

表 3 - 8 代替案それぞれの検討 (2)

IMPACT CATEGORIES	GRAVINA ACCESS PROJECT ALTERNATIVES												
	No Action	C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4			
-Business relocations	0	0	0	1	1	0	0	1	6	0			
-Estimated number of affected parcels	0	23	28	15	14	30	27	13	15	14			
-Total construction jobs <sup>6</sup>	NA	360	310	390	290	470	460	250	270	250			
-Annual O&M jobs <sup>7</sup>	16	2	2	2	1	1	1	51	51	51			
-Reductions in cruise-related spending (\$ million)	0	0	2.2	0	2.2	0	0	0	0	0			
-User economic benefits (\$ million)	0	55.2	62.3	64.2	70.0	27.1	22.6	-0.2	-0.2	2.0			
Transportation Impacts													
Miles of new roadway	NA	3.8	4.0	3.7	3.4	8.2	6.9	3.6	3.8	3.2			
Intrusion into Part 77 airspace (Y/N)	N	Y	Y	Y	Y	N	N	N	N	N			
<b>Number of floatplane flights per year potentially eliminated due to loss of the SVFR exemption (assuming 2,000 SVFR current operations annually)</b>	0	<b>1,800</b>	<b>1,800</b>	<b>1,800</b>	<b>1,800</b>	<b>200<sup>18</sup></b>	<b>100<sup>8</sup></b>	0	0	0			
Percentage of large ships diverted from Ketchikan	0	0	2	0	2	0	0	0	0	0			
Natural Resources Impacts													
Number of waterbody crossings	0	8	8	8	8	14	14	8	10	8			
Upland habitat losses (acres filled)	0.0	5.1	9.1	10.4	8.6	10.7	4.8	7.6	7.0	4.7			
Wetland habitat losses (acres filled)	0.0	44.0	42.3	38.8	36.1	96.5	85.1	42.5	47.6	35.4			
<b>Essential Fish Habitat losses (acres)</b>	<b>0.0</b>	<b>6.3</b>	<b>7.1</b>	<b>6.9</b>	<b>4.3</b>	<b>0.2</b>	<b>16.2</b>	<b>0.7</b>	<b>3.8</b>	<b>1.6</b>			
Cultural Resources Impacts													
Eligible historic/archaeological properties in area of potential effect	0	0	0	0	0	2	2	0	0	0			

<sup>1</sup> Rounded to nearest 5 million due to the variable and preliminary nature of engineering. Note that in the DEIS, "life-cycle costs" were characterized as 50-year life cycle costs, but in reality, are 20-year life-cycle costs.

<sup>2</sup> Hours of operation and downtimes would be the same for all ferries.

<sup>3</sup> Ferry service is typically limited to vehicles less than 20 feet in length. The weight limit is 30,000 pounds.

<sup>4</sup> Values provided represent travel times using new ferry facility only. Travel time for the existing airport ferry would be the same as for the No Action alternative.

<sup>5</sup> Not applicable - the No Action Alternative does not include access to developable land.

<sup>6</sup> Assumes a three-year construction period. Jobs can be full-time, part-time, or seasonal.

<sup>7</sup> Number of jobs represents one full-time employee.

<sup>8</sup> The Federal Aviation Administration's preliminary analysis of Alternatives F1 and F3 indicated that, although the alternatives appear to be outside the Exemption 4760 boundaries, some modification of the boundaries may be required. The analysis also indicates that a Pennock island crossing would be "less disruptive" to floatplane operations than the other bridge alternatives. For purposes of this analysis, HDR assumed 10 percent and 5 percent reductions in special visual flight rules (SVFR) operations for Alternatives F1 and F3, respectively.

### 3-3 アラスカ州 Greens Creek Tailing

アラスカ南東部の都市ジュノーの18マイル南西にある、Greens Creek Tailing 鉱山の拡張プロジェクトである。この鉱山は、毎年、1000万オンスの銀、65000オンスの金、および鉛と亜鉛を併せて200000トン産出する。しかし、今のままの規模では2015年に完全な閉山に追い込まれるとの見込みがあり、鉱山の拡張を行う必要が出てきている。



図3-3 Greens Creek Tailing 鉱山

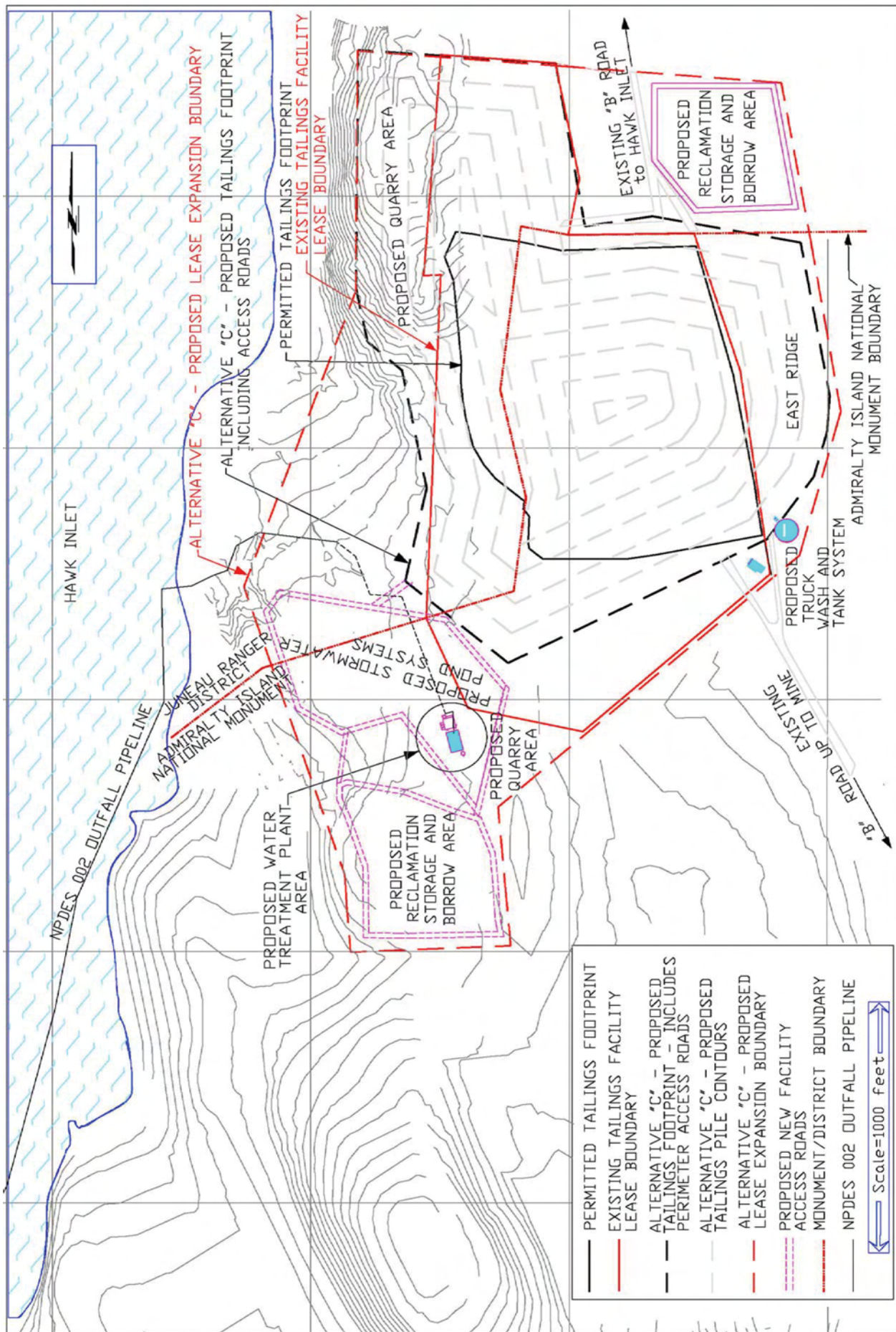


図 3 - 4 鉱山の拡張予定図

Alternative A は No action である。しかし、この案の場合、二年以内に地元の鉱山関連の経済に悪影響が出始め、265の直接の関連業務、141の間接的な関連業務合わせて3800万ドルの市場が縮小し、626人の労働者と125人の周辺学校の生徒の生活が脅かされるとの試算がなされている。

No Action の他に代替案はBからDまで、計4つが検討された。鉱業副産物の処理場や負荷の軽減対策のとりやすさ、周辺の水源への影響、現在守らなくてはならない法律との兼ね合いで、最終的にC案が選ばれた。

住民参加については、スコーピング段階からオープンハウス形式（自宅開放、特別の催し、来客を歓迎する家。アメリカのパーティの形式の一つ。長い時間を設定して、その間ならいつ行って、いつ帰ってもよい。誘われていない友達などを連れて行ってもよい気軽なパーティ。）で行われていた。

スコーピング段階において以下に示すとおり、58の主体から計135件の意見が提出された。

表3-9 スコーピング段階で意見を出した主体と数

Individual members of the public	44
Municipal government	1
Non-government organizations	6
Businesses	2
State and federal agencies	5
<b>Total</b>	<b>58</b>

DraftEIS が作成された後、それに対しての意見が聴取された。2447件の意見が、E-mail や手紙により提出された。

表3-10 DraftEIS に対して意見を出した主体と数

Individual members of the public	2437
(Form Letter A - 1305)	
(Form Letter B - 1112)	
(Other letters or written comments - 20)	
Non-government organizations	4
Businesses	3
Federal Agencies	3
<b>Total</b>	<b>2447</b>

事業に対する住民の意見は Form Letter A 及び B により提出されたとされているが、この A と B がどのように異なるものだったのかは入手した資料の中に具体的な記述が無かった。

懸念された主なものは、1. 周辺の水資源への影響、2. Admiralty Island Monument (1978年に Presidential Proclamation により設立された国定史跡) への影響であった。

### 3-4 アラスカ州 Management and Recovery of the Cook Inlet Beluga Whale Stock

アラスカ州のクック入り江(Cook Inlet)において、ベルーガ・イルカ（別名ベルーガ、ベルーガ・イルカ、海のカナリヤ、シー・カナリー、シロイルカ：歯クジラの一種。大人になると白くなる。5m、1.5 トン位。歌のような声を発するので「海のカナリヤ」と呼ばれる。）が激減している。その勢いは、1994年から1998年の間に、50%減という顕著なものである。

The National Marine Fisheries Service は、アラスカ先住民による、クック入り江のベルーガ・イルカの捕獲に一定の制限をかけ、ベルーガ・イルカの生息数を維持すべく事業を立ち上げた。

年にどれほどのベルーガ・イルカの捕獲を許すのか、制限をかける期間はどれほどの長さか、等の観点から複数の代替案が検討された。

代替案1：捕獲を完全に止める。

生態学的に十分とされる780頭に回復するまで、22年とされている。しかしこの案を選ぶ場合、20年以上にわたり、アラスカ先住民が生活の糧としてきた捕鯨を止めさせることになり、文化的な影響は避けられない。

