CHAPTER 12. The Knik Arm Crossing Project

Introduction

This Long-Range Transportation Plan (LRTP) is amended to include an additional chapter on the Knik Arm Crossing project. As noted in the previous chapters, the 2025 Anchorage Bowl LRTP endorsed the completion of the Knik Arm Crossing environmental and engineering studies, but it stopped short of including the Knik Arm Crossing project as part of the planned roadway network, partly because transportation policy makers wanted to make their decision based on the environmental impact of the project.

Environmental impact information became available with the release of the *Knik Arm Crossing Draft Environmental Impact Statement and Draft Section 4(f) Evaluation* (DEIS, prepared by the Knik Arm Bridge and Toll Authority [KABATA]) in September 2006. A public review of the Knik Arm Crossing Amendment to the Long-Range Transportation Plan was initiated shortly thereafter. This amendment includes the following actions:

- Amend the LRTP to include the Knik Arm Crossing project as a regionally significant project
- Extend the planning horizon of the Anchorage Bowl LRTP to 2027
- Support the designation of the project alignment as part of the National Highway System (NHS) and update the Official Streets and Highways Plan to reflect such designation
- Adopt the regional air quality conformity determination on the project in accordance with the Clean Air Act

These steps are required by federal law (Title 23, Part 134, of U.S. Code) for all projects considered regionally significant.

Background

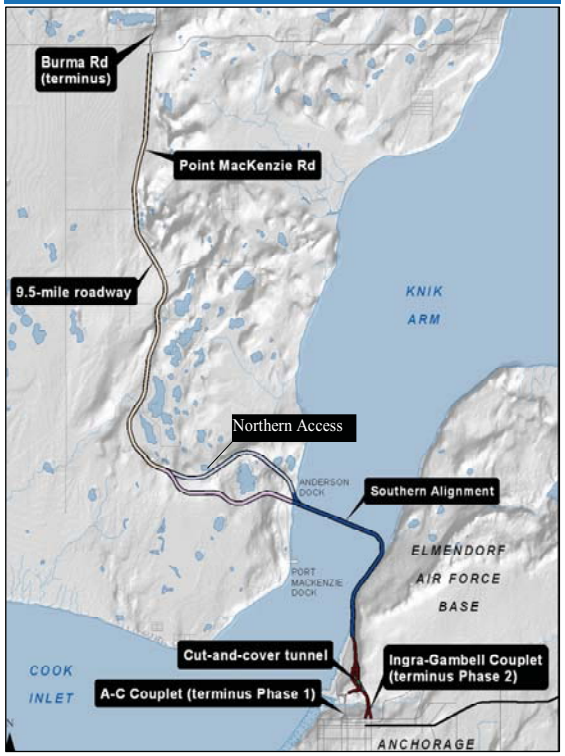
The Alaska Legislature established KABATA in 2003 as a public corporation and an instrumentality of the State of Alaska within the Alaska Department of Transportation and Public Facilities (DOT&PF). The specific mission of KABATA is to "develop, stimulate, and advance the economic welfare of the state and further the development of public transportation systems in the vicinity of the Upper Cook Inlet with construction of a bridge to span Knik Arm and connect the Municipality of Anchorage (MOA) and the Mat-Su Borough" (Alaska Statute 19.75.011).

Project Description

The Knik Arm Crossing project is a roadway and bridge crossing of Knik Arm connecting the Municipality of Anchorage (MOA) and the Matanuska-Susitna Borough (Mat-Su), as shown in Figure 12-1. The total length of the project from the intersection of Point MacKenzie and Burma roads to the A-C Couplet and Ingra-Gambell Couplet is approximately 19 miles. The preferred alternative assumes construction of an 8,200-foot, pier-supported bridge with causeway approaches that extend 2,000 feet from the western shore and 3,300 feet from the eastern shore.

