



KABATA

Knik Arm Bridge and Toll Authority

KNIK ARM CROSSING PROJECT

Alaska Department of Transportation & Public Facilities

DOT & PF



KNIK ARM CROSSING DRAFT PURPOSE AND NEED STATEMENT

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1.0 PURPOSE AND NEED FOR THE PROJECT

1.1 Purpose and Need Statement

The purpose of the Knik Arm Crossing project is to improve access and surface transportation connectivity between the Municipality of Anchorage/Port of Anchorage/Ship Creek industrial area and the Matanuska-Susitna (Mat-Su) Borough/Port MacKenzie Port District. The proposed Knik Arm Crossing project addresses five specific problem/need categories:

1. Efficient surface connectivity and freight and goods movement needs between the Port of Anchorage/Ship Creek industrial area and Port MacKenzie Port District.
2. Alaska military operations support for intermodal military deployment and re-supply associated with their critical homeland security infrastructure and military mission.
3. Safety and redundant overland routes connecting area airports, military bases, ports, and hospitals for emergency response and evacuation needs.
4. Inadequate existing transportation infrastructure to meet existing and projected population and economic growth forecasts for the Upper Cook Inlet region.
5. Conventional funding for the Knik Arm Crossing project has historically been beyond the capabilities of state and local governments.

1.2 Discussion of Purpose and Need Statement

The following section discusses the five specific problems, or needs, that explain why the Knik Arm Crossing project is necessary, listed in the order presented above.

(1) Efficient surface connectivity and freight and goods movement needs between the Port of Anchorage/Ship Creek industrial area and Port MacKenzie Port District.

The Port of Anchorage (POA)/Ship Creek industrial area and Port MacKenzie Port District cannot adequately and efficiently support the handling, storage, and transportation of freight and goods between the two commercial/industrial areas due to the existing 80 mile road distance separation.

The POA is well established as the primary container-handling port in the state and is currently expanding its capabilities to more efficiently handle container traffic. Eighty percent of the state's consumer goods are imported through the POA. However, the POA has very little space to store bulk commodities such as timber and wood chips, sand and gravel, or coal, or to expand its current fuel storage capacity. Similarly, it has very little space for industrial manufacturing for homes, oil field equipment, or mining

support items to be barged to rural Alaska. In addition, there is limited truck access in and out of the port that hinders efficient transport of freight to areas north of Anchorage, a problem that has been recognized in previous studies (POA Northern Corridor Feasibility Study, 1997).

The Mat-Su Borough currently is developing its relatively new port in ways that are largely complementary to the Port of Anchorage—that is, to make use of its relative abundance of developable land without competing with the Port of Anchorage’s efficient container handling facilities. The Borough has plans for the adjacent 10,000-acre Port MacKenzie Port District (PMPD) to provide services for bulk commodity storage (fuel, timber, sand and gravel, peat, and grain), a floatplane base to serve air taxi and private pilots, and a public boat launch ramp. Without the direct road connection to Anchorage, the opportunity to offer these services has been limited because individuals and companies based in Anchorage would not have ready access to the PMPD, and companies that located operations at the PMPD would not be able to attract employees from the large employee pool in Anchorage.

Currently, the two ports/industrial areas cannot effectively coordinate operations because of the two-mile separation by Knik Arm and 80-mile road distance between these areas. This inability to coordinate operations restricts the ability of each Port and their respective owners, the Municipality of Anchorage and the Mat-Su Borough, to use the strengths of each port facility to provide logical cooperation and coordination between the two ports. This surface transportation system must be able to effectively operate on a year-round, 24-hour, 7-day-a-week basis (including Just-in-Time management) because each port has and will continue to have customers who need access to each port on a timely and uninterrupted basis. The explosive past growth in the Mat-Su Borough population and steady past growth in Anchorage has, and is reasonably expected to continue. The anticipated growth is forecast to double the regional Anchorage-Mat-Su population by 2050, with more than 80 percent of growth forecast in the Mat-Su Borough (Northern Economics 2004), which will increase these demands.

As the Mat-Su Borough population and economic base grows, there will be greater demand for direct access to the POA for efficient container movement, and as the Anchorage population and economic base grows, there will be greater demand for the industrial land base and commodities shipping that can be provided at Port MacKenzie.

The only current connection between the two ports/industrial areas is by a 1.5 to 2-hour drive via the local roadway network, yet the ports physically are only two miles apart. Because the road connection between the two ports is indirect, any user of either or both ports/industrial areas must undertake a time consuming, expensive, and laborious process involving driving through downtown Anchorage, Alaska’s largest city, around the head of Knik Arm, and through Wasilla, the Mat-Su Borough’s busiest city.