代替案2：年に一頭の捕獲を2000年から2007年まで。

代替案3：2008年から、頭数が回復するまで年に二回（二頭）の捕獲を行う。

代替案4：年に二頭の捕獲を行うが、780頭を下回らないレベルに抑える。

代替案5：2%の増殖率の範囲内に捕獲を抑える。

代替案6：No action（何も対策を行わない）

DraftEIS には、この規制による経済への影響、およびベルーガ・イルカとその生息環境への影響の評価が盛り込まれている。それぞれの代替案を採用した場合のベルーガ・イルカの頭数の将来の推移予測は下の表に示す通りである。NMFS が推奨しているのは代替案4である。

住民参加に関しては、スコーピングのためのミーティングが1999年12/16に開かれた。

表3-11 各代替案でのイルカ頭数の将来予測

Table 2. Estimated Population Size by 10-Year Intervals for Different Alternatives

Year	No Harvest	1 Whale Per Year (2000-07) 2 Whales Per Year (2008+)	2 Whales Per Year	2% of Population Per Year
2000	371	371	371	371
2010	533	522	510	441
2020	738	701	689	518
2030	954	899	888	599
2040	1125	1070	1061	682
2050	1225	1181	1176	756

### 3-5 アラスカ州 Northwest National Petroleum

アラスカ北西部の計8800万エーカーの土地での、油田と天然ガス資源採掘場の開発事業である。現在、アメリカ国内の16%の原油生産量を担う地域である。しかし、生産量は徐々に減少してきている。それを補うためにも、新しい油田の開発が必要であるが、それが周辺の狩猟民族であるイヌイットの生活にどのような影響を与えるか、水鳥への影響、水棲ほ乳類への影響はどうか、等の観点から影響評価を行っている。

No Action を含めた全部で5つの代替案が策定された。

#### 代替案 No Action

現状維持。新しい油田の開発などは行わない。

#### 代替案A

Wilderness Study Areas および Wild and Scenic Rivers を外して開発を行う。

#### 代替案B

Bureau of Land Management の管轄する地域のうち、96%について開発を行う。

#### 代替案C

Bureau of Land Management の管轄する地域のうち、47%について開発を行う。

#### 代替案D (Preferred Alternative)

10年間かけて、1570000エーカー（管轄地域のうち、約17%）を開発する。



Source: USDOI BLM and MMS 2002  
**Map 1-1. National Petroleum Reserve-Alaska and the North Slope**

図 3-5 プロジェクト対象地域

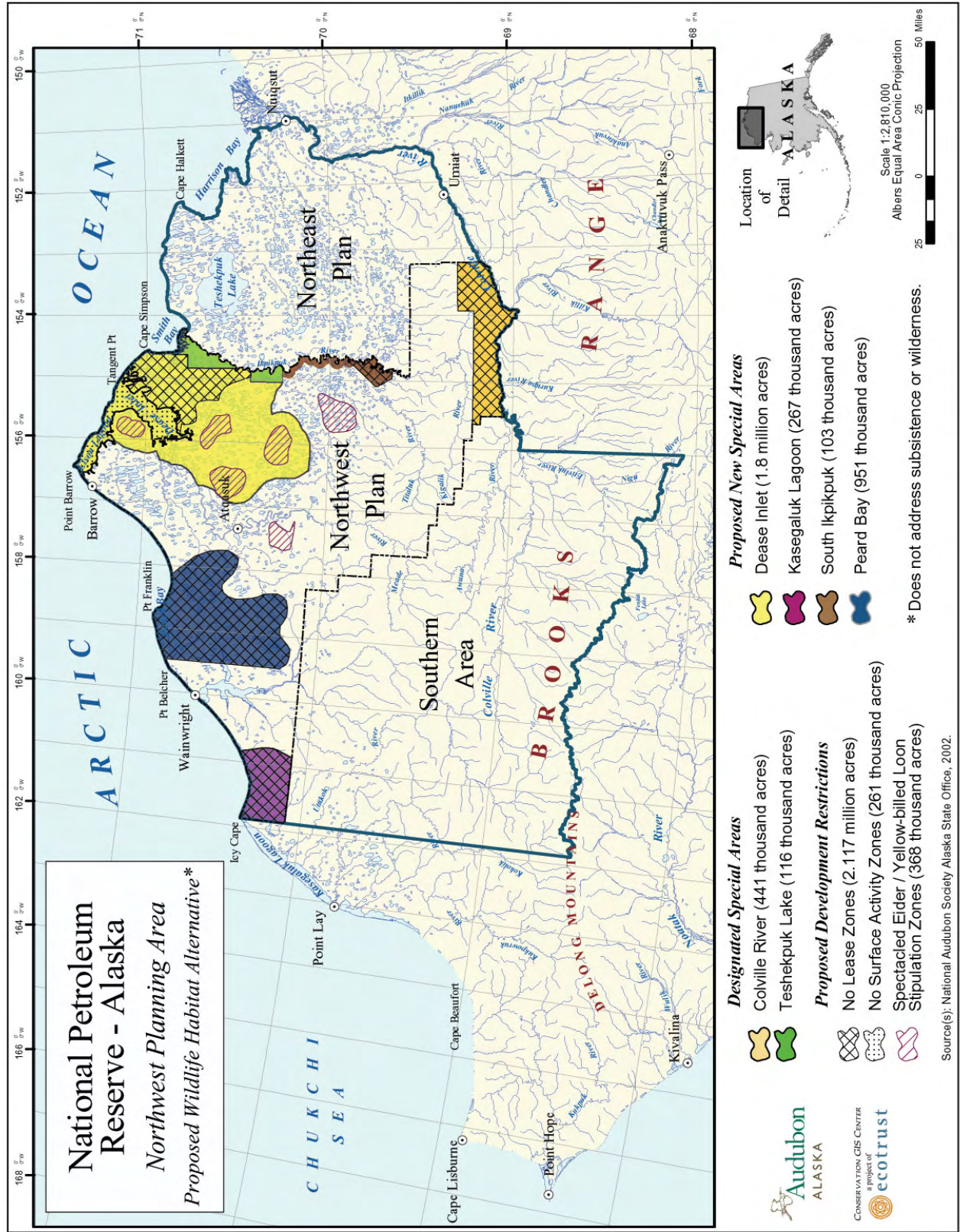


図 3-6 Preferred Alternative の開発予定図 (1)



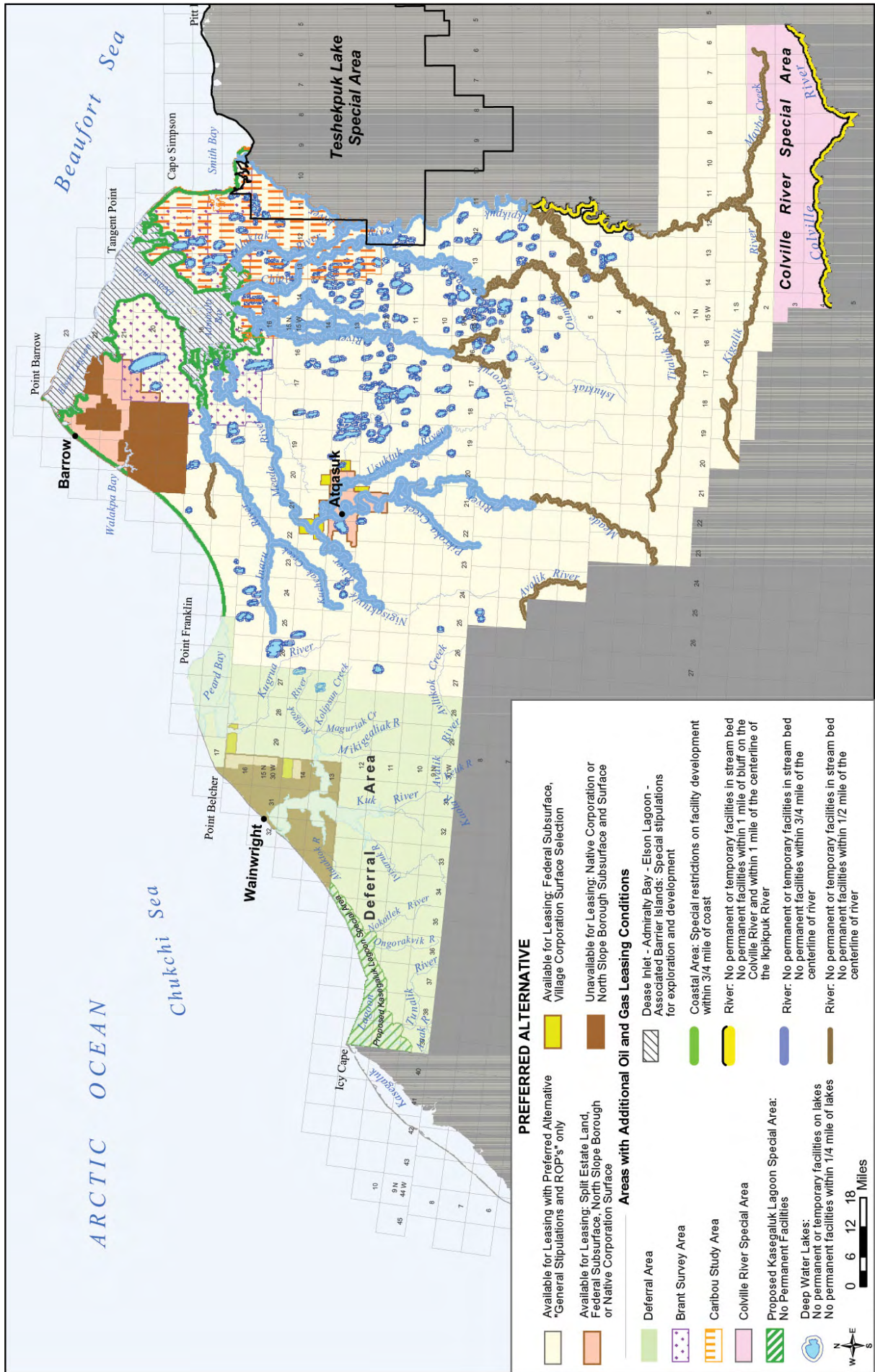


図 3-7 Preferred Alternative の開発予定図 (2)

