ExxonMobil

Point Thomson
Gas Cycling Project

Transportation and Logistics Report
Revision 0

February 24, 2003

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TABLES:

1.0 INTRODUCTION

The purpose of this document is to present preliminary transportation and logistics information for the Point Thomson Project. The external and internal logistics and access needs to the Point Thomson site are explained, options available to meet these needs are described, and the feasibility of these options is analyzed. The resulting product is a listing of transportation alternatives that have been selected. Through this process, the rationale for selection of various logistics alternatives is clearly explained.

The document deals only with North Slope transportation issues. This document does not include transportation activities related to vehicle and equipment movement directly associated with construction, such as hauling gravel for building roads and pads, and hauling pipeline material along the pipeline right-of-way. Many factors affect actual logistics execution, such as seasonal weather, contractor execution, and permitting. Data supplied is therefore subject to change.

2.0 SCOPE AND OBJECTIVES

Construction and operation of the Point Thomson Gas Cycling Project will require that personnel, equipment and materials be transported to and from the Pt Thomson area as well as between the various facilities within the Point Thomson Unit (PTU). This document has been prepared to describe how the proposed methods for transportation were selected.

This document describes the transportation and logistics needs of the project and the methodology used for selection between various options to accomplish the needs. The document demonstrates the process for selection based on an evaluation of proven technology, practicability and cost. Other criteria such as environmental impact, safety and Arctic applicability are considered.

Selection of proposed alternatives has been based on those practicable, cost and schedule-effective solutions that meet the following project objectives:

- Supports project schedule
- Minimize travel on tundra
- Optimize the use of existing infrastructure
- Keep development of new infrastructure to a minimum
- Utilize the transport method best suited to the load
- Build on the success of previous North Slope projects
- Use return legs of delivery transport to remove redundant equipment and waste

This document does not discuss infield gravel road alternatives, which are the subject of a separate paper, Field Road System Needs and Alternatives.

3.0 LOGISTICS AND TRANSPORTATION NEEDS

Point Thomson Project transportation needs include the ability to safely move personnel, supplies, and equipment to and from the site during construction and operations. During construction, large quantities of pipe, gravel, and heavy modules will need to be moved to the site. Drilling Operations will require movement of drill rigs, pipe materials, chemicals, and other supplies to the Central Pad as well as to the East and West Pads. Additional equipment and supplies will also need to be transported to the site during subsequent operations.

Movement of personnel to and from the Point Thomson area will be required during all phases of construction, drilling, and operations. Back hauling of waste to Prudhoe Bay disposal facilities will also continue during all phases.

Table 3-1 summarizes the basic project transportation needs and their anticipated frequency. Paragraphs 3.1 through 3.16 of Table 3-1 elaborate on logistics and transportation needs.

Table 3-1
Point Thomson Project Transportation Needs

	FREQUENCY		
PROJECT TRANSPORTATION NEEDS	**DISTINCT EVENT(S)**	**INTERMITTENT**	**ONGOING**
3.1 Transport Process Modules to the Central Well Pad. Heaviest modules will weigh up to approximately 6000 tons.	X		
3.2 Transport Truckable Modules up to 105 tons	X		
3.3 Transport Pipeline Construction Materials.	X		
3.4 Transport Construction Equipment & Materials	X		
3.5 Transport Drill Rigs & Drilling Materials		X	
3.6 Transport Fuel		X	
3.7 Transport Spill Response Equipment & Personnel. Mobilize initial equipment. Ability to transport supplemental equipment & personnel if required.		X	
3.8 Transport of Emergency Well Control Equipment	X		
3.9 Medical or Emergency Evacuation		X	
3.10 Backhauling domestic waste, waste stored in barrels, and scrap. Note that some wastes will be disposed of by on-site injection.		X	
3.11 Transport Hazardous Materials		X	
3.12 Transport Large Cargo & Spare Equipment		X	
3.13 Transport Operating Supplies and equipment to the site. Supplies include drill pipe, chemicals, maintenance equipment, drilling mud, etc.			X
3.14 Transport Chemicals			X
3.15 Transport Personnel			X
3.16 Transport Consumables: food, spare parts, etc.			X

3.1 Transport Process Modules

The most cost and schedule effective method for construction of North Slope process facilities is through the use of fewer numbers of heavier modules. Having fewer process modules reduces the expensive North Slope man-hours required for placement and interconnection. Reducing North Slope man-hours also lessens environmental impact by having fewer personnel and smaller quantities of equipment on site.

The maximum feasible module weight for Point Thomson is limited by the size of available barges and existing water depths through the Mary Sachs Entrance or Challenge Entrance/Lagoon routes. Based on known water depths and the use of 400'long x 100' wide x 20' side shell U.S registered barges, module weights of up to 6000 tons could be brought safely to the Point Thomson dock. Modules up to 5400 tons have previously been brought into both Prudhoe Bay West Dock #3 and to Endicott. For additional information refer to Dock Evaluation Report.

A process module size of approximately 6000 tons has been selected as most suitable for the Point Thomson Project. These process modules will be fabricated outside the North Slope and must be moved to Point Thomson by September 2006 to meet project schedule requirements. Due to their size and weight, these modules must be transported to the North Slope by sealift.

In the past a limited number of process modules have been moved to in-land sites by ice road. However, these were only a fraction of the size of the Point Thomson modules and they were initially moved to the North Slope by barge. No feasible or proven methods other than barge have been identified for transportation of the large Point Thomson modules.

See Table 6-1 for details of the transportation method selection process for large modules.

3.2 Transport Truckable Modules

A number of smaller utility and piping modules could be fabricated at various locations in Alaska, the Lower-48 and potentially Canada. Typically, utility and piping modules are designed as smaller units to facilitate their delivery early in the project cycle to provide utilities for construction camp personnel. In order to meet project schedule requirements, most of the smaller modules must arrive at the project site in early to mid 2005. These modules (and skids) are normally configured for transport by tractor-trailer over public highways and owner constructed ice roads, hence the term "truckable modules". These modules rarely exceed 105 tons due to the limitations of highway bridges. Due to project schedule requirements for early infrastructure, these modules will be delivered by ice road. See Table 5-1 for additional limitations and Table 6-1 for details of the transportation selection method.

3.3 Transport Pipeline Construction Materials

It will be necessary to transport a considerable volume of pipeline materials including insulated line pipe, vertical support members and insulation splice kits to the Point Thomson site. These materials are distributed along the dedicated right of way from East Pad to Central Pad, from Central Pad to West Pad and to the Badami pipeline tie-in. Historically, the most cost effective method has been to deliver the line pipe to Anchorage by barge, transport to Fairbanks by rail for double-jointing, truck transport to Prudhoe Bay and then deliver directly to the pipeline right of way over ice roads. In order to minimize double handling, pipeline materials will be retained in Fairbanks or staged at Prudhoe, for "just-in-time" delivery to the construction site. See Table 6-1 for details of the transportation method selection.

3.4 Transport Construction Equipment & Materials

It will be necessary to transport significant quantities of construction equipment and materials to the Point Thomson site. This equipment will be used to build ice roads, mine and place gravel and erect the various modules and piperacks associated with the project. Most construction equipment & materials will be mobilized to site via ice roads. Current plans include back hauling of idle equipment by coastal barge.

3.5 Transport Drill Rigs & Drilling Materials

Two drill rigs are required to meet the planned development schedule at Point Thomson. The rigs will be large Arctic-type rigs capable of working with the high pressure and extended reach drilling demands of the project. In addition to the drilling rigs, it is necessary to mobilize to the site two grind and inject units, a number of dry bulk silos for mud and cement materials storage, drill pipe, casing, wellhead equipment, and specialty equipment from various contractors.

To meet the planned drilling schedule at least one rig will be moved to the field before September 2005. The second rig may be barged in 2005 or by ice road the following winter.

3.6 Transport Fuel

The Point Thomson Project will require a considerable volume of diesel fuel for operation of construction and drilling equipment. The requirement for diesel fuel begins with the ice road and other early construction activities in January 2005, peaks during construction in 2006 and diminishes following startup late 2006, or early 2007. Approximate quantities to be transported are as follows:

Winter 2005:	32,000 barrels
Summer 2005:	66,000 barrels
Winter 2006:	28,000 barrels
Summer 2006:	38,000 barrels

All subsequent re-supplies will be by barge.

The methods available for fuel delivery are totally dependent on seasonal access to Point Thomson. During winter, the only practical access for bulk deliveries is by ice road. During summer, the only practical method is by barge. Conversely, there are periods in the spring and fall when direct access to Point Thomson is only possible by air. Due to the prohibitive costs for air supply, storage facilities will be provided to reduce, or eliminate, any need for delivery of fuel by air.

In summary, winter fuel delivery must be by ice road and summer delivery must be by barge. Sufficient storage will be provided to bridge periods of limited access. See Table 7-1.

3.7 Spill Response Equipment and Personnel

Spill response equipment will be stored at the Central Pad, East Pad, West Pad and an old exploration pad near Bullen Point.

The initial requirement for spill response equipment begins with winter 2004/2005 construction activities. This initial equipment will likely be delivered by ice road along with other early construction materials. The marine craft to be used for spill response will be delivered to site as early as the open water season summer 2005.

Table 6-1 only addresses transport of spill response equipment to Point Thomson that will be staged on site. It does not address transportation alternatives related to a response to a spill. Mobilization of additional equipment and personnel to respond to a spill will be by the most expeditious (and safe) method as dictated by the nature of the incident (size, location, season etc.).