Linking Port MacKenzie and the planned 10,000-acre PMPD directly to the Anchorage road, rail, marine, and air transportation hub greatly improves intermodal connections to the rest of the state and international destinations. Such intermodal connections are currently limited. Connection of the two ports/industrial areas with a direct road link will allow for the greatest possible complementary growth for the benefit of virtually the entire state, as well as the Mat-Su Borough and Municipality of Anchorage. Efficient container off-loading in Anchorage and commodity shipping and storage/industrial manufacturing at the PMDA means stronger regional port/industrial area capacity. Container loads from Anchorage can immediately deploy by truck to the PMPD for manufacturing. Increased commodity and fuel storage potentials at the PMPD will serve airport, military, and Anchorage and Mat-Su consumer needs. A recent report published in association with the Stranded Gas Act (Information Insights, 2004) has indicated that additional port infrastructure will be required to meet shipping demands for pipe and other construction supplies. In addition, improved access between the ports will meet critical military needs as discussed below.

(2) Alaska military operations support for intermodal military deployment and re-supply associated with their critical homeland security infrastructure and military mission.

Alaska military bases need additional port access, expanded logistics capability, and improved operations for intermodal military deployment and re-supply within the Anchorage area to meet critical homeland security infrastructure and military mission needs. During emergency military occurrences, inadequate transportation infrastructure would exist to handle routine port and industrial area operations.

Anchorage has two active military bases: Fort Richardson, one of two Army posts that host the 172nd Stryker Brigade, and Elmendorf Air Force Base, a strategic air base. These military bases have a critical need for port facilities through which to obtain a ready supply of fuel, supplies, and equipment, and for embarkation during military deployments. In addition, the Port of Anchorage has recently been designated by the Department of Defense as a Strategic Seaport. This designation requires port use in moving military cargoes in time of crisis. The Anchorage port is the only such designated port outside of the contiguous United States. There is a need for additional port access, expanded logistics capability, and improved capacity for intermodal military deployment and re-supply with the current activation of the Army's Stryker Brigade in Alaska. The Knik Arm Crossing would provide critical homeland security infrastructure for the ports and Alaska military operations.

The Knik Arm Crossing will serve military plans to deploy the Stryker Brigade at Fort Richardson from Fort Wainwright. The Stryker Brigade is planned to undertake some of its training maneuvers on Fort Richardson, an expansion of the Fort's training regime and active training area. Other northern port access routes previously considered for the Knik Arm Crossing project would impact Fort Richardson lands and training areas. The Stryker Brigade will be based largely at Fort Wainwright, in central

Alaska near Fairbanks. The Stryker Brigade will require massive deployments from Fort Wainwright to the Port of Anchorage, with approximately one-third of the Stryker units deploying by air and two-thirds deploying by sea. The 2003 Transformation of the U.S. Army Alaska Environmental Impact Statement (EIS) indicates the need for large deployments both for training and for overseas military missions using road and rail access between the interior and coastal military bases. The assumption in the EIS is to use existing railroad track and the Parks and Glenn Highways. Efficiency will be enhanced with the ability to move around either side of Knik Arm or the use of two ports instead of one due to the limited area for deployment support at the POA. In addition, munitions re-supply are currently required to be handled through the port at Valdez due to restrictions at the POA. An improved connection to Port MacKenzie would expand opportunities for munitions re-supply at a more efficient location that meets safety requirements.

(3) Safety and redundant overland routes connecting area airports, military bases, ports, and hospitals for emergency response and evacuation needs.

There is only one continuous north-south transportation corridor in the region, the Glenn Highway. In the event of a natural disaster or other emergency, interruption of this single transportation corridor would leave Anchorage, all communities south of Anchorage on the Kenai Peninsula, and the MSB without an overland route for emergency response or evacuation.

The Federal Highway Administration (FHWA) also provides guidance on contingencies for continued operations that include elements of redundancy such as communications, power, and continuity of operations and essential functions in the event of a disaster. Through Presidential Directive 67, the objectives of a Continuity of Operations Plan include:

- Ensure continued operations;
- Protect assets;
- Reduce disruptions to operations;
- Reduce loss of life; and
- Timely recovery.

FWHA advocates improved planning including transportation operations to ensure transportation emergency preparedness. As part of this process, emergency transportation planning helps communities prepare for homeland security events, natural hazard events, and evacuation and alternate routes. Emergency transportation operations include critical transportation functions performed during and after emergencies:

- planning for anticipated events, such as winter storms;
- monitoring of emergency conditions;
- damage and capacity assessments of transportation systems;
- identification and management of vehicle safety lifeline routes;
- traffic control to support emergency response and evacuation;
- managing capacity reductions on detours and evacuation routes;
- development of operational strategies to address response phases;
- warning alerts; and
- stabilization of traffic demand.