### 3-6 アラスカ州 Liberty Development and Production Plan

増大する米国のエネルギー需要とエネルギー自給率向上のための、油田と天然ガス資源採掘場の開発事業である。560万エーカーの土地が、事業対象地域とされている。

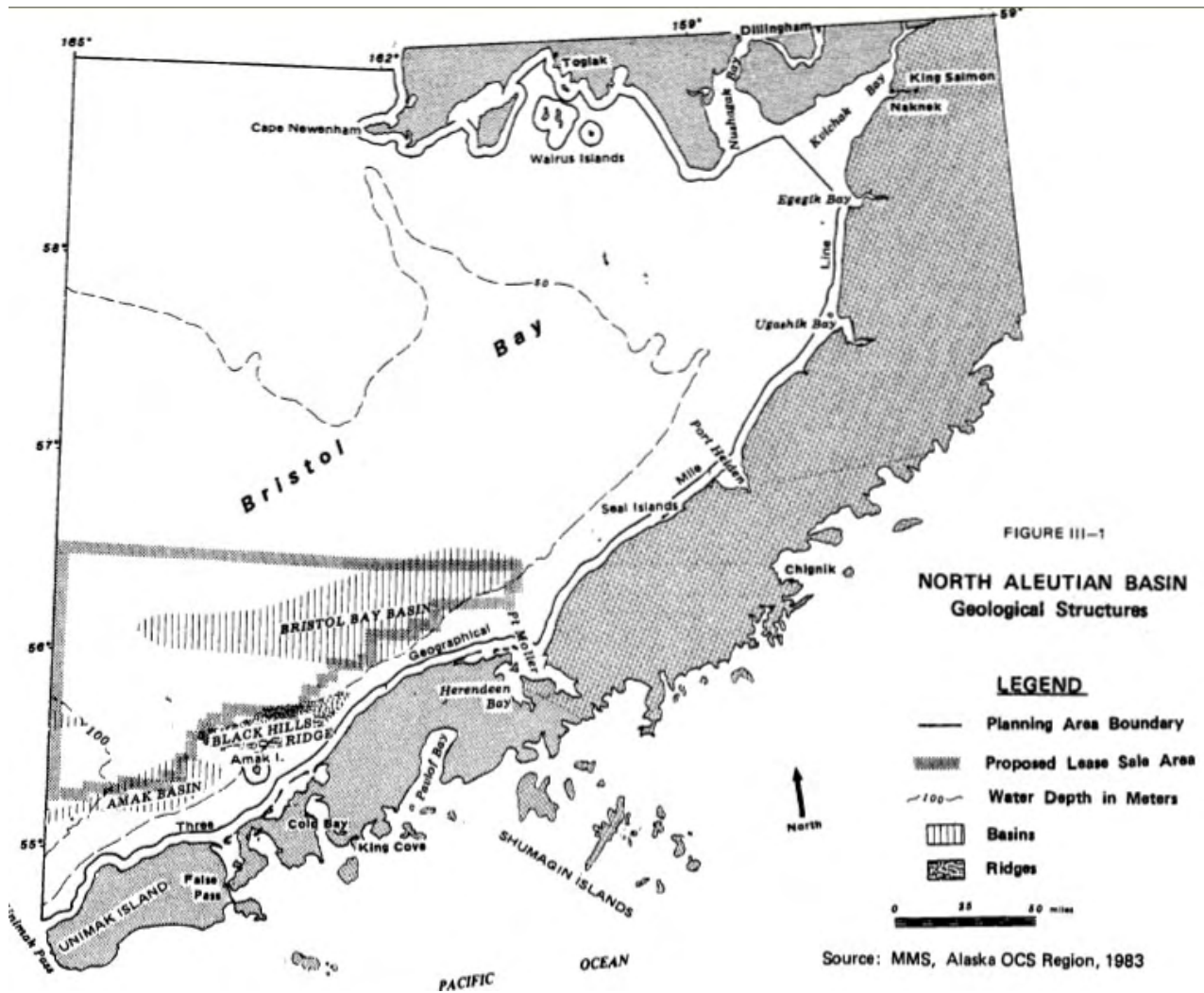


図3-8 プロジェクト対象地域

スコーピング（調査すべき影響の絞り込み）の段階から積極的な意見聴取を行っており、様々な NGO や企業団体、環境保護団体や地方公共団体、個人から意見が集められた。採りうる代替案についてもその時点で開示、意見を聞いている。開発面積や、取るべき影響軽減措置、得ることのできる資源量などの観点から複数の代替案が検討された。代替案が4つあることは報告書から分かったが、それぞれが具体的にどの程度の開発を行うのか、については詳細な記述をみることはできなかった。報告書の情報量は膨大で、A4で1000ページを超えた。

事業の計画地域には絶滅危惧種の生息域もあり、公式、非公式に多くの調査活動が行われた。

DEIS の完成の直後、公聴会が全3回、別々の場所で行われた。ここで得られた質問や意見に関する質問は、Final Environmental Impact Statement(以下 FEIS)にて回答された。

表 3-1-1 代替案の比較検討

Table II-1  
Resource Comparison of the Proposal and Alternatives  
(Conditional-Unrisked)

Resource	Minimum Case	Mean Case (Alternative I)	Maximum Case	Alaska Peninsula Deferral (Alternative IV)
Oil (MMbbls)	83	364	759	331
Gas (TCF)	---	2.62	5.25	2.20

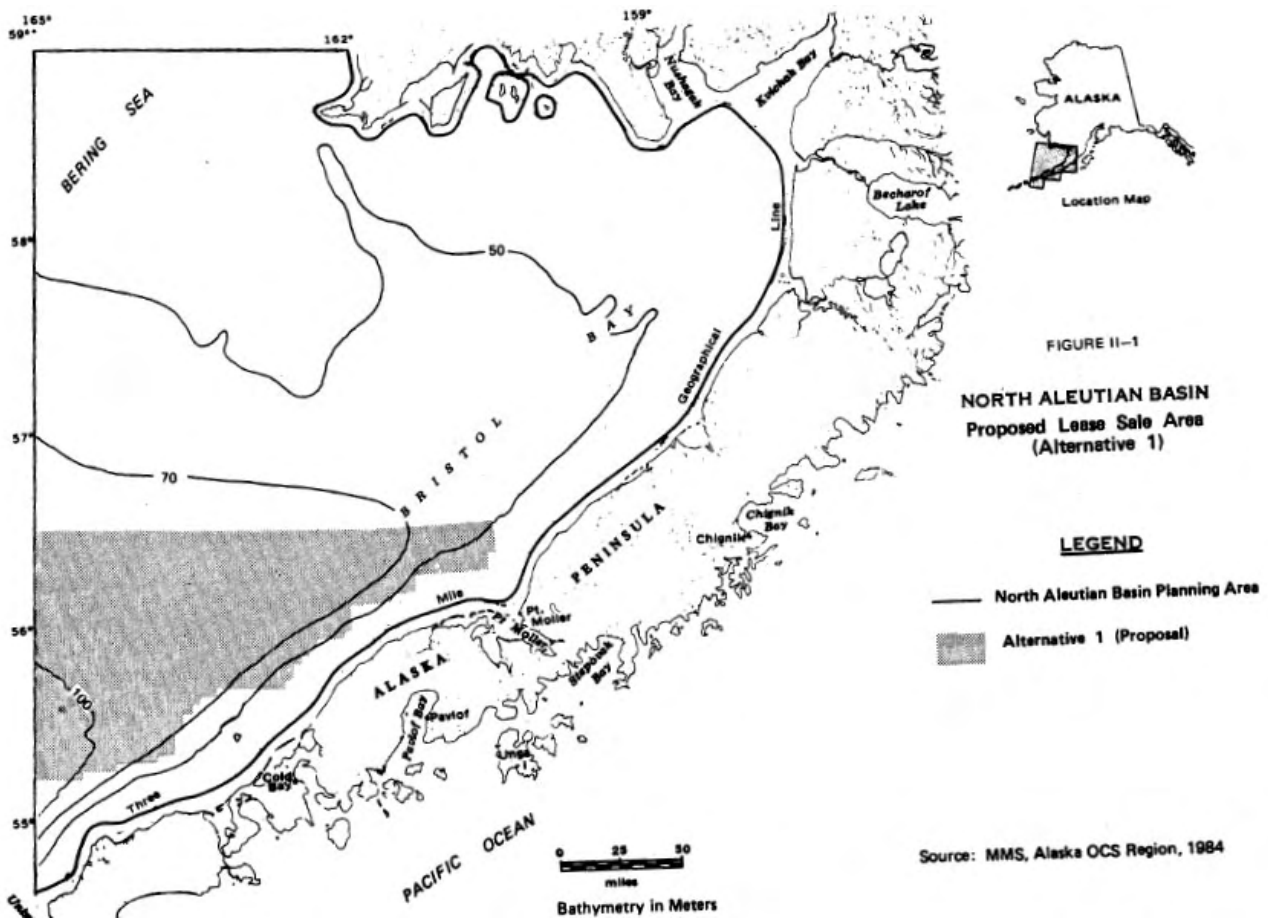


図 3-9 代替案 1 (開発面積：中) でのプロジェクト対象地域。

### 3-7 アラスカ州 Transformation of U.S. Army Alaska

軍のトレーニング施設の設置、迅速な展開のためのインフラ整備、無人機の発着とメンテナンスのための施設整備、軍港の整備、などを含めた米軍の再編成の一環としての事業である。

再編に加え、新しいインフラを整備するか否か、また空挺部隊を設置するか否かといった観点から四つの代替案が考案された。

代替案1：No Action

代替案2：第172歩兵旅団の再編のみ。

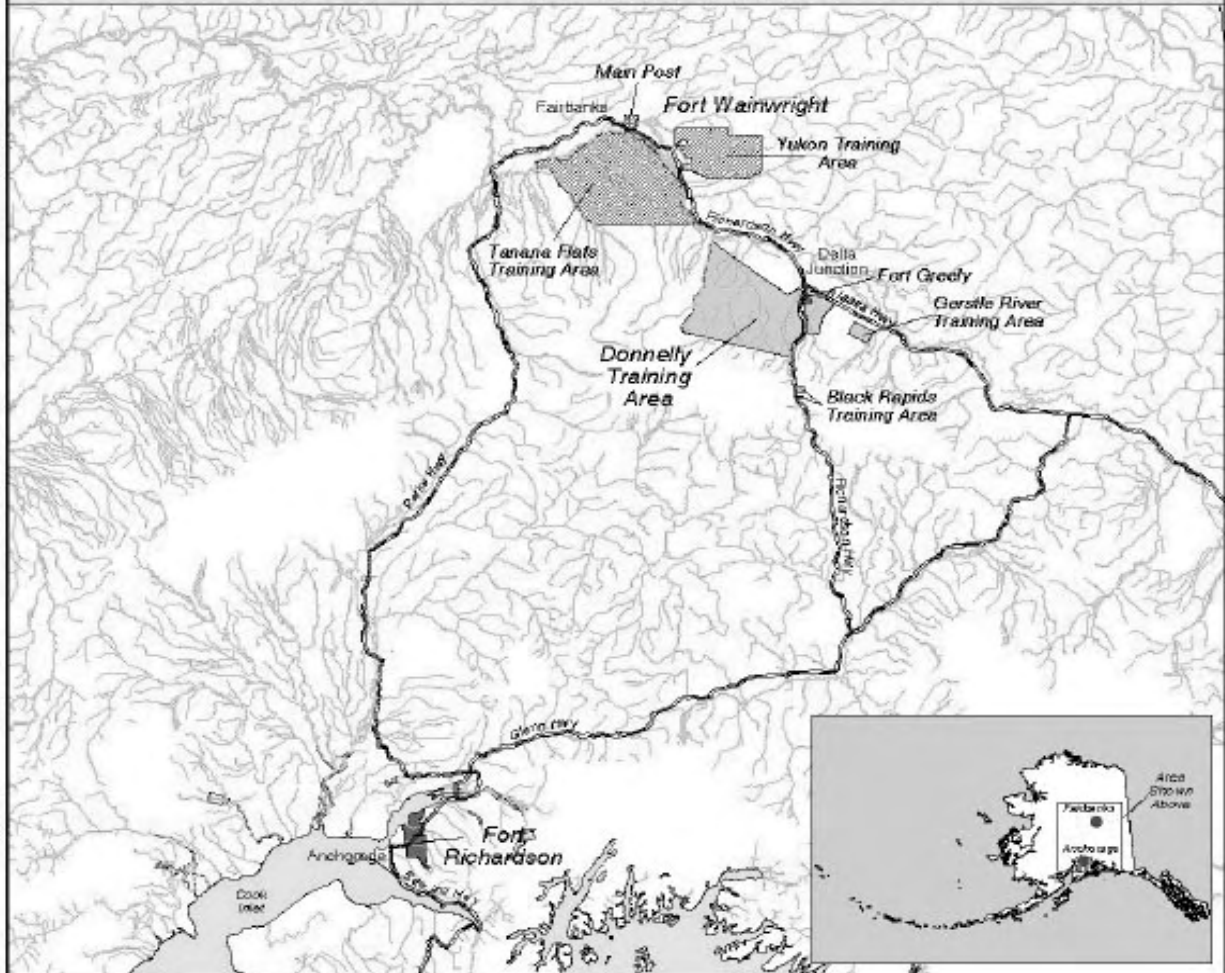
代替案3：第172歩兵旅団の再編と新しいインフラの設置。

代替案4：第712歩兵旅団の再編と新しいインフラ、および空挺部隊の設置となっている。

事業者にとって望ましい代替案は4とされた。

施設や土地が必要となる場合の立地場所、建設物、トレーニングを受ける兵員数、収容する必要のある土地の面積、有事の際に軍の展開の迅速化にどれほど貢献するか、周辺の観光産業への影響、交通機関への影響、生態系への影響、火気の取り扱い、大気質、土壌への影響、河川水、地下水、湿地、植生、漁業への影響、騒音、地元の社会経済への影響などが、それぞれの代替案につき詳細に分析されている。