3.8 Transport of Emergency Well Control Equipment

Well capping has been identified as Best Available Technology (BAT) to regain control of a well blowout. Therefore, it is necessary to plan for the mobilization of well capping and associated equipment to the Point Thomson Site in the remote event of a blowout. This equipment would be mobilized from the Prudhoe Bay base and from the Lower 48 states as needed. Due to the size and weight of the equipment it is necessary to transport some of the components with a Hercules C-130 aircraft to Point Thomson. Table 6-1 does not address transportation alternatives for mobilizing well capping equipment because, while air transport likely offers the most expeditious method of transport, the specific details of the incident and response strategies will affect logistical details.

A relief well drilling rig could be required to handle a blowout. Should the need for a relief well drilling rig arise and one is not available at Point Thomson, a rig would be mobilized on ice roads or by barge depending upon the season since most of the rig components would be too massive for air transport.

3.9 Medical or Emergency Evacuation

It may occasionally become necessary to evacuate personnel due to medical or other emergencies. With an emphasis on time, transportation will be either helicopter or fixed wing aircraft.

3.10 Backhaul Wastes

Wastes, which cannot be disposed of by incineration or injection, will be transported to Prudhoe Bay for handling. Normal transportation will be in appropriate containers over the ice road, or on medium-sized cargo aircraft. Any large accumulations of construction debris will be collected for transport by barge during the 2005 and 2006 open water seasons. After plant start-up any backhauling of waste will be by barge or aircraft.

3.11 Transport Hazardous Waste

Hazardous waste will be transported to Prudhoe for handling, and shipping out of Alaska to permitted disposal facilities in the L/48 in accordance with RCRA requirements. During construction, the normal mode of transportation is in appropriate containers hauled over the ice road. During subsequent years, hazardous waste will be transported by medium cargo aircraft or barge as appropriate.

3.12 Transport Large Cargo and Spare Equipment

The potential exists that sometime during the life of the project it will be necessary to replace a major piece of process related equipment such as turbine rotor, pump impeller or compressor rotor. An evaluation of spares requirements has found it is not practical to store all potential replacements at Point Thomson. Major rotating equipment spares will be shared with other North Slope Operating units and located in Prudhoe Bay or Deadhorse.

Due to size and weight, these spares must be delivered to Point Thomson by medium or large cargo aircraft such as the DC-6 or Hercules C-130. For additional information refer to the Airstrip Needs Report.

3.13 Transport Operating Supplies

In order to operate the facility it will be necessary to replenish operating supplies in an on-going basis. During operations supplies are normally moved by barge or cargo aircraft as dictated by seasonal constraints.

3.14 Transport Chemicals

Industrial chemicals are consumed at a constant rate during process operations. The project will require the delivery of an initial stock of chemicals before startup and periodically during the life of the facility.

Due to weight and bulk, the initial supply will be delivered in approved double wall tote containers by barge. The annual coastal barge will be the normal method for re-supply of these chemicals, however small quantities may be re-supplied by air if required.

Table 3-2: Annual Yearly Estimated Chemical Requirements for Long-Term Operations

Description	Annual	Shipment Units
Methanol	6,500 BBLS	Barge
Wax Inhibitor	250 BBLS	19 totes
Scale Inhibitor	250 BBLS	19 totes
De-emulsifier	500 BBLS	38 totes
Anti-foam	500 BBLS	38 totes
MEA	1 BBL	01 barrel
TEG	400 BBLS	30 totes
Corrosion Inhibitor	500 BBLS	38 totes
Dowtherm 4000 (process heat medium	500 BBLS	38 totes
Ucartherm (cooling and building heat)	250 BBLS	19 totes
Miscellaneous water treating chemicals	1000 lbs	Approved container

Methanol (6,500 BBLS) will be shipped by tanker truck on the 2005 sea ice road. In subsequent years re-supply will be by barge.

The drilling program will require the following chemicals to be delivered mainly by barge and some by ice road (2006).

Table 3-3: General Listing of Mud Products to Mobilize to Point Thomson

Description	Year 1	Year 2	Year 3	Units
Barite Weight Material	1120	2240	560	tons
Bentonite Gel viscosifier	724	1448	362	tons
Bicarbonate of Soda	23	46	12	tons
Poly Pac viscosifier	23	46	12	tons
Viscosifier	75	150	38	tons
Gel extender	44	88	22	tons
Mineral Oil (base Oil)	18000	15000	13500	bbl
Mineral Oil additives	323	646	162	bbl
Calcium Chloride	630	1260	315	tons

Note: Year 1 is the period from 11/05 to 10/06
Year 2 is the period from 11/06 to 10/07
Year 3 is the period from 11/07 to 10/08

Table 3-4: General Listing of Cementing Products to Mobilize to Point Thomson

Descriptions	Year 1	Year 2	Year 3	Units
Cement (arctic)	3068	3068	1540	tons
Cement (G)	555	555	280	tons
Bentonite Gel	810	810	405	tons
Barite	152	152	76	tons
Liquid Additives (gas blocking)	750	750	375	bbl
Dry Additives (viscosity, antifoam)	13.5	13.5	7	tons

Note: Year 1 is the period from 11/05 to 10/06
Year 2 is the period from 11/06 to 10/07
Year 3 is the period from 11/07 to 10/08

3.15 Transport Personnel

The methods available for transport of personnel to and from Point Thomson will vary during the life of the project. The first personnel for 2005 ice road construction can only be moved by rolligon or helicopter. When the ice road becomes serviceable, normal transportation will be crew bus on the ice road, with medical or emergency evacuation by helicopter. The construction plan provides for diminished activities during breakup 2005 due to soft gravel on the newly constructed pads and roads. The limited number of personnel required during breakup must be transported by helicopter.

The airstrip will be serviceable for small aircraft by July 2005. The primary mode for movement of personnel will be by small passenger aircraft.

3.16 Transport Consumables

Transportation of consumables such as food and small spare parts is subject to the same seasonal restrictions as the movement of personnel (i.e. ice road in winter and aircraft at other times.)

Consumables will be moved by trailer trucks during ice road season and by cargo aircraft at other times. Due to their perishable nature, it is not practical to move food and other consumables by barge. Generally the volume of re-supply of spare parts is small and can be done by aircraft. The annual coastal barge will also be used where practical.

4.0 TRANSPORTATION METHODS

The Point Thomson development is remote from existing North Slope infrastructure; the nearest transportation facilities (excluding the Badami airstrip and dock) are located in the Endicott and Prudhoe Bay units, about 50 air miles west of the site. During conceptual engineering various modes of transportation were considered for accessing the site and for moving equipment, supplies, and personnel to and from the site. The following sections describe the basic features, costs, and limitations of each mode that has been considered.

4.1 Rolligons

Rolligons can travel directly on the tundra year round except during break-up. Typical vehicles available on the North Slope can carry up to 25 tons. Utilization of rolligons is limited due to their very high operating cost. Use of rolligons for Point Thomson will be restricted to very early access before ice and/or gravel roads are available. Long-term operations may have an ad-hoc need for remote site access involving tundra travel (spill response, pipeline, aviation navigational aids), which could require a rolligon or snowmobile.

4.2 Ice Roads

Ice roads are commonly used on the North Slope for winter travel from early January through mid-April. It is not possible to use ice roads for movement of extremely heavy modules such as the weights planned for the large process modules for Point Thomson because ice compresses and degrades under heavy loads. Ice roads are currently planned for 2005 and 2006 to meet project plans and schedule. A need for subsequent ice roads after the winter 2006 season has not been established but could eventually become necessary to support operations or drilling.

4.3 Gravel Roads

A gravel road could in theory be constructed from Endicott to Point Thomson. However, such a road is not economic given the requirement for major bridges. Due to a need for continuous access for operations and spill response within the project areas, gravel roads will be constructed from the airstrip to the Central facility Pad/Central Pad and from the Central Pad to the East and West Pads.

4.4 Marine Access (from Prudhoe Bay Unit to Point Thomson)

Marine access from Prudhoe Bay affords the opportunity of moving equipment and materials to Point Thomson during open water seasons when ice roads are not available (air travel is prohibitively expensive for bulk or heavy loads). Barges and work boats can travel from Prudhoe Bay to Point Thomson between mid-July and late September, depending on near shore ice conditions. Barges provide the means for getting small modules, foundation materials, and construction equipment to the job site to support the construction schedule. Barges are typically chartered from a local supplier on an as-needed basis to move equipment and supplies. The use of barges will only be practical after completion of the dock in August 2005.

Drilling rigs can normally be moved by ice road, gravel road, marine barge, or a combination thereof. Due to schedule requirements to initiate drilling in the fall of 2005, the Point Thomson drilling rigs will probably be moved from Prudhoe Bay by barge in August 2005.

Use of crew boats for personnel transport to Point Thomson from Prudhoe Bay is not practical due to transit time.

The coastal barges and tugs to be utilized between Prudhoe Bay West Dock and the Point Thomson dock have a draft of 5 to 6 feet. As such these barges can travel inside the barrier islands, which afford more weather protection than offshore routes outside the islands (see Attachment 5: Marine Approaches Plan, page 3).

4.5 Marine Access (from Hay River, Canada to Point Thomson Unit)

Should some of the Point Thomson facilities be fabricated in Canada, transportation to Point Thomson could be from Hay River via the Mackenzie River. This method was utilized to construct the existing Badami Facility to the west of Point Thomson. Use of the McKenzie route is limited due to shallow draft portions of the river. See Table 5-1 for limitations.