The project would be phase-constructed, with an initial minimum two-lane bridge and a connection to the A-C Couplet in Phase 1 and an expansion of the bridge to four lanes and connection to the Ingra-Gambell Couplet constructed in Phase 2. The project is classified as a rural principal arterial in the Mat-Su and across Knik Arm, transitioning to an urban principal arterial in Anchorage in the vicinity of the Port of Anchorage (POA). The following page describes in more detail the part of the project within the MOA and Anchorage Metropolitan Area Solutions (AMATS) LRTP boundary.

Figure 12-1. Knik Arm Crossing Project



Source: HDR Alaska, Inc.

In Anchorage, the project follows the Anchorage shoreline and western perimeter of Elmendorf Air Force Base at the bottom of the bluff to Cairn Point, and then continues south, closely following the natural curvature of the shoreline. The project includes a cut-and-cover tunnel under Government Hill, along either a Degan Street- or Erickson Street-area alignment. Initial construction would include a connection to the existing A-C Couplet. Because of the impact of the bridge traffic on downtown streets, work on the design of the connection to a new viaduct (elevated bridge) across the Ship Creek rail yard to connect with the Ingra-Gambell Couplet should begin as soon as possible after the bridge is opened. Figures 12-2 and 12-3 depict the Knik Arm Crossing in more detail.

Neighborhood Mitigation

The Government Hill Community Council as well as other neighborhood community councils, such as Downtown, South Addition, and Fairview, would be directly affected by the proposed Knik Arm Crossing, given the current alignment alternatives. The project currently is in the environmental phase of development. For purposes of the LRTP, it is appropriate to provide guidance about the character of the project and expectations of how the project would be integrated into neighborhoods. An example of this guidance appears in the language adopted for cut-and-cover segments of the Glenn-Seward Highway connection. (See pages 115 to 117 of the Anchorage Bowl 2025 LRTP.)

Because of the potentially adverse effects of Phase 1 traffic from the Knik Arm Crossing on the revitalization of affected neighborhoods, the design for the Anchorage side of the bridge must include adequate mitigation to facilitate the efficient, safe, and neighborhood-appropriate incorporation of bridge traffic through Downtown and onto roads that can handle the anticipated increase in traffic. Design considerations would include measures to reduce the impact of the Knik Arm Crossing traffic from Government Hill to Downtown, and would provide improved pedestrian connectivity along the A-C Couplet up to 6th Avenue.

The connection of the Knik Arm Crossing to the A-C Couplet and ultimately the Ingra-Gambell extension in concept would include the use of existing topography to trench and cover an expressway-type roadway on an alignment designed to serve through trips and reduce traffic on neighborhood streets. These components would be accomplished while incorporating improved parks and pedestrian connections to benefit the Government Hill neighborhood, including trail connections joining Downtown, Ship Creek, and Government Hill. Unique and innovative community and streetscape enhancements would be required as part of the Knik Arm Crossing project as it travels through Government Hill. For example, a span over the depressed expressway could be used to reestablish neighborhood connectivity and minimize noise and air quality impacts to the neighborhood. The project would provide Government Hill with a balance of local road, trail, and pedestrian facilities, and would discourage the use of local roads by through traffic that might cut through the neighborhood.

The project would not result in a traditional freeway through a neighborhood that creates a barrier and separation of the neighborhood. The goal is for Government Hill and the project sponsors to use the opportunity to implement well-designed mitigation projects. Such mitigation projects would be developed in close cooperation