Emergency transportation operations also include coordination with authorities regarding the closure, re-opening, configuration and operation of the transportation system under emergency conditions. In times of emergency, a Knik Arm Crossing will serve as an evacuation route should the only other route out of Anchorage to the north or Matanuska-Susitna Borough be rendered unusable. The Knik Arm Crossing would provide Alaska's most populous region with redundant routes for improved safety, disaster preparedness, and emergency response.

Local emergency operation and preparedness plans indicate as assumptions in the case of disaster that power would be out and transportation systems damaged. The 1994 MOA Comprehensive Emergency Management Plan (CEMP) includes annexes to provide for the safe evacuation or in-place shelter of part or all of the population of the MOA. The MOA Office of Emergency Management stated that should a major evacuation be necessary, the population would be evacuated north on the Glenn Highway. While the CEMP is currently being updated, and is scheduled to be released in late 2005, the same concept still applies. As identified in the State of Alaska and MOA All-Hazards Mitigation Plans, Anchorage is vulnerable to many natural hazards including earthquake, wildfire, flood, volcano, avalanche, tsunami, and severe weather. Due to the proximity to two significant military installations, as well as the presence of the Ted Stevens Anchorage International Airport (TSAIA), Anchorage is also vulnerable to man-made hazards such as air transportation accidents and terrorist activities.

The Anchorage population, combined with the MSB core area population, currently is approximately a third of a million people and by 2050 is projected to be more than three-quarters of a million. More than fifty percent of the Mat-Su labor force commutes to work in Anchorage. Only the Glenn Highway connects these two areas. In certain locations, such as the head of Knik Arm on the MOA side and short sections between Chugiak and Eklutna, there is no alternative connecting route. Where there are alternatives, they are not adequate to handle even a fraction of normal traffic volumes. For these reasons, if the Glenn Highway were closed because of accident, earthquake damage, or other disaster, normal travel would cease entirely and emergency surface response could be curtailed. A Knik Arm Crossing would provide redundant road

transportation to ensure that emergency response could be carried out and some normal traffic could continue. Similarly, the new Army Stryker Brigade depends upon deployment by highway and rail from Interior Alaska to the POA. Redundant access would make any deployment more efficient and could make emergency deployment possible if the Glenn Highway or rail line were impassible.

As noted elsewhere, Anchorage is the primary transshipment location for goods arriving by barge or by air and bound for dissemination throughout Alaska. This includes hazardous materials, from petroleum to chlorine and ammonia. Catastrophic explosion or leaks into the air from industrial areas, the rail line, or trucking routes could warrant emergency response or evacuation that could be hindered with the current transportation system.

The entire region is subject to earthquakes, and coastal areas are subject to tsunami (tidal wave). Even a wildfire along the Glenn Highway could halt traffic for long periods, as could highway or bridge damage from earthquakes or other natural disaster. Relatively minor automobile accidents on the Glenn Highway cause tremendous delays and loss of service. A winter storm combined with an accident and other emergency could be catastrophic. Redundant access would help to relieve this problem and would help in more routine emergency response in the region.

(4) Inadequate existing transportation infrastructure to meet existing and projected population and economic growth forecasts for the Upper Cook Inlet region.

Nearly half the population of the state of Alaska resides in the Municipality of Anchorage and Mat-Su Borough, and has for the past twenty years. Anchorage and the Mat-Su Borough will continue to be the growth centers in the region. The anticipation of major economic activities such as the construction of a natural gas pipeline, further development of the natural gas industry, the anticipated increase in mining activities, and expansion of air cargo activities at TSAIA are expected to generate economic and population multiplier effects in the state, particularly affecting Anchorage—the center of transportation and commerce in the state. The Mat-Su Borough is also expected to absorb an increasing share of the population growth in the region.

The Mat-Su Borough population grew approximately fifty percent between 1990 and 2000, three times the statewide growth rate, and it continues to be the fastest growing location in the state (Northern Economics 2004). Since the 2000 census, the Mat-Su Borough has grown 15.3 percent to 68,335 persons and now represents 11 percent of the population of Alaska. Most of that growth and population lives in the area around Wasilla and Palmer. The Municipality of Anchorage currently supports approximately 42 percent of Alaska's population (270,951 people in 2003).