4.6 Marine Access (Sealift to North Slope)

Seagoing barges are typically used to transport large modules and other heavy or bulky equipment to the North Slope. An 8- to 10-foot water depth is required to accommodate large barge cargo loads. Because of sea-ice, movement of barges around Point Barrow is limited to a period from mid-August to late September. A marine sealift will be used to transport the Point Thomson process modules. A dock will be constructed to permit moving the modules from the barge to the pad.

The deeper route for the sealift barges is dictated by the draft of the tugs that pull each barge. These are 9,000 HP ocean tugs with a draft 20 feet plus (compared with the barges at 9 feet). Traveling the 10-fathom (60ft) isobath, keeps the tug and barge outside of the barrier islands. Only coming into shallower water to avoid ice flows. Near Point Thomson the tug and barges will move inshore and anchor, and shallow draft 1,000 HP assist tugs will move the barges to the Point Thomson dock. (The waters inside the barriers especially in the Lagoon area near Pt. Thomson are much to shallow for the ocean tugs. See attachment 5 - Marine Approaches Plan.)

The normal mode of delivery for bulk diesel fuel to North Slope Facilities and Villages is by fuel barge from Cook Inlet, Prudhoe Bay, the Lower-48, or Canada. Given seasonal constraints, a sealift barge will be used to transport bulk fuel to Point Thomson in August 2005. Because of the considerable draft of these fuel barges, the fuel is lightered from the barge to the dock using smaller barges.

4.7 Air Access

Air access provides a year round ability to move personnel and limited quantities of cargo to Point Thomson. Air access will be possible following construction of a gravel airstrip or a helicopter-landing pad. Air operations are often limited by weather conditions or aircraft availability. In general, air access is best suited for movement of personnel and for emergency movement of supplies or equipment. Attachments 7 & 7A show the fix-wing approach and takeoff patterns. For additional information refer to Airstrip Needs Report.

4.8 Hovercraft

Hovercraft can be used year round, depending on weather conditions. Carrying capacity is limited to 25 tons, depending on the shape or size of the load. Although hovercraft have been considered for North Slope application, they have not demonstrated adequate reliability for continuous Arctic operation over long distances. Hovercrafts are comparatively noisy and require specialized maintenance and operators. Costs exceed overall helicopter rates. Given reliability, noise and cost issues, the use of hovercraft is not planned for the Point Thomson Project.

5.0 LIMITATIONS

The logistics challenges of the Point Thomson Project are significant. Point Thomson will be farther from existing infrastructure than any other large North Slope development undertaken since the initial Prudhoe Bay development. Challenges include:

- No existing road access from Prudhoe or Badami
- The distance to existing infrastructure is significantly greater than previous projects
- The open water season is limited
- Fixed wing air access will not be available until a runway is completed
- The process modules are among the largest yet transported to the North Slope

Table 5-1 shows seasonal limitations associated with operation of each mode of transportation.

Table 5-1
Logistics Limitations

Method	Open Season Typical Year	Length (ft)	Width (ft)	Height (ft)	Barge Draft	Weight Limit
Surface:						
Anchorage to Fairbanks by Road	All Times (Note 1)	80	20	14		105 Tons
Fairbanks to Prudhoe by Road	All Times (Note 1)	80	20	16		105 Tons
Sea-Ice Road	Feb 1 – Apr 15					750 Tons (Note 2)
Inland Ice Road	Feb 1 – Apr 15					750 Tons (Note 2)
Marine:						
Barge (via Mackenzie River)	Aug 1 – Oct 1	250	56		4 ft 6”	1,250 Tons
Barge (North Slope Coastal)	Aug 1 – Oct 1	200	60		5 ft	1,100 Tons
Barge (Fuel)	Aug 1 – Oct 1	400	100		9 ft	110,000 bbl
Lighter Barge (Fuel)	Aug 1 – Oct 1	260	75		9 ft	10,000 bbl
Barge (Sealift)	Aug 1 – Oct 1	400	100		9 ft	6,000 Tons
Air Access:						
Helicopter (e.g. Bell 412)	All Times except bad weather					15 passengers
Passenger Aircraft (e.g. Beech1900)	7/05 thru LOF					19 passengers
Medium Cargo Aircraft (e.g. DC-6)	10/05 thru LOF					27,000 lbs
Large Cargo Aircraft (e.g. C-130)	10/05 thru LOF					45,000 lbs

Notes: 1) Roads are closed to heavy hauls during breakup, which, can occur anytime mid- March to end of April.

2) Ice Road capacity can go to 1900 tons with special (costly) design.

LOF = Life of the Facility

6.0 FEASIBILITY ASSESSMENTS

In order to be considered feasible, an option or alternative must consider current technology, likely cost and satisfactory accomplishment of underlying purpose. The following tables are a matrix format used to evaluate each alternative against project needs, practicability, cost, seasonality and the objectives listed under Section 2 of this document. The selected alternative(s) for each need are identified in the conclusions column of the matrix.

Table 6-1
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Process Modules					
Rolligon		Modules too heavy for rolligons	Very high operational cost	Smaller modules would significantly increase cost	Eliminated (not feasible)
Ice Road	High risk at these weights, difficult to guarantee required structural capacity	Seasonal limitations	Moderate construction cost, moderate operational cost	Use smaller modules (see above)	Eliminated (not feasible)
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	Use smaller modules (see above); winter transport (requires schedule delay)	Eliminated (not practical or economical)
Barge (Coastal)	Can not meet weight requirements	Standard Practice	Moderate construction cost, low operational cost	—	Eliminated (not feasible)
Barge (Sealift)	Standard Practice	Standard Practice	Moderate construction cost, low operational cost	—	**Selected as base case**
Air Access	—	Modules too heavy for air transport	High costs even for small cargoes	—	Eliminated (not feasible)

Table 6-1 (Cont'd)
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Truckable Modules					
Rolligon	—	105 ton modules too heavy for rolligons	Very high operational cost	Stick building would add significant cost	Eliminated (not feasible)
Ice Road	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case**
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	—	Eliminated (not economical)
Barge (Coastal)	Could meet weight requirements	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, low operational cost	—	**Selected as base case**
Barge (Sealift)	Could meet weight requirements	Would not meet schedule requirements	Moderate construction cost, low operational cost	—	Eliminated (not feasible)
Air Access	—	Modules too heavy for air transport	High costs for small cargoes	Stick building would add significant cost	Eliminated (not feasible)

Table 6-1 (Cont'd)
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Pipeline Materials					
Rolligon	—	Would require hundreds of loads	Very high operational cost	—	Eliminated (not feasible)
Ice Road	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case**
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	—	Eliminated (not economical)
Barge (Coastal)	Could meet weight requirements	Would not meet schedule requirements	Moderate construction cost, low operational cost	—	**Retain. May become schedule attractive.**
Barge (Sealift)	Could meet weight requirements	Would not meet schedule requirements	Moderate construction cost, low operational cost	—	Eliminated (not feasible)
Air Access	—	Materials too heavy for air transport	Very high costs for pipe hauling	—	Eliminated (not feasible)

Table 6-1 (Cont'd)
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Construction Equipment & Materials					
Rolligon	—	Most equipment is too heavy for rolligons	Very high operational cost	—	Eliminated (not feasible)
Ice Road	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case**
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	—	Eliminated (not economical)
Barge (Coastal)	Could meet weight requirements	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, low operational cost	—	**Selected as base case**
Barge (Sealift)	Could meet weight requirements	Would not meet schedule requirements. Equipment is required to build the dock.	Moderate construction cost, low operational cost	—	Eliminated (not feasible)
Air Access	—	Equipment is too heavy for air transport & needed to build the airstrip.	High costs for small cargoes	—	Eliminated (not feasible)

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Drill Rig Transport					
Rolligon	—	Planned rigs are to heavy for these vehicles	—	—	Eliminated (Not feasible)
Ice Road	Standard Design	Seasonal limitations	Lowest construction cost, moderate operational cost	Reschedule mobilization and demobilization (would not fit project schedule requirements)	Retain as schedule option
Gravel Road	No gravel road to Prudhoe available	Bridges would be a serious physical constraint	Very high construction cost	—	Eliminated for mobilization & demobilization **but will use for transport between pads.**
Barge	Standard Design	Seasonal limitations	Moderate construction, lowest operational cost	—	**Selected as base case**
Air Access	—	Standard rig too heavy for air transport	—	—	Eliminated (Not feasible)

Table 6-1 (Cont'd)
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Fuel					
Rolligon	—	Hundreds of loads if by rolligon	Very high operational cost	—	Eliminated (not feasible)
Ice Road	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case (Seasonal Use)**
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	—	Eliminated (not economical)
Barge (Coastal)	Could meet weight requirements	Inadequate supplies available from Prudhoe topping plant for peak demands	Moderate construction cost, low operational cost	Upgrade Prudhoe topping plant not economical	Retain to support long term operations
Barge (Sealift)	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case (Seasonal Use)**
Air Access	Few aircraft available in Alaska for fuel hauling	Hundreds of loads if by air	High costs for small cargoes	—	Retained if dictated by need

Table 6-1 (Cont'd)
Feasibility Analysis of Various Transportation Modes

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Spill Response Equipment **Note 1**					
Rolligon	—	Too much volume for transport by rolligon	Very high operational cost	—	Eliminated (not feasible)
Ice Road	Normal mode of delivery. Well established technology	Seasonal limitations do not conflict with schedule requirements	Moderate construction cost, moderate operational cost	—	**Selected as base case for initial delivery of spill response equipment**
Gravel Road	No gravel road to Prudhoe available	Several existing bridges within PBU would also need upgraded	Very high construction cost, continued maintenance cost	—	Eliminated (not economical)
Barge (Coastal)	Could meet weight requirements	Would not meet schedule requirements	Moderate construction cost, low operational cost	—	Retain as shedule option
Barge (Sealift)	Could meet weight requirements	Would not meet schedule requirements	Moderate construction cost, low operational cost	—	**Selected as base case for delivery of marine craft**
Air Access	—	Too much volume & weight for transport by rolligon	High costs for small cargoes	—	Not feasible for delivery of initial equipment. **Selected as base case for supplemental equipment & personnel if required.**

Note 1: This part of Table 6-1 relates to alternatives to transportation of spill response equipment that will be staged on site at Point Thomson, not actual spill response.