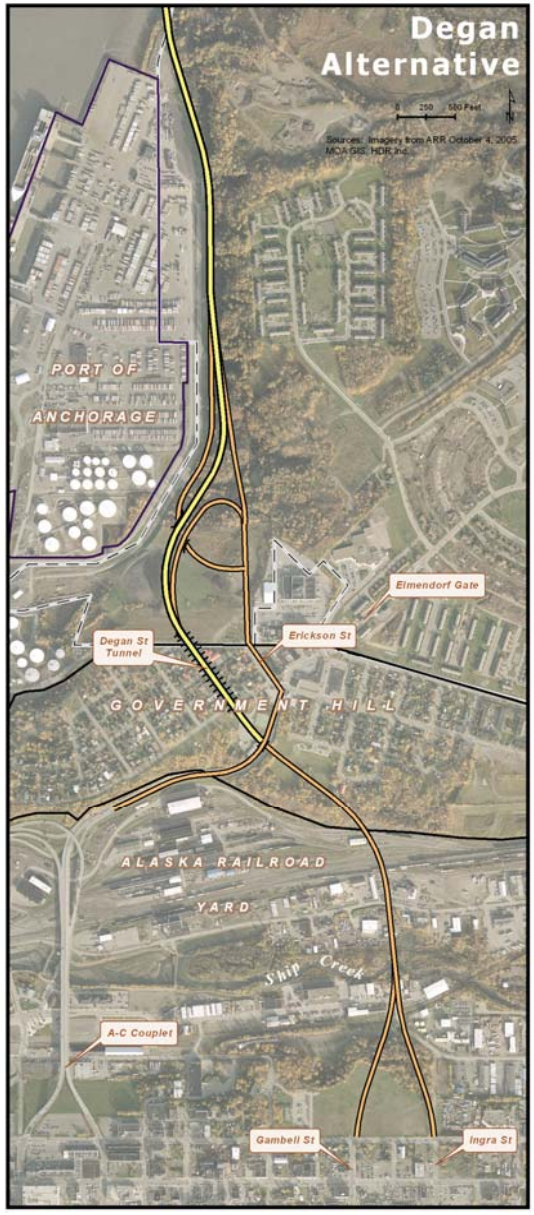
Key features of the Degan Alternative (Figure 12-2). Phase 1 includes a four-lane roadway (two-lanes in each direction), a cut-and-cover tunnel under Degan Street, and a connection to the A-C Couplet. Phase 2, which is basically the same for both alternatives, includes on and off ramps and an additional connection to the Ingra-Gambell Couplet through a new viaduct over the Ship Creek area.

Key features of the Erickson Alternative (Figure 12-3). Phase 1 includes a four-lane roadway (two-lanes in each direction), on and off ramps north of Government Hill, a tunnel under Erickson Street, and a connection to the A-C Couplet.

Legend

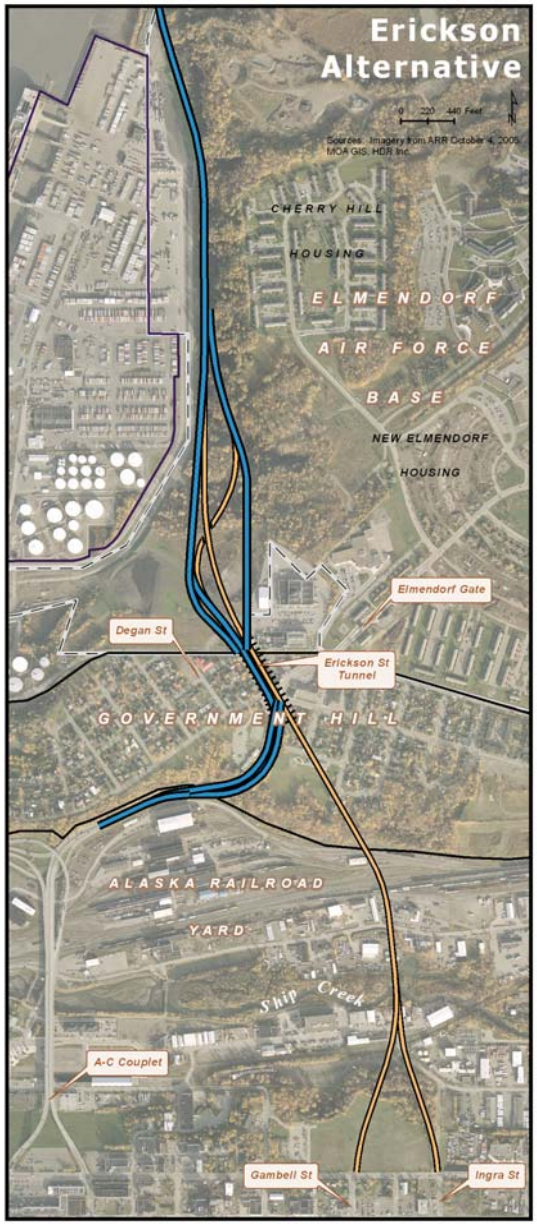
- Degan Street Alternative
- Erickson Street Alternative
- Future Expansion
- Cut-and-Cover Tunnel