## General Locations Fort Wainwright, Donnelly Training Area, and Fort Richardson



### Legend



Source:  
U.S. Army Alaska 2002e,f,g

Scale: 1:3500000

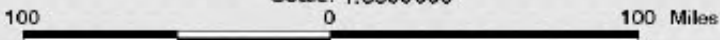


Figure ES.1 General Locations of Fort Wainwright, Donnelly Training Area, and Fort Richardson.

图 3 - 1 0 立地区域地图

### 3-8 ワシントン州 BP Cherry Point Cogeneration Project

天然ガスと廃熱による720MWのコージェネレーション発電プラントの建設事業である。BP cherry Point の Ferndale と Blaine の間に建設される予定である。

対象地区の自治体は、2025年までの電力需要の見通しを作成し、2001年から2025年まで、おおよそ1.8~1.9%の割合で需要は増えていくと予想した。特に、2011年までは、夏場のピーク時の需要が2.5%ずつ増えていくとも予想した。

電力需要の増加割合を Low ,Medium Low ,Medium ,Medium High ,High と5つのシナリオで予測したものを表3-12に示す。

表3-12 シナリオごとの需要予測

**Table 1-1: Projected Pacific Northwest Electricity Demand, 2000-2025**

Forecast Scenario	Electricity Demand (Average Megawatts)			Growth Rates (Percent Change)	
	2000	2015	2025	2000-2015	2000-2025
Low	20,080	17,489	17,822	-0.92	-0.48
Medium Low	20,080	19,942	21,934	-0.05	0.35
Medium	20,080	22,105	25,423	0.64	0.95
Medium High	20,080	24,200	29,138	1.25	1.50
High	20,080	27,687	35,897	2.16	2.35

Source: NWPC 2003

送電効率、行政側の管理の容易さ、北西部の西海岸地域の電気需要、そして環境への影響等が評価項目として挙げられた。これらの項目を考慮し、立地場所、冷却施設に用いる技術などで複数の代替案が検討された。

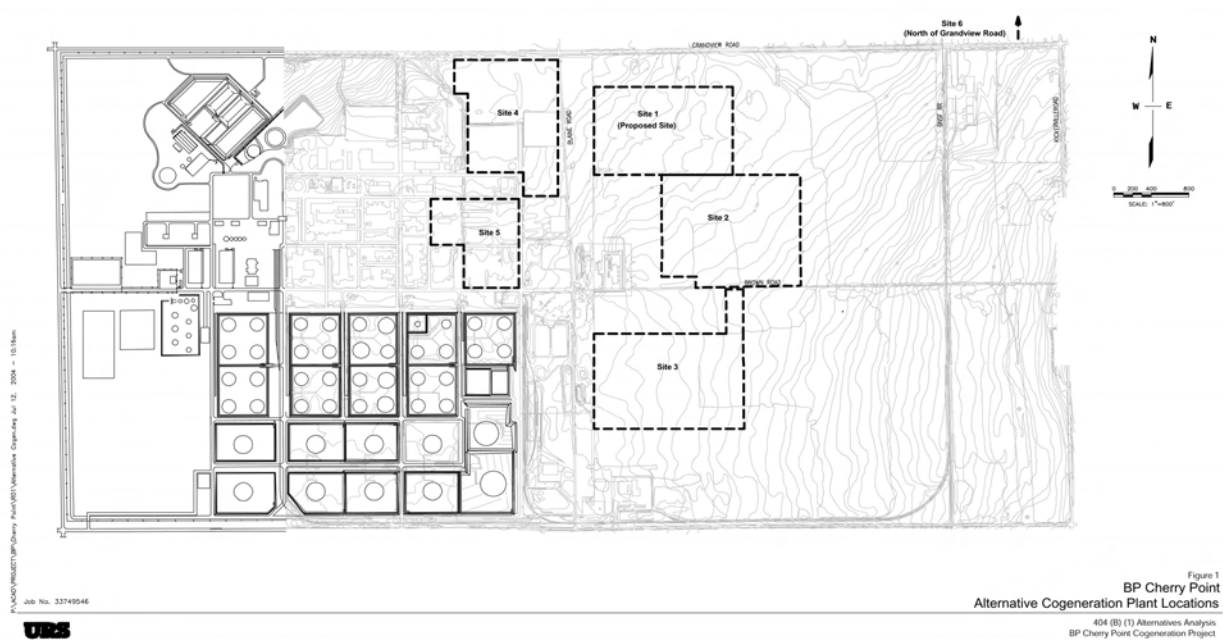


図3-11 発電所の設計図

### 3-9 オレゴン州 Lake view Proposed Resource Management Plan

オレゴン州南東部の約320万エーカーのLakeview地域での資源管理事業。観光目的の乱開発や鉱業開発、狩猟を抑制し、絶滅危惧種や景観、貴重な植生への影響を軽減。そして再生・維持可能なレベルでの資源利用を目的とした総合的な資源管理プロジェクトである。

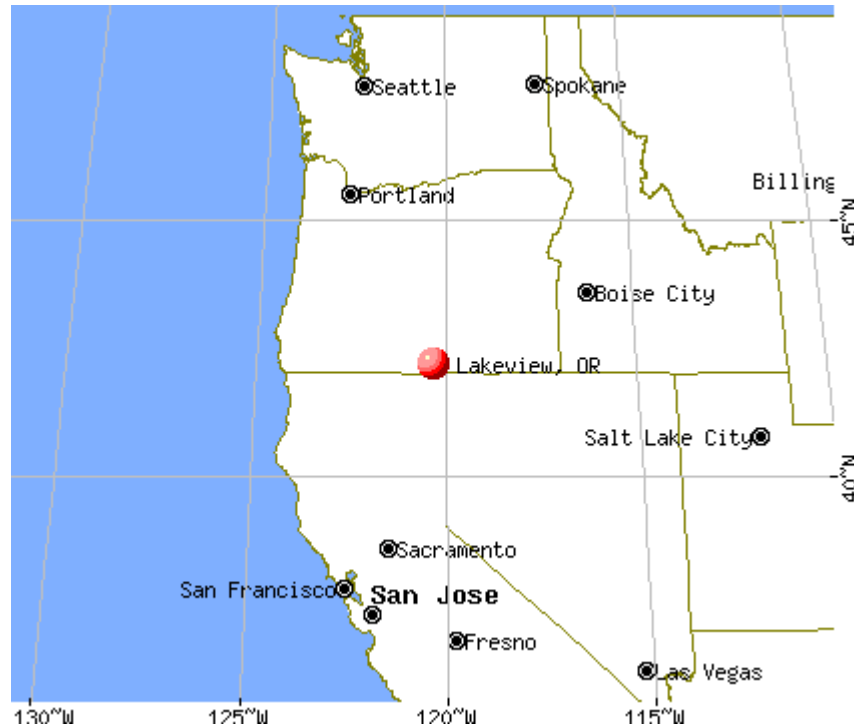


図3-12 Lakeview

具体的な内容については記述が得られなかったが、検討された代替案は表3-13に示すA~Eの五つ。

表3-13 検討された代替案

- Alternative A — No action or no change in current management;
- Alternative B — Commodity production emphasis;
- Alternative C — Resource restoration and protection;
- Alternative D — Balance between commodity production and resource protection; and
- Alternative E — Exclude commodity production and emphasize natural processes.

### 3-10 カリフォルニア州 Minuteman III Modification

米国のミサイル防衛システム構築のための総合的な開発事業である。ミサイルの発射台建設、レーダーサイトの建設、ミサイル運搬のための車両の通行路の敷設といった種々事業を含む。