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Waste Hauling					
Rolligon	—	Seasonal limitations	High operating cost	—	**Selected as base case** (use as needed before ice roads available)
Ice Road	Standard Design	Seasonal limitations; some wastes cannot be stored more than 90 days	Lowest construction cost, moderate operating cost	Store wastes for regular removal	**Selected as base case** (use seasonally) Use backhaul when possible during construction winter season.
Gravel Road	No gravel road to Prudhoe available	Practical	Very high construction cost, continued maintenance cost	—	Eliminated (gravel road construction not economical for this project)
Barge	Standard Design	Seasonal limitations; some wastes cannot be stored more than 90 days	Moderate construction cost, lowest operating cost	Store wastes for regular removal	**Selected as base case** (use seasonally) Use backhaul when possible.
Air Access	—	Weight restriction; some safety and regulatory constraints on moving wastes by air	Moderate construction cost, highest operating cost	—	**Selected as base case** Use backhaul when possible.

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Hazardous Waste					
Rolligon	—	Seasonal limitations	High operating cost	—	**Selected as base case** (use if needed before ice roads)
Ice Road	Standard Design	Seasonal limitations; some wastes cannot be stored more than 90 days	Lowest construction cost, moderate operating cost	Store wastes in appropriate containers for regular removal	**Selected as base case** Use backhaul when feasible during construction winter season.
Gravel Road	No gravel road to Prudhoe available	Practical	Very high construction cost, continued maintenance cost	—	Eliminated (gravel road construction not economical for this project)
Barge	Standard Design	Seasonal limitations; some wastes cannot be stored more than 90 days	Moderate construction cost, lowest operating cost	Store wastes in appropriate containers for regular removal	**Selected as base case** (use seasonally) Use backhaul when feasible.
Air Access	—	Some safety and regulatory constraints on moving hazardous wastes by air	Moderate construction cost, highest operating cost	—	**Selected as base case** Use backhaul when feasible.

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Large Cargo & Equipment					
Rolligon	Standard Design	Seasonal limitations, weight restrictions	Very high operating cost	Impractical to breakdown rotating equipment	Eliminated (Not practical)
Ice Road	Standard Design	Seasonal limitations	Moderate construction cost, moderate operating cost	Stockpile material on site (not practical for costly & sensitive equipment)	**Retain as alternate if requirement occurs during ice road season.**
Gravel Road	No gravel road to Prudhoe available	No constraints	Very high construction cost, moderate operating cost	—	Eliminated (Gravel road construction not economical for this project)
Barge (Coastal)	Standard Design	Seasonal limitations	Moderate construction cost, lowest operating cost	Stockpile material on site (not practical for costly & sensitive equipment)	Retain. May become schedule attractive.
Barge (Sealift)	Standard Design	Seasonal limitations	Moderate construction cost, lowest operating cost	Stockpile material on site (not practical for costly & sensitive equipment)	Retain (may be used for backhaul)
Air Access	Standard Design	Cannot transport pipe materials or some chemicals	Moderate construction cost, highest operating cost	—	**Selected as base case** (Use when necessary)

This table refers to the transport of emergency equipment and materials that is needed for the continuous operation of Point Thomson.

Table 6-1 (Cont'd)

Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Operating Supplies & Equipment					
Rolligon	Can be considered as back-up if circumstances dictate	Seasonal limitations, weight restrictions	Very high operating cost	—	Eliminated (consider as backup if circumstances dictate.)
Ice Road	Standard Design	Seasonal limitations	Moderate construction cost, moderate operating cost	Stockpile material on site	**Retain**
Gravel Road	No gravel road to Prudhoe available	No constraints	Very high construction cost, moderate operating cost	—	Eliminated (Gravel road construction not economical for this project)
Barge (Coastal)	Standard Design	Seasonal limitations	Moderate construction cost, lowest operating cost	Stockpile material on site	**Selected as base case** (Use seasonally)
Air Access	Standard Design	Impractical to transport bulky or heavy equipment without resorting to large cargo aircraft	Moderate construction cost, highest operating cost	—	**Selected as base case** (Use when necessary)

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Chemicals					
Rolligon	Not normally used for transporting bulk chemicals	Seasonal limitations	High operating cost	—	Eliminated (Non-standard use)
Ice Road	Standard Design	Seasonal limitations	Lowest construction cost, moderate operating cost	Requires appropriate containers	Retained (No ice roads are planned after operations startup.)
Gravel Road	No gravel road to Prudhoe available	Practical	Very high construction cost, continued maintenance cost	—	Eliminated (gravel road construction not economical for this project)
Barge (Coastal)	Standard Design	Seasonal limitations	Moderate construction cost, lowest operating cost	Requires appropriate containers	**Selected as base case** (use seasonally)
Air Access	—	Some safety and regulatory constraints on moving chemicals by air	Moderate construction cost, highest operating cost	Requires appropriate containers	**Selected as base case**

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Personnel					
Rolligon	Standard Practice	Seasonal limitations	No construction cost, high operating cost	—	**Selected as base case** (Use as needed prior to ice roads & otherwise if needed)
Ice Road	Standard Design	Seasonal limitations	Lowest construction cost, lower operating costs	—	**Selected as base case** (Use during winter season as practical)
Gravel Road	No gravel road to Prudhoe available	Some weather constraints	Very high construction cost, continued maintenance cost	—	Eliminated (Gravel road construction not economical for this project)
Barge (Coastal)	Barges usually not used to move personnel	Seasonal limitations; Marine vessels too slow.	Moderate construction cost, high operating cost	—	Eliminated (Not practical)
Crew boat	Standard Design	Seasonal limitations; Marine vessels too slow.	Moderate construction cost, high operating cost		**Eliminated. Not practical due to seasonal constraints and travel time**
Air Access	Standard Design	Weather dependent	Moderate construction cost, high operating costs	—	**Selected as base case** (Use as needed)

Table 6-1 (Cont'd)
Feasibility Analysis

	FEASIBILITY ANALYSIS				
PROJECT NEED/ MODE OF ACCESS	**TECHNOLOGY**	**PRACTICABILITY**	**COST**	**POSSIBILE MODIFICATION**	**CONCLUSION**
Transport Consumables					
Rolligon	Can be considered as back-up if circumstances dictate	Seasonal limitations, weight restrictions	Very high operating cost	—	Eliminated (consider as backup if circumstances dictate.)
Ice Road	Standard Practice	Seasonal limitations	Moderate construction cost, moderate operating cost	—	**Selected as base case** During construction winter season
Gravel Road	No gravel road to Prudhoe available	No constraints	Very high construction cost, continued maintenance cost	—	Eliminated (Gravel road construction not economical for this project)
Barge (Coastal)	Standard Design	Seasonal limitations	Moderate construction cost, lowest operating cost	Stockpile material on site (Limited shelf life for many items)	Retain
Air Access	Standard Design	Few constraints	Moderate construction cost, highest operating cost	—	**Selected as base case**

7.0 SUMMARY AND OTHER ISSUES

This document describes how practical and logical methods have been selected to meet the transportation needs of the Point Thomson Project. In all cases, the method(s) selected are consistent with proven techniques developed for the execution of projects in the sensitive environment of Alaska's North Slope. A summary of the selected methods is shown in Table 7-1.

Attachments 1 thru 8 present information on Ice Roads, Gravel Roads and Marine Approaches, as well as the levels of traffic anticipated for each method of transportation.

Particular efforts will be made in order to further mitigate the potential impacts of Point Thomson's logistics requirements. These include: staging and consolidation of shipments, caribou impact mitigation and coordination of barge movements during bowhead whaling seasons.

7.1 Staging and Consolidation of Shipments

An area will be established in the Deadhorse or Prudhoe area for staging and consolidation of surface shipments. Staging and consolidation will insure that individual vehicles are fully loaded appropriate to the conditions in order to help reduce the total number of vehicle trips.

7.2 Caribou Mitigation Policy

The Point Thomson project will adopt standard North Slope road traffic practices when caribou are present in the field area. These include giving caribou the right of way on roads and pads, including temporarily halting traffic, driving at slow speeds and avoiding the use of horns. Environmental training for all field personnel will include such procedures to avoid disturbance to caribou.

7.3 Coordination of Barge Movements

The Point Thomson project does not anticipate any significant impact to bowhead whales or subsistence whaling activities as a result of marine operations supporting project construction and operations.

The major module sealifts during the open water seasons in 2005 and 2006 are planned to be completed by end of August, depending on sea ice conditions and sealift barges will be demobilized by early September. See Attachment 5 for Marine Approaches Plan.

