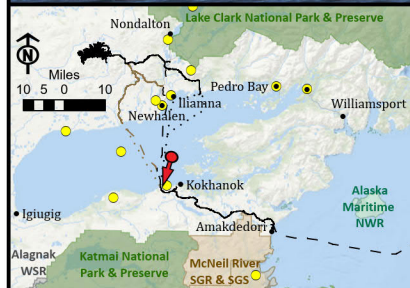
- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

Simulation Information

Viewing direction: North
 Latitude: 59°33'12.64"N
 Longitude: 155°10'52.56"W
 Distance to project: 29 miles

SIMULATION
 KOP: ILIAMNA LAKE WEST, NORTH TOWARD NORTH FERRY TERMINAL
 ALTERNATIVE 1

FIGURE K4.11-18



Sources: PLP 2020

- Key Observation Points
- Alternative 1
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a



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PEBBLE PROJECT EIS

Other Features

- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

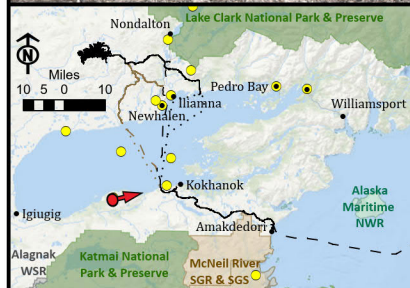
Simulation Information

Viewing direction: South
Latitude: 59°31'58.50"N
Longitude: 154°49'57.36"W
Distance to project: 35 miles

SIMULATION

KOP: ILIAMNA LAKE EAST, SOUTH TOWARD SOUTH FERRY
TERMINAL ALTERNATIVE 1A AND ALTERNATIVE 1

FIGURE K4.11-19



Sources: PLP 2020

- Key Observation Points
- Alternative 1
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a



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PEBBLE PROJECT EIS

Other Features

- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

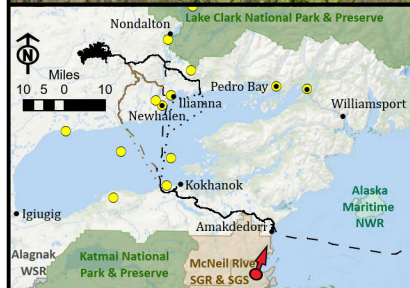
Simulation Information

Viewing direction: East
Latitude: 59°23'24.48"N
Longitude: 155°13'40.75"W
Distance to project: 40 miles

SIMULATION

KOP: BIG MOUNTAIN EAST TOWARD SOUTH FERRY TERMINAL
ALTERNATIVE 1A AND ALTERNATIVE 1

FIGURE K4.11-20



Sources: PLP 2020

- Key Observation Points
- Alternative 1
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a



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PEBBLE PROJECT EIS

Other Features

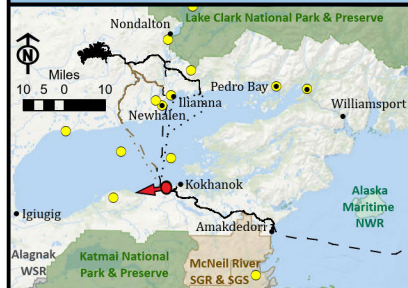
- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

Simulation Information

Viewing direction: North
 Latitude: 59° 7'19.11"N
 Longitude: 154° 14'20.34"W
 Distance to project: 72 miles

SIMULATION
 KOP: MCNEIL RIVER BASE CAMP NORTH TOWARD AMAKDEDORI
 ALTERNATIVE 1A AND ALTERNATIVE 1

FIGURE K4.11-21



Sources: PLP 2020



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PEBBLE PROJECT EIS

- Key Observation Points
- Action Alternatives**
- Ferry Routes
- Natural Gas Pipelines
- Alternative 1a

■ Alternative 1

Other Features

- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary
- Wild and Scenic River

Simulation Information

Viewing direction: West
 Latitude: 59°26'11.84"N
 Longitude: 154°51'22.67"W
 Distance to project: 41 miles

SIMULATION
 KOP: GIBRALTAR RIVER WEST TOWARD SOUTH FERRY TERMINAL
 ALTERNATIVE 1A AND ALTERNATIVE 1

FIGURE K4.11-22