Population growth in the north parts of Anchorage and in the Mat-Su Borough in particular has put greater demands on the transportation infrastructure in the area. Currently, the Glenn Highway is the only major highway access that connects

Anchorage and the Mat-Su Borough. The average daily weekday traffic on the Glenn Highway has reached a level that has motivated plans for significant highway improvements and upgrades on the Glenn Highway Corridor. Population and employment growth in Anchorage coupled with a limited supply of land, has caused an increase in Anchorage property values and will continue to intensify the pressure on land prices. The Anchorage population grew about 50 percent between 1980 and 2000, despite the economic downturn in the late 1980s. Since the 2000 Census, the population of the Municipality of Anchorage has grown by about 17,000 people. Anchorage housing expenses are currently 43.6 percent above that for the nation (U.S. Department of Labor 2002). According to the Alaska Department of Labor and Workforce Development, which uses the quarterly Survey of Lenders' Activity, a survey of private and public mortgage lenders, the average home on an average parcel in Anchorage costs approximately \$215,248 (DLWD 2003). The average sales price for an Anchorage home has increased by about \$89,000 since 1990, and the costs of homes and land are expected to increase.

As land for homes becomes more limited, the price of land and homes in Anchorage will continue to increase, making the Mat-Su area an increasingly attractive housing alternative to Anchorage with more people deciding to commute daily to work in Anchorage. According to Labor's Alaska Affordability's Index, the MSB is consistently ranked as one of the state's most affordable areas to buy a home. Land costs are lower than Anchorage, and homes are less expensive. The average single-family home in the MSB costs about \$169,404, about \$46,000 less than in Anchorage (Fried 2003).

According to the Anchorage 2020/Anchorage Bowl Comprehensive Plan, the Anchorage Bowl (the most urbanized area within the Municipality) totals 64,500 acres, of which only 11,725 acres remain vacant and suitable or marginally suitable for development.¹ The developable area is further limited on the north and east by Elmendorf Air Force Base (EAFB) and Fort Richardson. Given land supply and existing land uses and zoning, several changes in development patterns would be needed to accommodate future growth and housing demand. These changes include higher density development along transit corridors and redevelopment of obsolete and under-used housing, commercial and industrial properties. The remaining supply of vacant land in the Anchorage Bowl that is suitable for development in Anchorage is limited (see Table 1).

¹ Municipality of Anchorage Department of Community Planning and Development. *Anchorage 2020/Anchorage Bowl Comprehensive Plan* (adopted 2001).

Table 1. Land Availability in Anchorage

Land Description	Acres (Approximate)
Currently Developed Total	49,400
Currently Undeveloped	14,300
Fully Suitable for Development	6,675
Marginal for Development	5,050
Unsuitable for Development	3,375
Available for Development Total	11,725
Land in Anchorage Total	64,500

Source: Anchorage 2020 Comprehensive Plan (MOA 2001).

The current supply of land for single-family homes, whether urban or rural, is inadequate to meet market demand and will become more limited as Anchorage grows (MOA 2001). According to the University of Alaska Anchorage's Institute of Social and Economic Research (ISER), Anchorage's population is likely to grow 38 percent by the year 2020. The forecasts for growth indicate that the Anchorage Bowl will need to accommodate 81,800 more residents (approximately 39,600 households) in the next 20 years (ISER 1999).

Commuters and other travelers from the Mat-Su Borough drive approximately two hours (approximately 100 miles) round trip to Anchorage, although some commuters have longer travel times. The average round trip cost by car for a commuter to Anchorage from the western Mat-Su Borough is between \$36 and \$48. The commuting area has expanded as the Glenn Highway and Parks Highway have been improved, with subsequent increases in total vehicle miles traveled, travel cost, and air emissions.

Economists and planners expect that those who would settle in the Greater Point MacKenzie area would largely be seeking access to affordable residential land in the western Mat-Su Borough without the lengthy commute presently required. The Knik Arm Crossing is expected to generate substantial travel time and cost savings to commuters who live and work across the Knik Arm.

The Greater Point MacKenzie area currently is sparsely settled, largely because it is far from population centers by road. However, as indicated above, denser development is expected as the population grows. The existing Mat-Su population west of Wasilla, including year-round and seasonal residents of the Big Lake area, would benefit from a shorter/more convenient access to Anchorage for its urban amenities—cultural events, shopping, medical and commercial services, the international airport, urban leisure/recreational pursuits, and visiting friends and relatives. The Knik Arm Crossing, in conjunction with planned Mat-Su road upgrades, would make this access convenient.