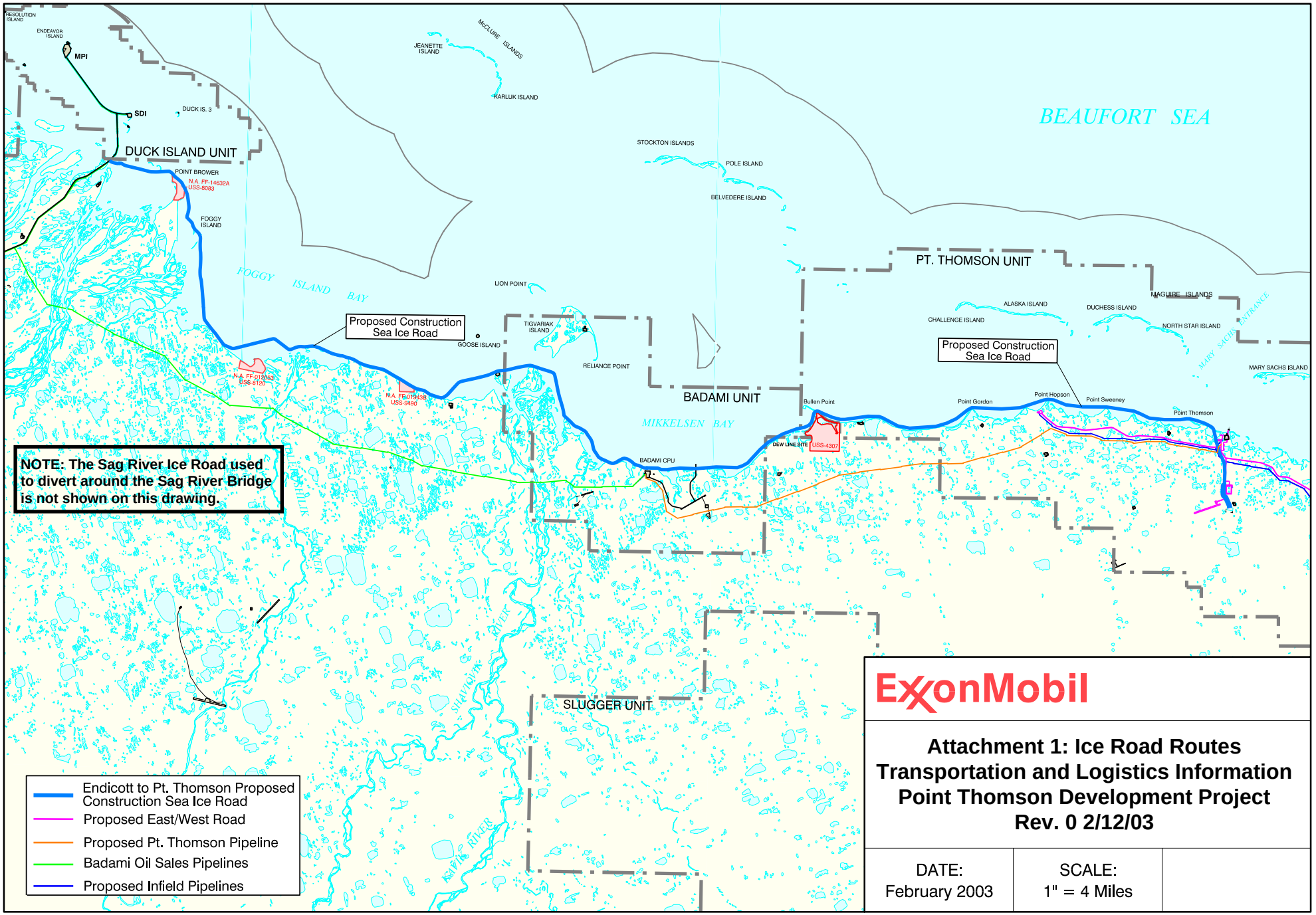
Local barge traffic between Prudhoe Bay West Dock and Point Thomson will use shallow barges and tug boats. This traffic is anticipated to travel inshore of the barrier islands east of Endicott. As such this traffic will be far inshore of the main bowhead whale migration corridor (nominally 60-foot water depth) and subsistence whaling activities conducted out of Cross Island. Because of the volume of equipment and supplies required by the Point Thomson project, particularly during the construction and drilling phases, marine traffic during September cannot be avoided. However, ExxonMobil will consult with the Alaska Eskimo Whaling Commission and Nuiqsut whalers to avoid conflicts with whaling activities.

Table 7-1
Project Logistics Summary

Project Need	Selected Method(s)	Conditions
Transport Process Modules	By seagoing barge	Open water season 2005. Requires completion of dock.
Transport Truckable Modules	By truck over ice road	Ice road season 2005 and 2006
Transport Pipeline Construction Materials.	By truck over ice road	Ice road season 2006
Transport Construction Equipment & Materials	By truck over ice road	Ice road season 2005 Ice road season 2006
Transport Drill Rigs & Drilling Materials	By seagoing barge from West Dock to Point Thomson. By gravel roads between pads.	Open water seasons 2005/06/07/08 Requires completion of dock. Secondary moves require completion of gravel roads. Ice roads available 2005 and 2006.
Transport Fuel	Initial supply by tanker truck over ice road 2005. Re-supply summer 2005 & 2006 by barge. Infrequent re-supply by barge in subsequent years.	Ice road season 2005 Re-supply requires completion of dock and USCG approved unloading facility. Coastal barge as required.
Spill Response Equipment and Personnel	By truck over ice road Marine Craft By aircraft	Ice road season 2005 & 2006 Open water 2005 Equipment & personnel if required
Back Hauling domestic Waste	By truck over ice roads. By coastal barge to PBU. By cargo aircraft.	Ice road season 2005 & 2006. Requires dock (August 05) Requires airstrip (July 05)
Transport Hazardous Materials	By truck over ice roads. By coastal barge to West Dock. By cargo aircraft.	Ice road season 2005 & 2006. Requires dock (August 05) Requires airstrip (July 05)
Transport Large Cargo & Spare Equipment	Large cargo aircraft	Requires airstrip (October 05)
Transport Operating Supplies	By ice road By cargo aircraft	 Requires airstrip (July/Oct 05)
Transport Chemicals	By barge By aircraft	Initial delivery by barge Re-supply by air cargo
Transport Personnel	Initially by rolligon By Crew Bus on Ice Roads By Helicopter Passenger aircraft (Base)	Access before ice road Ice road season 2005 & 2006 Requires airstrip (July 2005)
Transport Consumables: food, spare parts, etc.	By ice roads By Helicopter By Barge Fixed Wing aircraft	Ice road season 2005 & 2006 Requires airstrip

8.0 ATTACHMENTS:

Attachment 1: Sea Ice Road Routes
Attachment 2: Ice Roads Traffic Summary
Attachment 3: Gravel Roads and Pads Plan
Attachment 4: Gravel Roads Traffic Summary
Attachment 5: Marine Approaches Plan
Attachment 6: Marine Traffic Summary
Attachment 7: Aviation Approach and Takeoff Pattern (Prevailing Wind)
Attachment 7A: Aviation Approach and Takeoff Pattern (Counter Wind)
Attachment 8: Aviation Traffic Summary



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Attachment 1: Ice Road Routes Transportation and Logistics Information Point Thomson Development Project Rev. 0 2/12/03

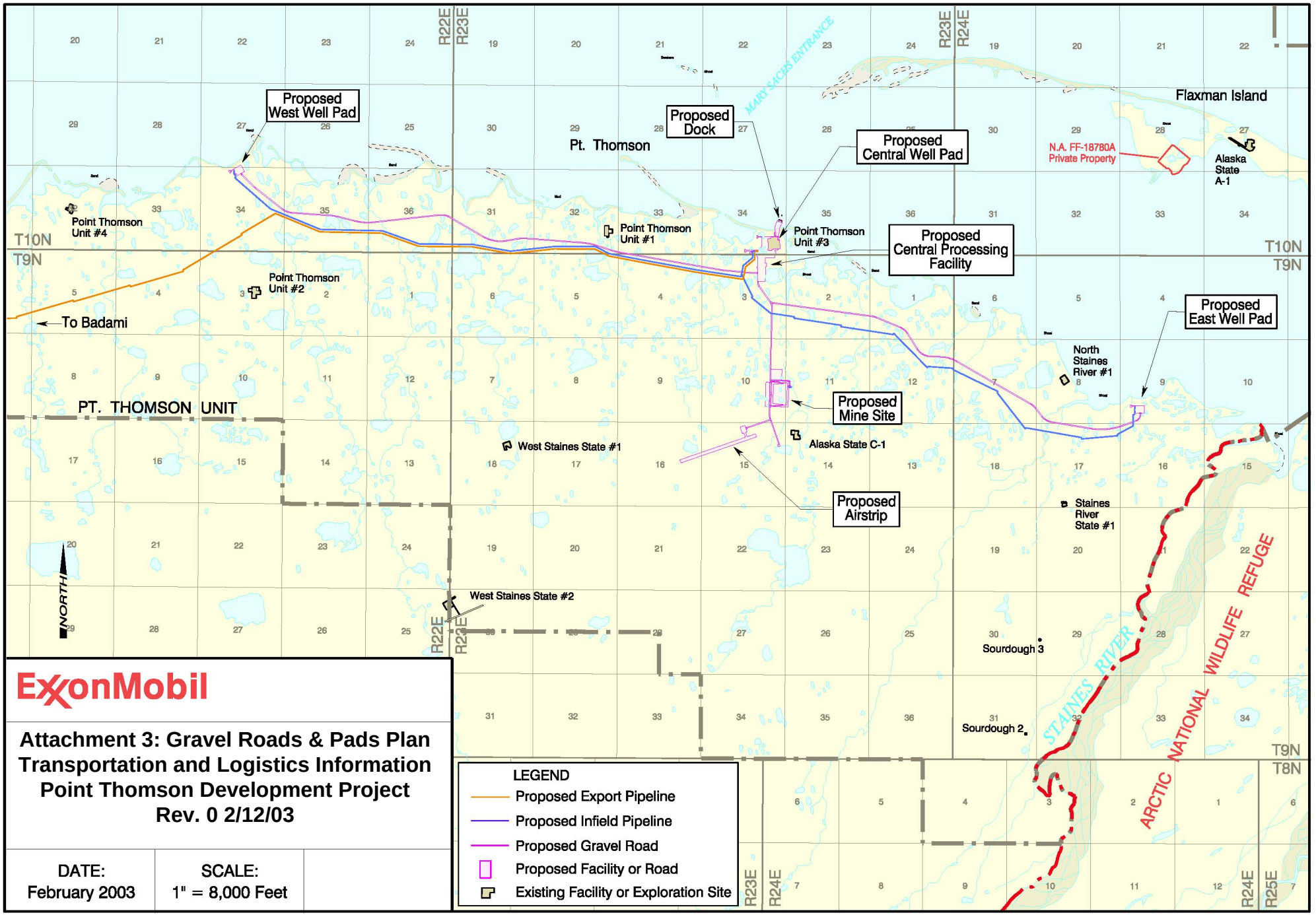
DATE:	SCALE:	
February 2003	1" = 4 Miles	