Figure 12-2. Degan Alternative



Source: HDR Alaska, Inc.

Figure 12-3. Degan Alternative



Source: HDR Alaska, Inc.

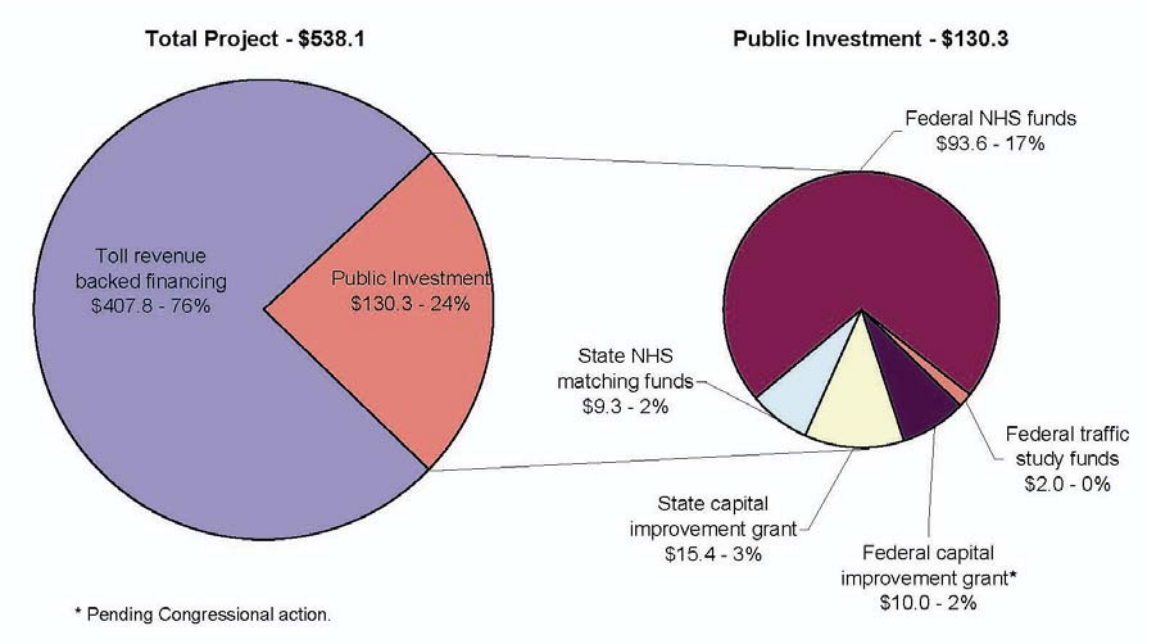
with the neighborhood. They would use a best practices and Context-Sensitive Design approach to enhance and revitalize the Government Hill community with a design that fits within the character of this unique and historic neighborhood.

Funding

According to the conceptual financial plan prepared by KABATA, the Knik Arm Crossing project would have no effect on the ability to finance or implement the other LRTP projects discussed in the 2025 Anchorage Bowl LRTP. In other words, the project would not require any future federal or state funding for construction, operations and maintenance, or future capacity requirements, beyond what the Alaska Legislature has already appropriated. The Alaska Legislature appropriated $93.6 million of the $232 million of federal-aid highway funds originally earmarked by the Alaska Congressional delegation for the Knik Arm Crossing in the SAFETEA-LU ((Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users) transportation bill. The Alaska Legislature also authorized state matching funds of $9.3 million when it provided spending authority for the federal funds. (See Figure 12-4.)