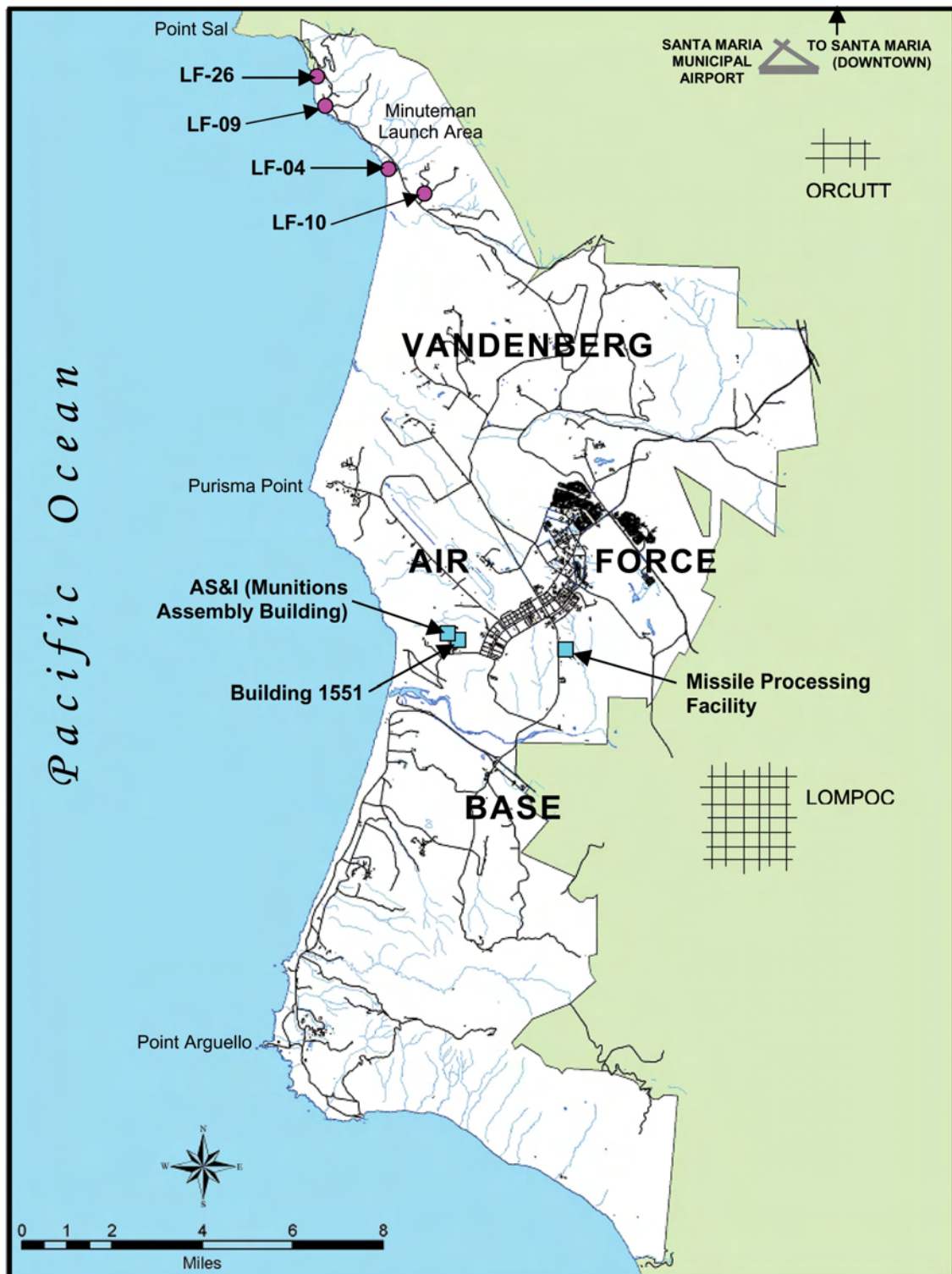
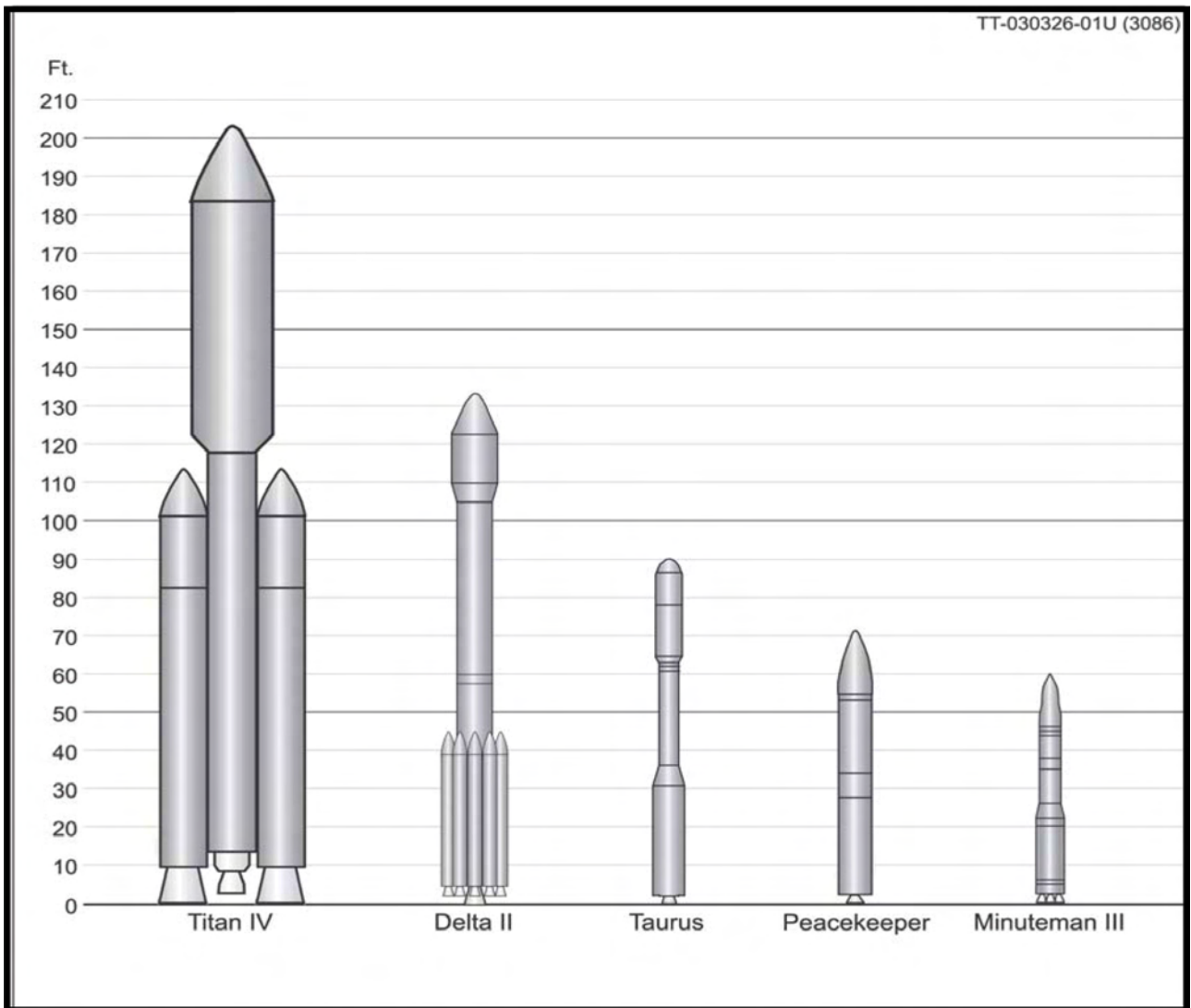


Figure 2-9. Minuteman III Flight Test Support Facilities at Vandenberg AFB, California

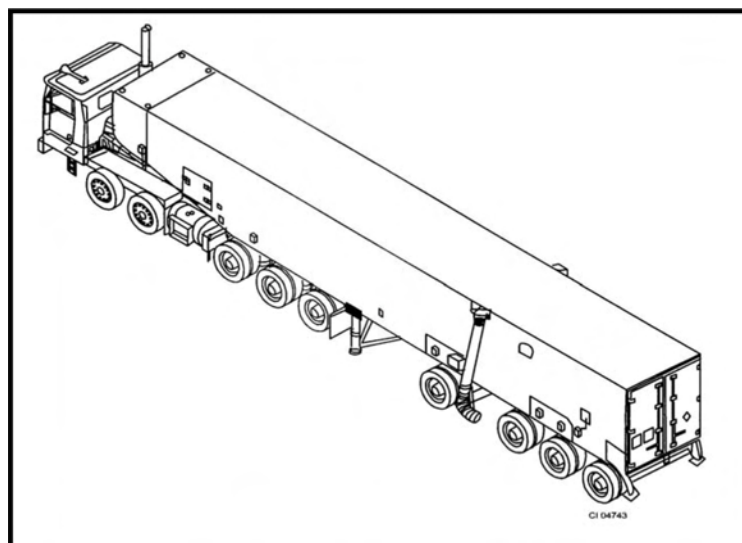
図3-13 プロジェクト対象地区





**Figure 2-8. Comparison of Launch Vehicles**

図3-14 当プロジェクトで使用されるミサイル (右端)



**Figure 2-6. Transporter Erector**

図3-15 ミサイル運搬用トレーラー

住民から指摘された影響は、1. ミサイルのエンジンからの噴出物が大気質にもたらす影響、2. ミサイル発射時の騒音（ミサイル発射自体はそう度々あるものではないので、影響は少ないとされた）、3. 周辺地域をヘリが飛行することによる野鳥への影響、4. ミサイル運搬時の事故による被害、5. 有害物質の漏れ出しなどであった。

代替案は、No Action と事業を実施した場合の比較検討が報告書の中で詳細に記述されていた。

表 3 - 1 4 No Action と事業を実施した場合の比較（1）

<b>Table 2-5. Comparison of Potential Environmental Consequences</b>		
<b>Locations and Resources Affected</b>	<b>No Action Alternative</b>	<b>Proposed Action</b>
<b>FE Warren Air Force Base, WY; Malmstrom Air Force Base, MT; and Minot Air Force Base, ND</b>		
Health and Safety	By adhering to established and proven safety standards and procedures, the level of risk to military personnel, contractors, and the general public should be minimal. Regarding rocket motor transportation over public roads, accident rates for ongoing operations have historically been very low (e.g., 0.000002 accidents per mile for USAF vehicles driven within the FE Warren AFB Wing area). Thus, no significant impacts to public or occupational health and safety are expected to occur.	Missile handling and transportation operations would be conducted in the same manner as for the No Action Alternative, and RS modifications would be conducted during normal ongoing maintenance operations. Thus, Proposed Action activities would not substantially alter the findings identified for the No Action Alternative; namely, that no significant impacts to public or occupational health and safety are anticipated.
Hazardous Materials and Waste Management	All hazardous materials would be managed in accordance with well-established policies and procedures. Hazardous wastes would be properly disposed of, in accordance with all Federal, state, local, DOD, and USAF regulations. Each installation has a plan in place that provides guidelines and instructions to prevent and control accidental spills of hazardous materials. Appropriate permits are also in place and workers are trained. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to change. Consequently, no adverse impacts from the management of hazardous materials and waste are expected.	The same policies, procedures, and regulations followed under the No Action Alternative would apply. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to be changed. Thus, no adverse impacts from the management of hazardous materials and waste are expected.
<b>Hill Air Force Base, UT</b>		
Health and Safety	MM III booster operations are routine activities at Hill AFB. By adhering to established and proven safety standards and procedures, the level of risk to military personnel, contractors, and the general public would be minimal. Consequently, no significant impacts to public or occupational health and safety are expected.	The Proposed Action activities would not substantially alter the findings identified for the No Action Alternative; namely, that no significant impacts to public or occupational health and safety are anticipated.
Hazardous Materials and Waste Management	All hazardous materials would be managed in accordance with well-established policies and procedures. Hazardous wastes would be properly disposed of, in accordance with all Federal, state, local, DOD, and USAF regulations. The base has a plan in place that provides guidelines and instructions to prevent and control accidental spills of hazardous materials. Appropriate permits are also in place and workers are trained. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to change. Consequently, no adverse impacts from the management of hazardous materials and waste are expected.	The same policies, procedures, and regulations followed under the No Action Alternative would apply. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to be changed. Thus, no adverse impacts from the management of hazardous materials and waste are expected.
<b>Vandenberg Air Force Base, CA</b>		
Air Quality	Although rocket motor exhaust emissions would be released in the lower atmosphere, they would be rapidly diluted and dispersed by prevailing winds.	Proposed Action activities would not substantially alter the findings identified for the No Action Alternative. A review

表 3 - 1 5 No Action と事業を実施した場合の比較 (2)