Additionally, the Knik Arm Crossing will provide much faster access to serve the increasing demand from Anchorage residents for outdoor recreation activities. The Little Susitna State Recreational River, the Goose Bay and Susitna Flats State Game Refuges east and west of Point MacKenzie, the Nancy Lake Recreation Area, and the developed recreational properties in the Big Lake area are key recreational resources in the Mat-Su Borough which could be reached in much less time with the Knik Arm Crossing. Uses include hunting, fishing, canoeing, public use cabin stays, cross-country skiing, snowmobiling, and dog mushing (including the Iditarod National Historic Trail).

With respect to commercial and industrial lands, the Anchorage Bowl Commercial and Industrial Land Use Study,² which analyzed trends and estimated land requirements for future commercial and industrial development, the Anchorage Bowl has, overall, an adequate supply of commercially zoned land and a comfortable surplus of industrially zoned land to sustain growth in the marketplace. The study concluded that 24 percent of land in industrial use was fully developed while 37 percent of land in commercial use was fully developed. While the overall supply of commercially and industrially zoned land in the Anchorage Bowl appears adequate to support growth, the study identified some site-specific challenges for industrial land supply in proximity to major transportation infrastructure. For instance, the POA is constrained by poor land-side access, and expansion at the TSAIA is constrained by residential development, park, and wetlands.

Furthermore, there have been marked changes in property values and uses since the study was done in 1996. The economic census recently noted the cost of properties in Anchorage. The rise in property values is resulting in conversion or reallocation of land to higher value uses. The Midtown area, for instance, has recently experienced an increase in redevelopment activities with office building construction and higher density residential development is also occurring. With the Knik Arm Crossing, the Port MacKenzie area would provide an attractive alternative with lower land costs and yet easy access to Anchorage, for industrial activities such as warehousing, metal and module fabrication, gravel extraction, and other land-intensive industries, which may find it difficult to expand or remain in Anchorage given increasing land costs.

(5) Conventional funding for the Knik Arm Crossing project has historically been beyond the capabilities of state and local governments.

The inability of state and local government to adequately fund the Knik Arm Crossing project hinders the region's ability to advance the economic welfare of the state, as directed by Alaska legislative mandate (AS 19.75.001) to construct a bridge to span Knik Arm and connect the MOA and Mat-Su Borough.

² HDR. *The Anchorage Bowl Commercial and Industrial Land Use Study* (prepared for the Municipality of Anchorage Department of Community Planning and Development) 1996.

More than 80 years of transportation, land use and economic plans and studies have addressed the need for a Knik Arm Crossing, including a Draft Environmental Impact Statement (DEIS) prepared for the project in 1984. Historic and current studies and legislative direction clearly indicate the need for improved regional transportation network connectivity and access, including development and connectivity of the Port of Anchorage/Ship Creek industrial area and Port MacKenzie Port District. However, the funds necessary to finance a major regional infrastructure project such as the Knik Arm Crossing has been beyond the financial means of state and local governments. The project has continually failed in its mission over the past decades due to lack of adequate funding sources. In 2003, recognizing the economic and transportation needs of the region, the Alaska Legislature established the Knik Arm Bridge and Toll Authority (KABATA) to pursue construction of a Knik Arm Crossing as a toll bridge. Its Mission Statement is to:

“...develop, stimulate, and advance the economic welfare of the state and further the development of public transportation systems in the vicinity of Upper Cook Inlet with construction of a bridge across Knik Arm and connect the Municipality of Anchorage and the Matanuska-Susitna Borough.”

Toll funding meets the critical financial needs required to construct and operate/maintain the Knik Arm Crossing. As evidenced by historic attempts, the project cannot be advanced as a viable transportation project without toll funding as the base of the financial plan. In fact, one of the primary reasons that the KABATA was created is due to funding requirements. A project of this magnitude requires funding of a magnitude not available through the regular state budget process. A central control is needed to administer multiple-source revenue and therefore a "Board of Directors" was established and functions as the policy setting legislative body of KABATA.

The necessity to have full funding for construction in place necessitates the issuance of revenue bonds as authorized in State statutes, and the use of advanced funding programs like Transportation Infrastructure Finance and Innovation Act (TIFIA). The subsequent collection of tolls assures debt retirement and payment for maintenance and operations.

During the feasibility-planning phase, KABATA has established a capital budget range of \$400 to \$600 million based on conceptual design estimates from three nationally recognized bridge engineering firms. Preliminary financial plans appear feasible to an upper limit of \$600 million assuming approximately one-third of the funding is included in the Federal transportation bill, another third from Alaska sources and a final third from the sale of commercial revenue bonds, which would be repaid by tolls. Therefore, a vehicular toll bridge that is cost-affordable within these funding constraints is a critical need for the project, as is the need to provide an efficient transportation system that will attract ridership to sufficiently generate toll revenues.

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