KABATA was established by the Alaska Legislature as a toll authority, and the toll revenue generated by users is expected to pay for most of the construction cost and all of the operation and maintenance expense. Tolls provide ongoing revenue, and the potential for tolls means that KABATA can borrow funds for construction. Money from toll collection would be used to pay for operating and maintaining the crossing, the cost of collecting the tolls, and general and administrative expenses of KABATA. Toll revenue would then also be used to pay principal and interest on loans, provide returns to investors, and fund investment in future expansion. After initial construction, traffic levels are projected to provide adequate toll revenue to support the project based on work performed by Wilbur Smith Associates, KABATA's traffic and revenue consultant.

Figure 12-4. Initial Construction Funding Sources



Note:
All dollars shown in millions.

Source: KABATA

Federal planning requirements for metropolitan areas stipulate that a financial plan demonstrate the consistency of proposed transportation investments with available projected sources of revenue. The description of the Knik Arm Crossing project includes estimates of costs that would be required to implement the project as well as estimates of existing and planned sources of funds available to pay for the project. The sections that follow present this information.

Cost Estimate for Initial Construction

Preliminary engineering estimates (independently confirmed by a Federal Highway Administration cost estimate review) indicate project costs for initial construction through opening of around $530 million to $540 million (in 2005 dollars). Initial construction includes improvements to existing roadways and development of connectors in the Mat-Su, the bridge and approaches, a road below the bluff around Cairn Point and behind the POA, and a tunnel under Government Hill, ultimately connecting to the A-C Couplet. A toll plaza and lanes are also included in the initial construction. Project cost information for the initial construction, including contingency costs, is included in Table 12-1. (Note: Cost estimates for Mat-Su road work are for illustrative purposes only and are not included as part of the Anchorage LRTP roadway project list.)

Proposed Funding for Initial Construction

The funding package to complete the initial construction of the project is anticipated to consist of approximately $408 million in toll revenue-backed financing and approximately $130 million in public investment, representing 76 percent and 24 percent, respectively, of initial construction costs. The projected funding package for initial construction, including jurisdictional allocations between Anchorage and the Mat-Su, is included in Table 12-2. The previous financial analysis conducted for the 2005 Anchorage Bowl LRTP showed that the amount of estimated future revenues was just barely sufficient to cover the cost of the roadway projects recommended in the LRTP. Therefore, it is critical to implementation of the LRTP to separate the funding for the Knik Arm Crossing project from the rest of the funding. In

Table 12-1. Initial Construction Costs

Component	Costs ($ millions)[a]		
	Anchorage	Mat-Su	Total
Mat-Su road work	–	30.0	30.0
Toll plaza and lanes	8.5	8.5	17.0
Toll bridge and abutments	181.7	181.6	363.3
Cairn Point/below the bluff road	62.5	–	62.5
Government Hill cut-and-cover tunnel	63.3	–	63.3
Total	**316.0**	**220.1**	**536.1**

[a] All costs are in 2005 dollars.

Source: KABATA

Table 12-2. Initial Construction Funding

Component	Costs ($ millions)[a]		
	Anchorage	Mat-Su	Total
Federal NHS allocation	56.1	37.5	93.6
State NHS match	5.6	3.7	9.3
State Capital Improvement Grant	–	15.4	15.4
Ingra-Gambell Reconnaissance Study	2.0	–	2.0
Federal Capital Improvement Grant[b]	10.0	–	10.0
Public Funding Subtotal	**73.7**	**56.5**	**130.3**
Sources backed by toll revenue funding	244.3	163.5	407.8
Total	**318.0**	**220.1**	**538.1**

[a] All costs are in 2005 dollars.