Table 2-5. Comparison of Potential Environmental Consequences		
Locations and Resources Affected	No Action Alternative	Proposed Action
	No violation of air quality standards or health-based standards for non-criteria pollutants is anticipated. When compared to the amount of emissions released on a global basis, the flight tests will not be statistically significant in contributing to cumulative impacts on the stratospheric ozone layer. Overall, no significant impacts to air quality would occur.	of the General Conformity Rule resulted in a finding of presumed conformity with the State Implementation Plan. Additionally, no changes to existing or new air emission permits are required. As a result, no long-term adverse impacts are anticipated.
Noise	MM III launches would generate noise levels ranging from 125 dB (unweighted) in the immediate vicinity of the launch site, to around 105 dB (unweighted) or lower in some populated areas off base. While these noise exposure levels can be characterized as very loud, they would occur infrequently, are very short in duration (about 20 seconds per launch), and would have little effect on the Community Noise Equivalent Level off base. Sonic booms generated by the missile flights would occur down range, some 25 nautical miles downrange of the launch site, and thus would not affect coastal land areas. As a result, no significant impacts to the noise environment would occur.	An increase in flight test operations for a 2-year period would not substantially alter the findings identified for the No Action Alternative; namely, that no significant impacts to the noise environment would occur.
Biological Resources	<p>Exposure to short-term noise from MM III launches and helicopter overflights could cause startle effects in marine mammals and migratory birds. However, a NMFS incidental “take” permit is in place that authorizes incidental harassment of pinnipeds. Helicopter overflights are required to maintain minimal distances away from protected seal haul-outs/rookeries and bird roosting/nesting areas. Studies have shown that it is unlikely for the launch noise exposures documented to date to present a serious risk to seal hearing. On the basis of prior monitoring studies, the NMFS has determined that rocket launch activities have a negligible impact on marine mammal populations and stocks at Vandenberg AFB.</p> <p>Launch emissions have the potential to acidify nearby surface waters. However, surface water monitoring conducted for larger launch systems at Vandenberg AFB has not shown long-term acidification of surface waters. Because the MM III represents a smaller launch system producing fewer emissions, the potential for adverse effects is minimal. In addition, the constant deposition of acid-neutralizing sea salt would reduce the acidification of surface waters.</p> <p>The probability for an aborted MM III launch to occur is extremely low. If an early abort were to occur, base actions would immediately be taken to remove unburned propellant and any other hazardous materials that had fallen on the beach or in shallow waters. Any propellants remaining in</p>	An increase in flight test operations for a 2-year period would not substantially alter the findings identified for the No Action Alternative; namely, that no long-term adverse impacts are anticipated.

表 3 - 1 6 No Action と事業を実施した場合の比較 (3)

<b>Table 2-5. Comparison of Potential Environmental Consequences</b>		
<b>Locations and Resources Affected</b>	<b>No Action Alternative</b>	<b>Proposed Action</b>
	<p>the off-shore waters would be subject to constant wave action and currents; thus, water circulation would help to prevent localized build-up of perchlorate concentrations, which has proven to be a slow process. As a result, no significant impacts on biological resources would be expected.</p> <p>Some temporary distress to vegetation near the launch site from launch emissions can be expected, but no long-term adverse effects would occur.</p>	
Health and Safety	<p>Safety procedures and practices at the base are well developed and constantly in use. Notices to mariners and airmen are published in advance to warn of launch hazard areas to be avoided. In addition, detailed flight safety analyses are conducted prior to each mission. As a result, no significant impacts to public or occupational health and safety are anticipated.</p>	<p>An increase in flight test operations for a 2-year period would not substantially alter the findings identified for the No Action Alternative. Thus, no significant impacts to public or occupational health and safety are anticipated.</p>
Hazardous Materials and Waste Management	<p>All hazardous materials would be managed in accordance with well-established policies and procedures. Hazardous wastes would be properly disposed of, in accordance with all Federal, state, local, DOD, and USAF regulations. The base has a plan in place that provides guidelines and instructions to prevent and control accidental spills of hazardous materials. Appropriate permits are also in place and workers are trained. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to change. Consequently, no adverse impacts from the management of hazardous materials and waste are expected.</p>	<p>The same policies, procedures, and regulations followed under the No Action Alternative would apply. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to be changed. Thus, no adverse impacts from the management of hazardous materials and waste are expected.</p>
<b>Over-Ocean Launch Corridor</b>		
Biological Resources	<p>Sonic boom overpressures from launch vehicles could be audible to protected marine species underwater. While 218 dB (referenced to 1 micropascal) is considered the lower limit for inducing temporary threshold shift (TTS) in marine mammals and sea turtles, the resulting underwater pressures generated by MM III sonic booms are expected to be less than 140 dB (referenced to 1 micropascal). Because the resulting pressures would be relatively low, and very short in duration, no long-term adverse effects are anticipated.</p> <p>For marine animals, the potential exists for direct contact or exposure to underwater shock/sound waves from the splashdown of spent rocket motors. However, the likelihood for a protected marine mammal or sea turtle to be located within several meters of the impact point is extremely low. The MM III flight tests would occur only a few times per year, and motor impacts from each flight would likely not occur at the exact same locations. As a</p>	<p>An increase in flight tests for a 2-year period would not substantially alter the findings identified for the No Action Alternative; namely that no long-term adverse impacts are anticipated.</p>

表 3 - 1 7 No Action と事業を実施した場合の比較 (4)

Table 2-5. Comparison of Potential Environmental Consequences		
Locations and Resources Affected	No Action Alternative	Proposed Action
	<p>result, the impacts of spent rocket motors are not expected to cause any long-term adverse effects on marine mammals or sea turtles in the open ocean.</p> <p>Residual amounts of battery electrolytes, hydraulic fluid, propellant, and other materials could lead to the contamination of seawater. However, the risk of marine life coming in contact with, or ingesting, toxic levels of solutions is not considered significant because of the rapid dilution of any contaminants, and the rapid sinking of any contaminated components.</p>	
<b>US Army Kwajalein Atoll</b>		
Biological Resources	<p>The brief sonic boom overpressures associated with RV flights [estimated at 91 to 150 dB (referenced to 20 micropascals)] are likely to cause startle effects in migratory birds on some islands of the Kwajalein Atoll, but the birds are not expected to abandon nests. At Illeginni Island, the migratory bird population appears to be stabilized, if not increasing, even after years of RV tests in the area. The sonic booms could also affect marine mammals and sea turtles underwater. However, at 117 to 176 dB (referenced to 1 micropascal), the resulting underwater pressures would be well below the lower limit of 218 dB (referenced to 1 micropascal) for inducing TTS in such animals. Because the resulting pressures would be relatively low, and very short in duration, no long-term adverse effects are anticipated.</p> <p>Like the spent MM III rocket motors, an RV impacting in the ocean or Kwajalein Atoll lagoon would result in underwater shock/sound waves, but with much higher pressure-levels being generated. The pressure levels could prove fatal to protected marine mammals and sea turtles within several feet of the impact point, and induce TTS in animals within 128 ft (39 m) from the splashdown site. However, the number of groups (small pods or schools) of these animals to be struck or exposed to harmful underwater shock/sound waves is estimated to be no higher than 0.000003 to 0.000009 per RV test event, depending on the number of RV simulators carried on the launch vehicle. When considering that (1) only three to four MM III launches are conducted every year, (2) RV target locations are not always the same, and (3) the probability for marine mammals and sea turtles to be impacted by underwater shock/sound waves is extremely low, the risk of animals being injured or killed is minimal.</p>	<p>An increase in RV flight tests for a 2-year period would not alter the findings identified for the No Action Alternative. Targets are normally selected to minimize damage to protected reef areas and identified wildlife habitats. As a result, no long-term significant impacts are anticipated in Kwajalein lagoon or in the vicinity of Illeginni Island. Additionally, no long-term adverse impacts are expected for ocean areas near Kwajalein Atoll.</p>

表 3 - 1 8 No Action と事業を実施した場合の比較 (5)

Table 2-5. Comparison of Potential Environmental Consequences		
Locations and Resources Affected	No Action Alternative	Proposed Action
	<p>In the event that an RV would directly impact on Illeginni Island or in the shallow coral reefs of Kwajalein Atoll, a crater would form. Post-test recovery and cleanup operations on Illeginni would also cause some short-term disturbance. Such impacts could potentially result in the loss of some protected migratory birds, mollusks, sponges, corals, and other marine life; and damage small areas of migratory bird habitat, sea turtle nesting sites, and coral reef habitat; all of which represents an irreversible or irretrievable commitment of resources. However, wildlife populations and habitat conditions would be expected to recover. Surveys have shown that bird populations and the local reef environment appear to be thriving after years of RV testing. Because the frequency of such occurrences is very low (estimated to be four to five instances over a 20-year period) and the amount of area affected would be minimal, no long-term significant impacts are anticipated.</p> <p>Following an aerial detonation or ocean/lagoon impact by a test RV, the resulting debris would disseminate any on-board hazardous materials around the impact point and some distance downwind. However, the Be and DU particles or fragments deposited by some RVs are very insoluble, and the dilution and mixing of the ocean and lagoon are so great that the concentration in water would be no different than natural background levels. For impacts on Illeginni Island, there is the potential for migratory birds to breath respirable dust particles of Be and DU, or consume particles deposited on vegetation. However, the relatively short-term exposures immediately following each test are unlikely to result in significant accumulations, particularly when considering the small amount of unrecovered material that may persist in the environment. As a result, no long-term significant impacts are anticipated.</p>	
Cultural Resources	<p>Given the extremely limited potential for any remaining traditional/ prehistoric remains on Illeginni Island, the likelihood of impacts to any resources must be considered either non-existent or extremely low. Though several buildings on the island are of the Cold War era, they currently do not meet RMI criteria for historic significance. Additionally, there is a low probability for the buildings to be impacted by RV tests. As a result, little or no impacts to cultural resources are expected.</p>	<p>An increase in RV flight tests for a 2-year period would not alter the findings identified for the No Action Alternative. Thus, no significant impacts to cultural resources are anticipated.</p>
Health and Safety	<p>Safety procedures and practices at USAKA are well developed. Notices to mariners and airmen are published and circulated to provide advance</p>	<p>An increase in RV flight tests for a 2-year period would not alter the findings identified for the No Action Alternative.</p>

表 3 - 1 9 No Action と事業を実施した場合の比較 (6)

Table 2-5. Comparison of Potential Environmental Consequences		
Locations and Resources Affected	No Action Alternative	Proposed Action
	<p>warning to personnel and natives of the Marshall Islands concerning any potential hazard area that should be avoided. In addition, detailed flight safety analyses are conducted prior to each mission. As a result, no impacts to public or occupational health and safety are anticipated.</p> <p>Each RV test at USAKA would release hazardous and toxic materials (including Be and DU) around the impact point and some distance downwind. For a land impact on Illeginni Island, such debris would occur close to the point of impact. As a result, the major potential health concern is for workers visiting the island, and the long-term management and restoration of the island. However, modeling and post-test sampling results from prior RV flight tests have shown that air sampling levels for contaminants are far below Federal guidelines, and similar to pre-test background levels. Various post-test safety and health procedures are followed. Thus, no significant impacts to either occupational or public health and safety would occur.</p>	<p>Thus, no significant impacts to public or occupational health and safety are anticipated.</p>
Hazardous Materials and Waste Management	<p>The limited amount of hazardous materials used for RV test operations would be managed in accordance with well-established policies and procedures. Any residual fragments of RVs (including DU or high explosive materials) would be recovered from land or shallow water areas and properly disposed of in accordance with all UES and DOE/LLNL regulations and requirements. As previous air and soil sampling results have shown, levels of Be and DU contaminants in the air and soil at Illeginni Island continue to remain at or near background levels, even after years of testing. Hazardous material and waste handling capacities at USAKA would not be exceeded, and management programs would not have to change. Consequently, no adverse impacts from the management of hazardous materials and waste are expected.</p>	<p>For the Proposed Action, the same policies, procedures, and regulations followed under the No Action Alternative would apply. Hazardous material and waste handling capacities would not be exceeded, and management programs would not have to be changed. Thus, no adverse impacts from the management of hazardous materials and waste are expected.</p>