ex14745_7-1.dgn

Point Thomson Development Project
Attachment 2 - Ice Roads Traffic Summary

	Number of Round Trips															
	2005				2006				2007				2008			
Ice Roads Traffic Summary	Jan	Feb	March	April	Jan	Feb	March	April	Jan	Feb	March	April	Jan	Feb	Mar	April
General Cargo (Trailers)	65	350	430	190	25	65	65	35								
Storage Tanks			15													
Truckable Modules			75	45		50	50	15								
Fuel (Tankers)	120	110	260	85	95	120	280	90								
Chemical (Tankers)																
Pipeline Construction					120	220	320	130								
Drilling					25	160	165	40								
Equipment Mobilization	120	150	15													
Total	**305**	**610**	**795**	**320**	**265**	**615**	**880**	**310**								

NOTE: No Ice Roads are currently planned for after 2007 (although ice roads may be used for drill rig demob as an option in 2008)
Truckable Module Trips include Support Vehicles
Fuel Transported in January 2005 fills Badami Tank



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Attachment 3: Gravel Roads & Pads Plan
Transportation and Logistics Information
Point Thomson Development Project
Rev. 0 2/12/03

DATE:	SCALE:	
February 2003	1" = 8,000 Feet	

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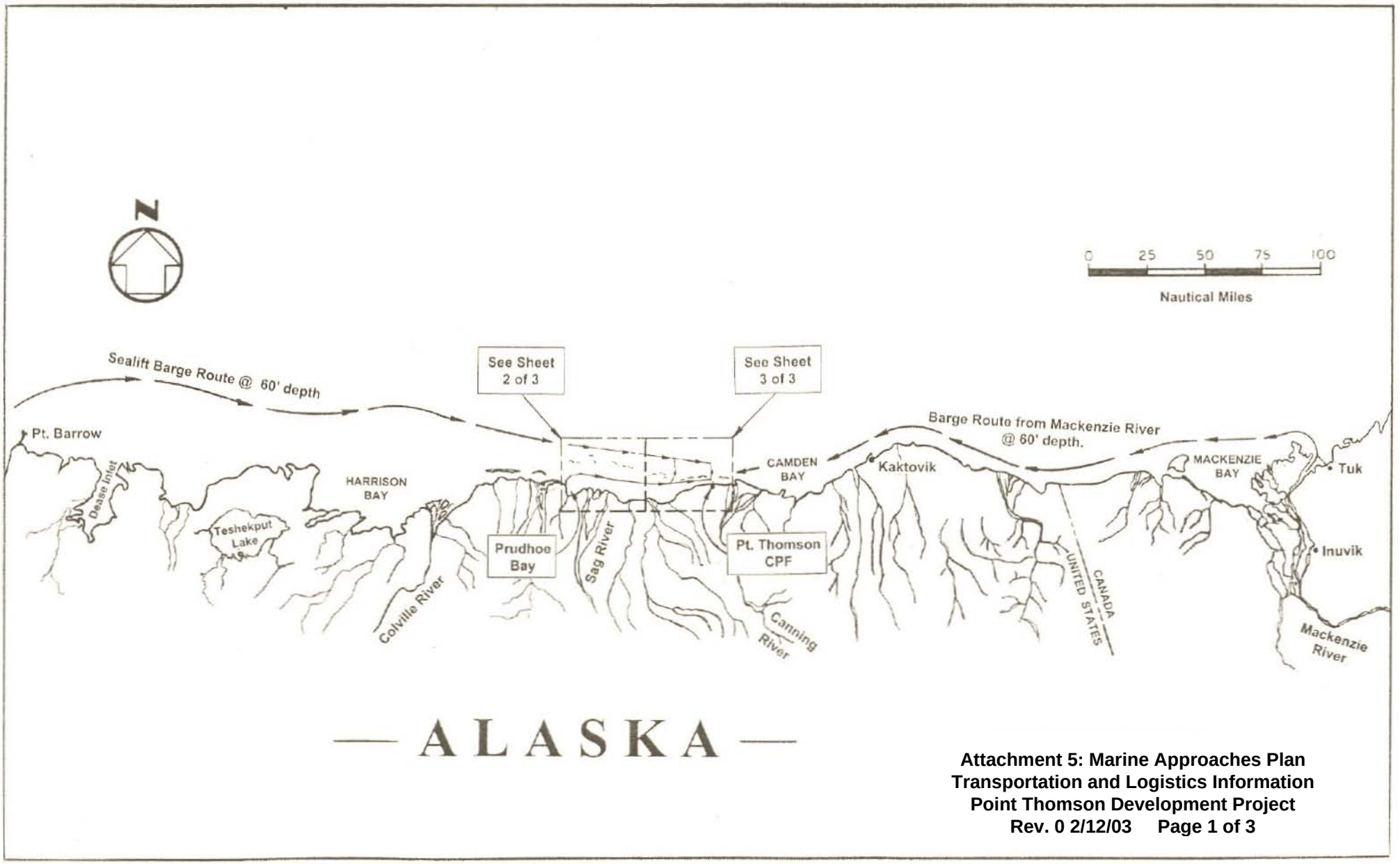
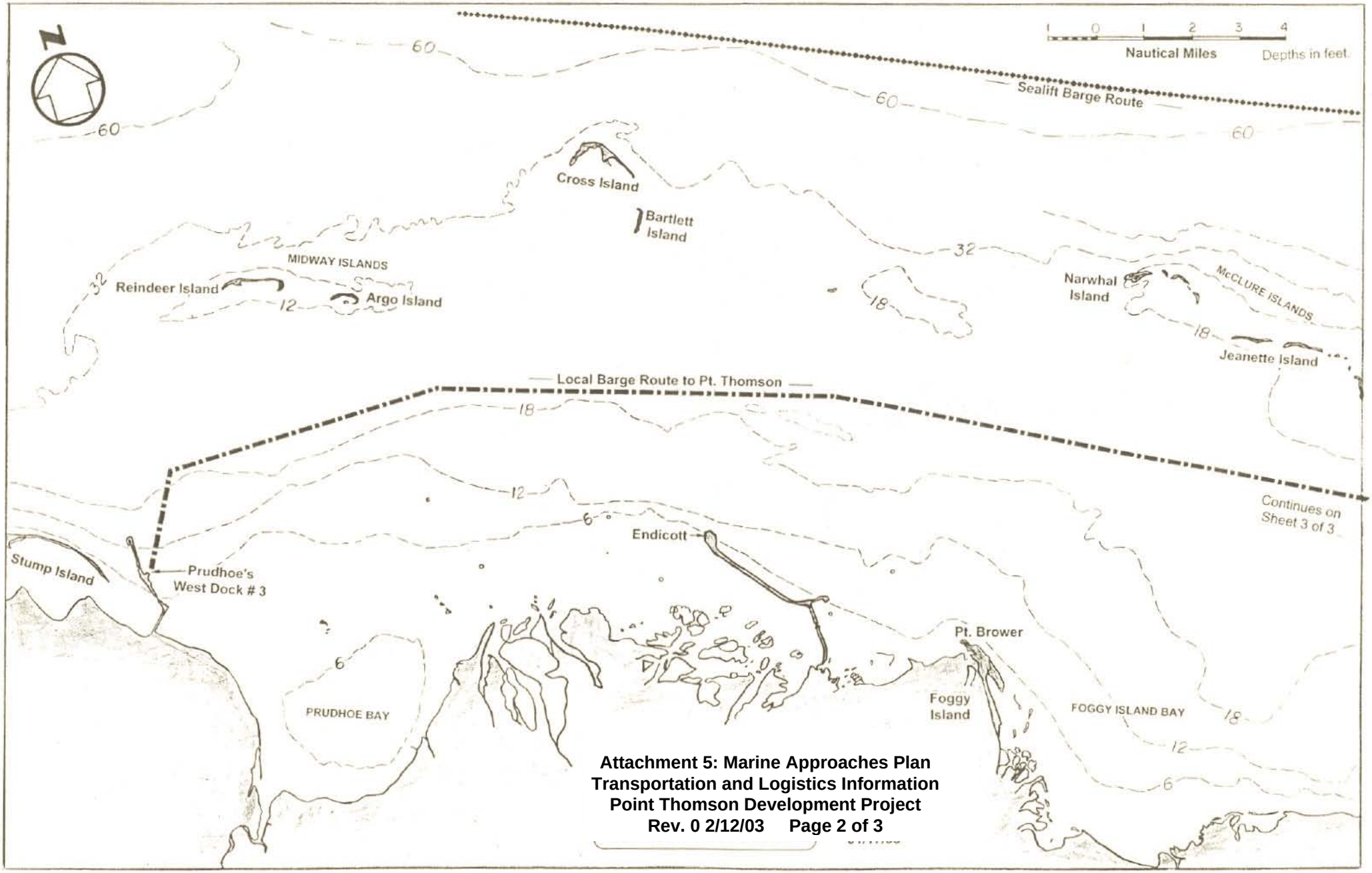
Point Thomson Development Project
Attachment 4 - Gravel Roads Traffic Summary