### 3-11 モンタナ州 Rogue National Wild and Scenic River: Hellgate Recreation Area

オレゴン州の南西部に広がる、約8000エーカーの地域。観光河川地域 (Recreational River Area) に指定されている。本事業は、観光目的の開発競争と利用に歯止めをかけるべく策定されたもので、地元 of 自然資源の利用法について包括的な提言を行っている。

解決すべき問題点として挙げられたのは、1. モーター付ボートによる騒音、2. 逼迫する運行による危険、3. 地主と観光客の紛争、4. ボートによる潜在的な魚介類への影響、5. 土壌浸食、6. 増える観光客のための施設需要、7. ボートレースの開催企画、等であった。

代替案は、A～E までの5つが挙げられた。

代替案 A: ボートの利用とその利用者を減らし、ボート関連の紛争が起き始めた以前の1985年の水準に抑制する。

代替案 B: NoAction 現在の状況のままにする。

代替案 C: 観光業者を有資格の業者のみにし、釣り人やボート利用の観光客からも一定の料金を取るが、特に利用の抑制は行わない。加えて、釣り人やボート利用の観光客の意識向上を図る。

代替案 D: 観光資源を最大限に利用する。

代替案 E: 利用客の数に一定の限度を設け、それを越えた場合に料金徴収を行い、釣り人、ボート利用の観光客の需要抑制を行う。



図3-16 最終環境影響評価報告書 (FEIS) の表紙

需要抑制を行う対象は、以下に示す通りである。

1. 場所ごとに一日に許される船の運航量
2. 騒音を立ててはならない地域
3. 観光業者が営業してよい季節
4. ボートのサイズ
5. トランシーバーによる通信。



### 3-12 ワシントン州 Seattle Monorail Project

シアトルには、1962年にすでにモノレールが敷設されていた。老朽化したそれを撤去し、現在よりも拡張し、シアトル全体を結ぶ58マイル、5つの路線を新規に敷設するという計画が立ち上がった。

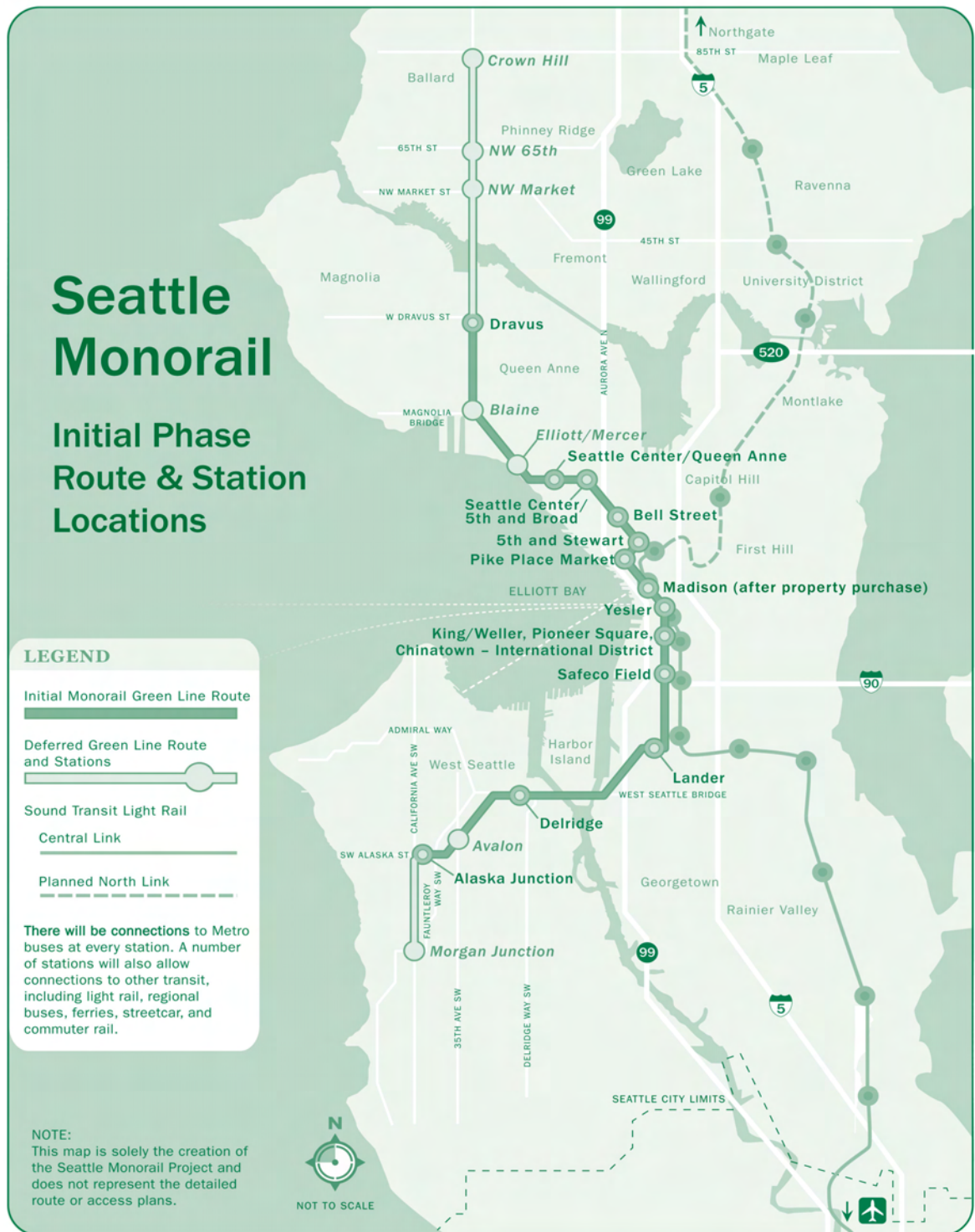
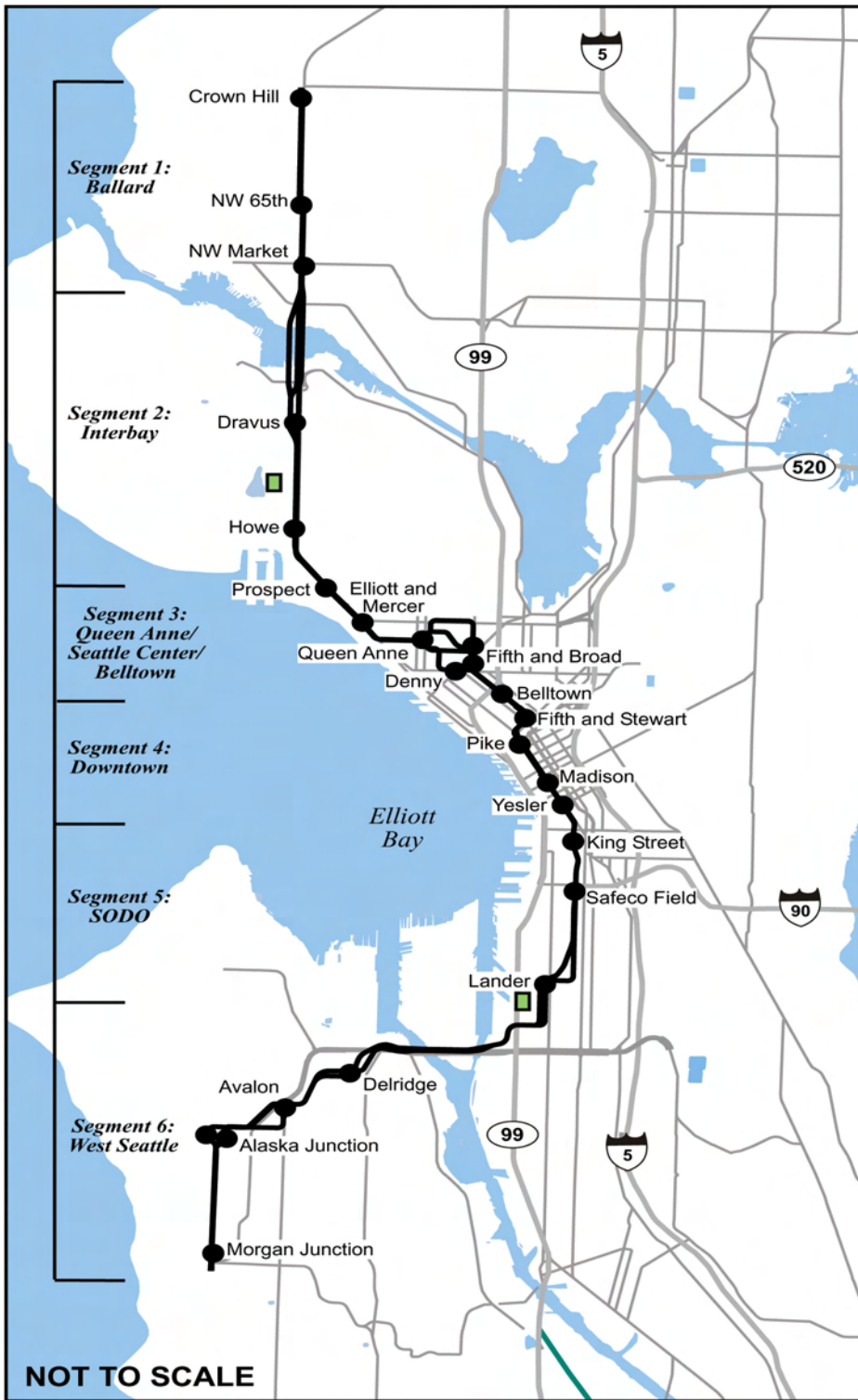


図 3-17 プロジェクト対象地域及び路線図概略

事業者である ETC(Elevated Transportation Company)は、2020年から運営を開始した場合、年間2040万人、週間6900人の利用が見込めると見積もっている。これにより、初年度の2020年には、10億2900万ドルの収入が見込めるとしている。



**Figure 3-1  
Seattle Monorail Project  
Green Line Corridor  
Project Area**

**Alternatives By Segment**

**Segment 1: Ballard**

- 1.1 - West Side of 15th
- 1.2 - Center of 15th

**Segment 2: Interbay**

- 2.1 - West side of 15th/Center of Elliott
- 2.2 - Center of 15th/West Side of Elliott

**Segment 3: Queen Anne/Seattle Center/  
Belltown**

- 3.1 - Seattle Center/Republican
- 3.2 - Mercer
- 3.3 - Thomas
- 3.5 - Second/Denny

**Segment 4: Downtown**

- 4.1 - West Side of Second
- 4.2 - East Side of Second with Crossover
- 4.3 - Center of Second

**Segment 5: SODO**

- 5.1 - East side of Third/Utah
- 5.2 - West side of Third/Utah

**Segment 6: West Seattle**

- 6.1 - West Seattle Bridge
- 6.2 - New Bridge

- Station Vicinities
- Operations Center Alternatives



図 3-18 ルートの各セグメント

図のように、全体のルートは全部で6つのセグメントに分けられている。それぞれのセグメントについて、ルートの代替案が検討された。

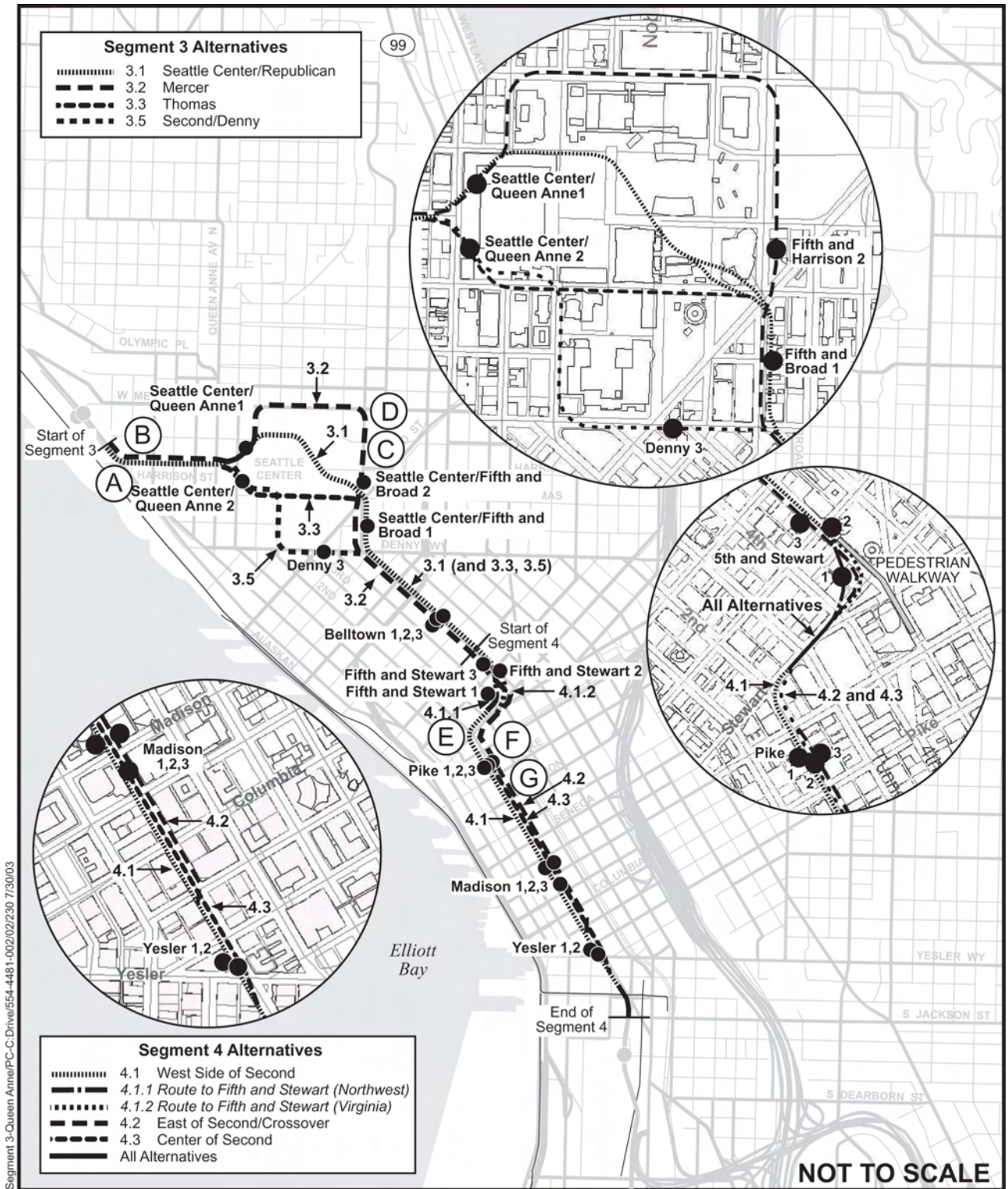
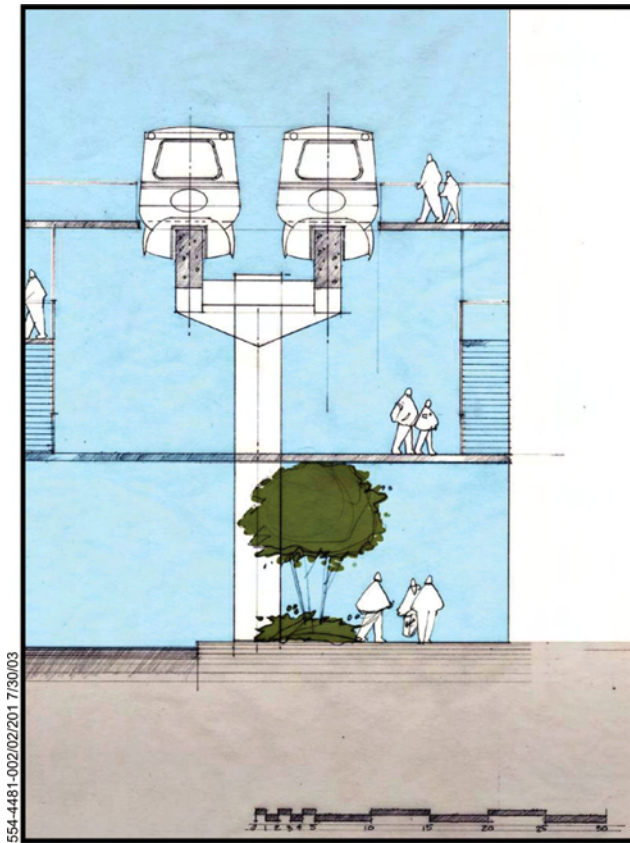


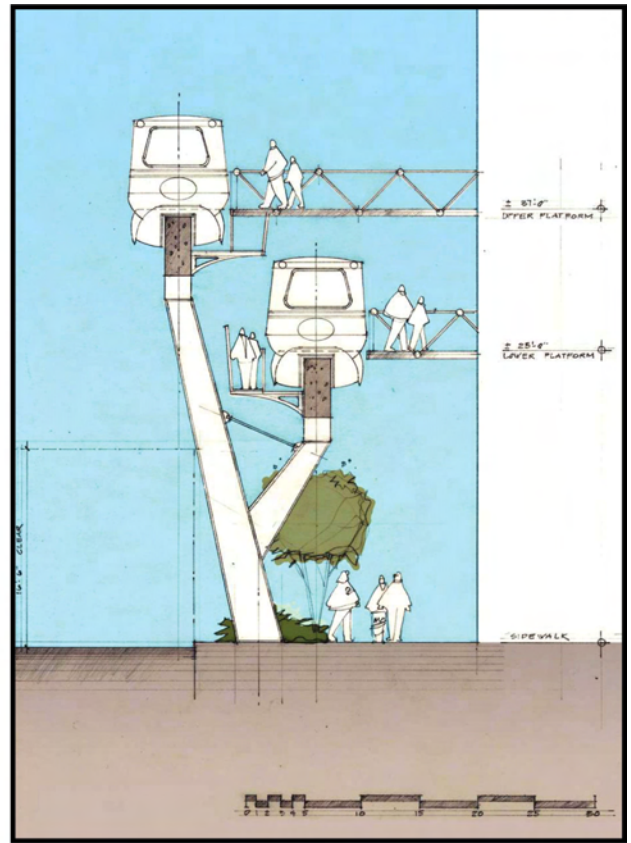
図 3-19 セグメント4でのルート代替案の様子

また、ルートの代替案だけでなく、乗り降りのためのレール（Guideway）の敷設方法、および駅の形状などについても代替案が公開されていた。



554-4481-002/02/2017/530/03

**Horizontally Arranged Guideways**



**Vertically Arranged Guideways**

図 3 - 2 0 乗り降りの代替案

さらに、プロジェクトが実施された場合に、レールやモノレール本体が街中でどのように見えるのか、についても予測と公開が行われた。

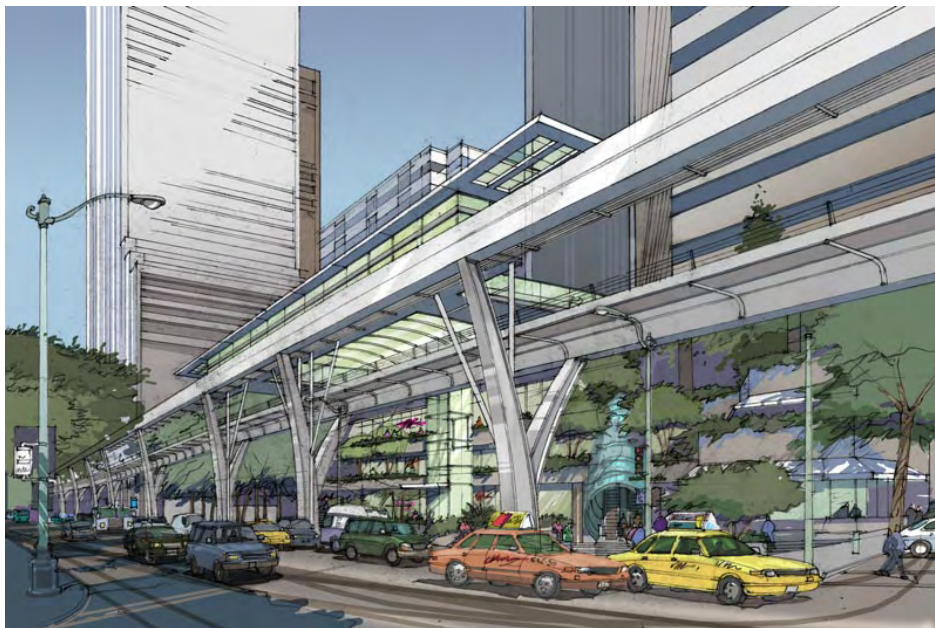


図 3 - 2 1 景観の予想図 1



図 3 - 2 2 : 景観の予想図 2

### 3-13 ワシントン州 West Coast ground fish

Pacific Fishery Management Council および National Marine Fisheries Service によって提唱された、混獲によって失われる水資源（水棲の動物を含む）を保護するための事業である。このために、混獲自体を減らすこと、また避けがたい混獲が起きても、捕獲された魚介類（特に底生魚）を放流することを確実に行わせることを目的としている。

1990年代より、漁船に監視員を同船させるといった対策が取られてはきたが、より実効性を持たせるために、様々な観点から6つの対策案が今回考案された。その内容は以下の通りである。

代替案1：現在の対策から何も変えない。

代替案2：漁獲量に制限をかける。

代替案3：漁を行う時間を制限して、間接的に漁獲量を減らす。

代替案4：それぞれの漁業主体に対して、混獲の割合に応じた漁獲量を割り当てる。

代替案5：4に加えて、漁獲量を権利として売買できるシステムを取り入れる。

代替案6：混獲が起きた場合にその廃棄を許さないことにより、混獲をゼロ近くまで減らす。

代替案7：事業者が薦める案だが、代替案の1，4，5を適宜取り入れたもので、もっとも混獲を減らすことのできた漁業主体を表彰する等のインセンティブを付与する。

それぞれの代替案は、経済性、環境への影響、直接・間接の影響等の観点から比較検討が行われた。詳細は以下の表3-20、表3-21、および表3-22に示す通りである。