	Number of Round Trips															
	2005				2006				2007				2008			
Gravel Roads	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
East Road - Drill Site Facility Construction				1,500	2,300	2,300	2,300	1,500								
East Road - Drilling/Operations			570	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,200	230
West Road - Drill Site Facility Construction				1,500	2,300	2,300	2,300	1,500								
West Road - Drilling/Operations			570	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,200	230
Airstrip Road - After Construction			300	900	900	900	900	900	900	900	900	900	900	900	450	450
Total	**-**	**-**	**1,440**	**7,300**	**8,900**	**8,900**	**8,900**	**7,300**	**4,300**	**4,300**	**4,300**	**4,300**	**4,300**	**4,300**	**2,850**	**910**

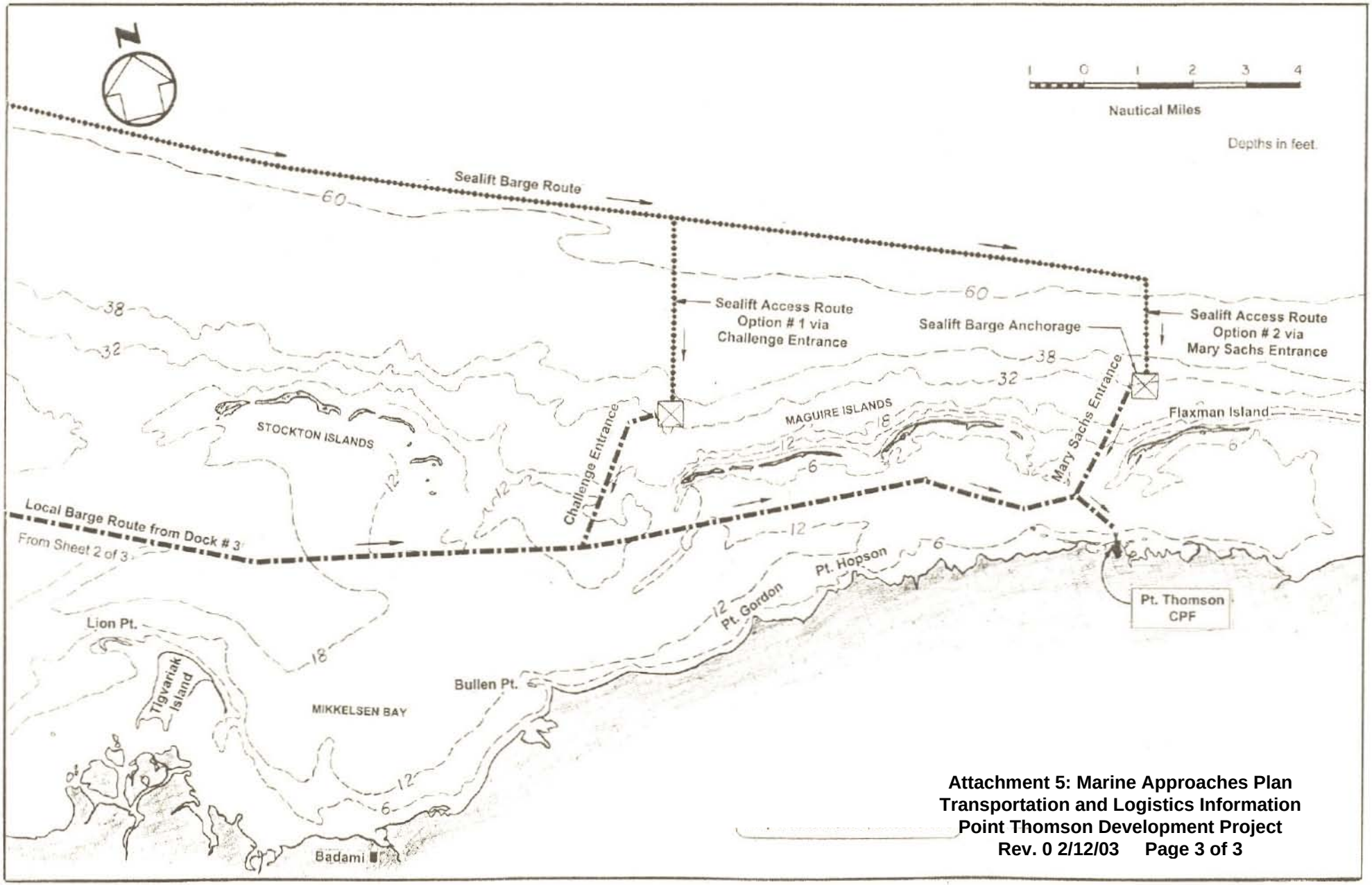
Note: From 2009 until 2037, assume 30 roundtrips per month to each well pad.
From 2009 until 2037, assume 30 trips per month to the airport\mine site
Roundtrips do not include traffic related to gravel construction of the infield road system and pads



Attachment 5: Marine Approaches Plan
Transportation and Logistics Information
Point Thomson Development Project
Rev. 0 2/12/03 Page 1 of 3



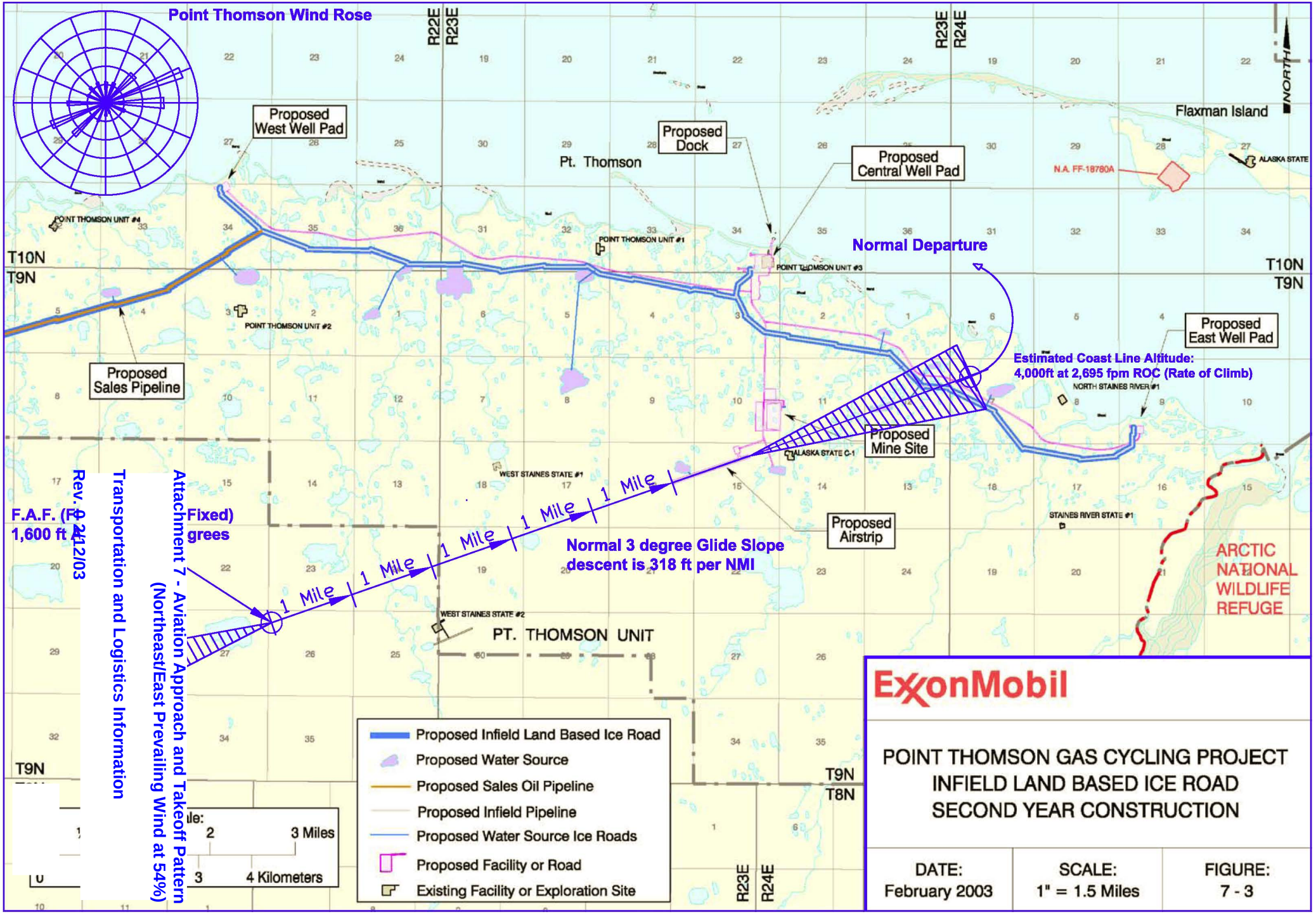
Attachment 5: Marine Approaches Plan
Transportation and Logistics Information
Point Thomson Development Project
Rev. 0 2/12/03 Page 2 of 3


N
1 0 1 2 3 4
Nautical Miles
Depths in feet.
Sealift Barge Route
60
Sealift Access Route
Option # 1 via
Challenge Entrance
Sealift Barge Anchorage
Sealift Access Route
Option # 2 via
Mary Sachs Entrance
38
32
STOCKTON ISLANDS
Challenge Entrance
MAGUIRE ISLANDS
18
12
6
Mary Sachs Entrance
Flaxman Island
Local Barge Route from Dock # 3
From Sheet 2 of 3
Pt. Hopson
Pt. Gordon
Pt. Thomson
CPF
Lion Pt.
Tigvariak
Island
Bullen Pt.
MIKKELSEN BAY
Badami

Point Thomson Development Project
Attachment 6 - Marine Traffic Summary

	Number of Round Trips											
	2005			2006			2007			2008		
Marine Traffic	July	August	Sept.	July	August	Sept.	July	August	Sept.	July	August	Sept.
Barge (Fuel) - Note 1		1			1			1			1	
Barge (North Slope Coastal) - Note 2	9	36	36	8	27	27	7	28	28	4	16	5
Barge (via Mackenzie River) - Note 3												
Large Barge (Sealift)					9							
Other Vessels - Note 4	11	2	2	3	10	2	1	4	2	1	4	2
Total	20	39	38	11	47	29	8	33	30	5	21	7

NOTE:
1. Does not include lighter barge trips
2. Chemicals represent 4% of the overall trips
3. There is a possibility that some trips may come from the Mackenzie River
4. Mobilization of ACS fleet, bathymetric survey, Sealift assist tugs & screed barges
5. After 2008, assume six (6) Coastal Barge round trips per year (in August) for the life of the facility
6. After 2008, assume six (6) Other Vessel round trips per year (in August) for the life of the facility
7. After 2008, assume one (1) Fuel Barge round trip per year (in August) for the life of the facility
8. All barges will be single tow (i.e. no tandem tows)
9. Return trips from Point Thomson may have some tandem tows



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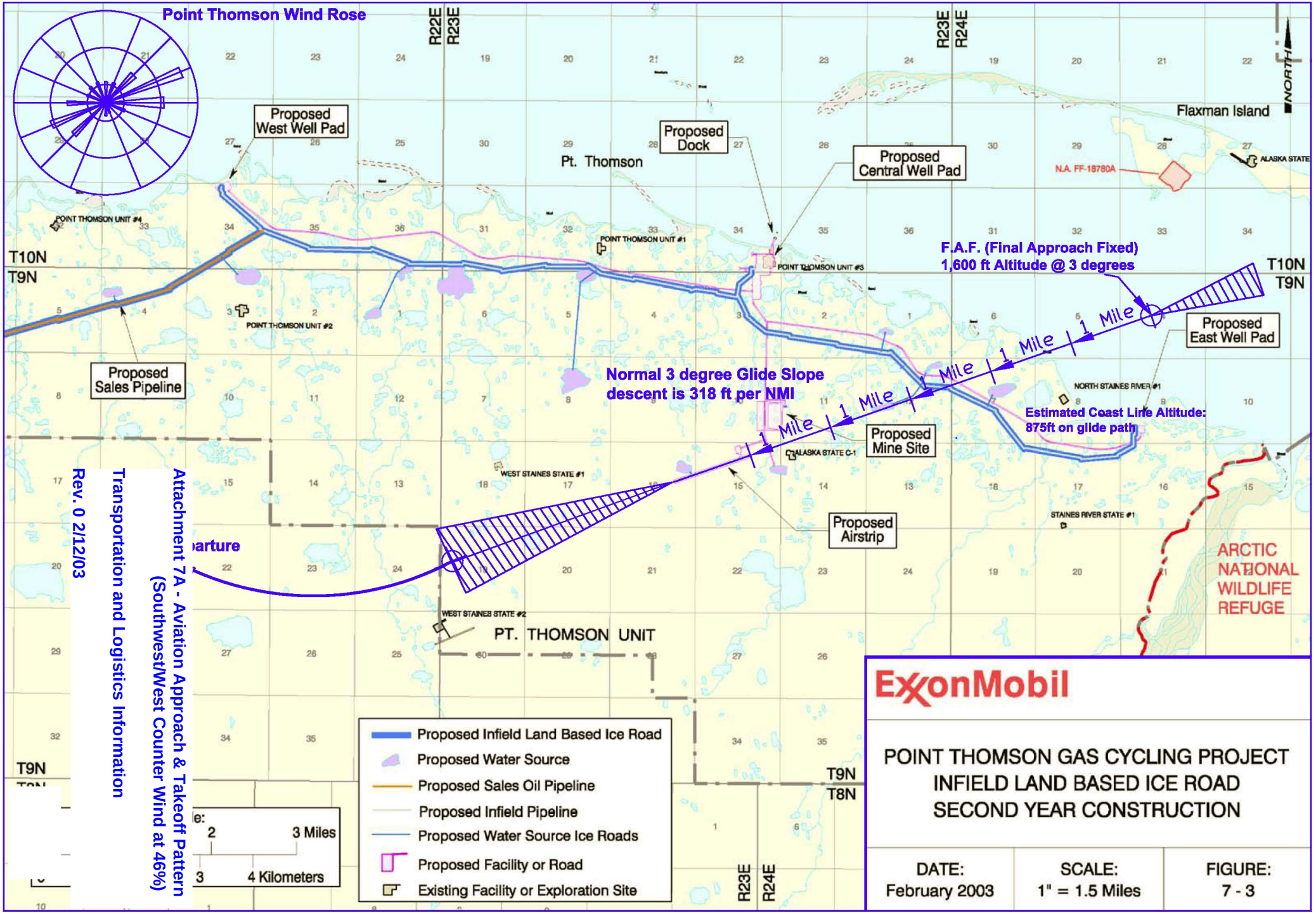
POINT THOMSON GAS CYCLING PROJECT
INFIELD LAND BASED ICE ROAD
SECOND YEAR CONSTRUCTION

DATE:	SCALE:	FIGURE:
February 2003	1" = 1.5 Miles	7 - 3


Point Thomson Wind Rose
Proposed West Well Pad
Proposed Dock
Proposed Central Well Pad
Proposed East Well Pad
Proposed Sales Pipeline
Proposed Mine Site
Proposed Airstrip
Pt. Thomson
Flaxman Island
PT. THOMSON UNIT
F.A.F. (Final Approach Fixed)
1,600 ft Altitude @ 3 degrees
Normal 3 degree Glide Slope
descent is 318 ft per NMI
Estimated Coast Line Altitude:
875ft on glide path
1 Mile
ARCTIC NATIONAL WILDLIFE REFUGE
POINT THOMSON UNIT #1
POINT THOMSON UNIT #2
POINT THOMSON UNIT #3
POINT THOMSON UNIT #4
WEST STAINES STATE #1
WEST STAINES STATE #2
ALASKA STATE C-1
NORTH STAINES RIVER #1
STAINES RIVER STATE #1
N.A. FF-18780A
ALASKA STATE
T10N
T9N
T8N
R22E
R23E
R24E
NORTH
Proposed Infield Land Based Ice Road
Proposed Water Source
Proposed Sales Oil Pipeline
Proposed Infield Pipeline
Proposed Water Source Ice Roads
Proposed Facility or Road
Existing Facility or Exploration Site
2 3 Miles
3 4 Kilometers
Attachment 7A - Aviation Approach & Takeoff Pattern
(Southwest/West Counter Wind at 46%)
Transportation and Logistics Information
Rev. 0 2/12/03
ExxonMobil
POINT THOMSON GAS CYCLING PROJECT
INFIELD LAND BASED ICE ROAD
SECOND YEAR CONSTRUCTION
DATE: February 2003
SCALE: 1" = 1.5 Miles
FIGURE: 7 - 3

Point Thomson Development Project
Attachment 8 - Aviation Traffic Summary

	Number of Round Trips															
	2005				2006				2007				2008			
Point Thomson Aviation Traffic	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Helicopter	10	40	10													
Small Passenger Aircraft			170	210	200	200	240	260	180	160	150	160	160	120	100	80
Medium Cargo Aircraft				6		12	3	12	12	12	12	12	12	12	12	12
Large Cargo Aircraft				1				1	1	1	1	1	1	1		
Total	**10**	**40**	**180**	**217**	**200**	**212**	**243**	**273**	**193**	**173**	**163**	**173**	**173**	**133**	**112**	**92**

	Number of Round Trips															
	2005				2006				2007				2008			
Badami Aviation Traffic	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Small Passenger Aircraft/Helicopter	100	70	20	5	70	35	5	0	0	0	0	0	0	0	0	0
Total	**100**	**70**	**20**	**6**	**70**	**35**	**5**	0	**0**	**0**	**0**	0	**0**	**0**	**0**	0

Helicopter: Bell 412

Small Passenger Aircraft: Beech 1900

Medium Cargo Aircraft: DC-6

Large Cargo Aircraft: Boeing C-130

NOTE: After 2008, assume three (3) Small Passenger Aircraft (B-1900) flights per week for the life of the facility
After 2008, assume sixteen (16) Medium Cargo Aircraft (DC-6) flights per year for the life of the facility
After 2008, assume four (4) Large Cargo Aircraft (C-130) flights per year for the life of the facility
It is likely that Helicopter trips may be required periodically through the life of the project but cannot be predicted at this time
Small passenger aircraft for personell billeted at Badami is required to support Ice Road, Gravel & Pipeline construction