[b] Grant is pending. Assumes that the grant will be authorized.

Source: KABATA

traffic demand. Therefore, the financial feasibility analysis for the operation and maintenance of the Knik Arm Crossing assumed that no state or federal funds would be used to maintain and operate the facilities owned by KABATA, including the bridge, the approaches, and the toll facilities.

KABATA has also entered into a Memorandum of Understanding with the Mat-Su and DOT&PF to assign the operations and maintenance of the roads on the Mat-Su side of the crossing to the DOT&PF under the NHS. Given the regional significance of the project, it is recommended that the landside connections linking the Knik Arm bridge to the existing Anchorage road network, including the future Ingra-Gambell connection be listed as part of the NHS. As a result of this designation, the DOT&PF would be responsible for the maintenance of these facilities.

Conclusions

To incorporate financial constraint for the Knik Arm Crossing into the currently financially constrained LRTP, it is necessary to impose the following condition: No additional state funds and no additional federal transportation funds beyond those currently authorized, as shown in Tables 12-2 and 12-4, would be used to finance the project, including both initial construction and future expansion costs, as identified in Tables 12-1 and 12-3. Under this financial constraint, the funding for the amendment would no longer be valid (available) if additional state or federal transportation money is needed for the Knik Arm Crossing and the following conditions occur: (1) funding reduces the SAFETEA-LU formula funds or other flexible funds assumed as part of project funding (shown in Tables 12-2 and 12-4) and (2) the needed funding is not available because it is planned for use on other LRTP projects. Federal funding sources, such as loan programs, grants, tolls, and concessions, which are outside the funding assumed for existing LRTP projects, would not require an amendment to the LRTP, but these funding sources would be processed through the appropriations process for the Statewide Transportation Improvement Program (STIP) and the Transportation Improvement Program (TIP). If state or federal funds are proposed to be added to the Knik Arm Crossing project and those funds are also needed to show financial constraint for other LRTP projects, an amendment would be required to reassess and demonstrate financial constraint for all projects in the LRTP.

Population and Employment Growth

As Table 12-5 reports, the Knik Arm Crossing project is expected to have little effect on the overall regional growth in terms of population and employment. By providing access to a large supply of vacant land in the Mat-Su, however, the Knik Arm Crossing would have an impact on the relative share of population, households, and jobs growth between the MOA and the Mat-Su. The impact of the bridge (on population and employment) would be slow at first, but would accelerate as the supporting infrastructure (roads, schools, and utilities) is developed. As a result of completion of the proposed bridge, the MOA is projected to lose

Table 12-5. Projected 2027 Population, Households, and Employment

	Without Knik Arm Crossing Project			With Knik Arm Crossing Project		
Area	Population	Households	Jobs	Population	Households	Jobs
Total Anchorage area	352,000	134,400	176,000	339,100	129,500	170,200
Total Mat-Su area	171,600	62,500	45,000	185,500	67,600	50,200
Total Region	523,600	196,900	221,000	524,600	197,100	220,400

Source: "Memorandum on the Economic and Demographic Impacts of a Knik Arm Bridge," University of Alaska Anchorage, Institute of Social and Economic Research, September 2005.

other words, no funds beyond the amount of federal and state money already allocated (Table 12-2) should be diverted to the Knik Arm Crossing.

Cost Estimates for Future Expansion

Traffic forecast and capacity analysis (for which the results discussed below are in 2005 dollars) indicates the need for an Ingra-Gambell connection, the addition of a lane to the bridge superstructure, and Mat-Su road improvements at some point in the future. Total anticipated future expansion costs are projected at $392 million based on preliminary engineering estimates. The Ingra-Gambell connection is estimated to cost $219 million, and the bridge deck lane addition is estimated to cost $130 million. The Mat-Su road upgrades are estimated at $43 million, but are not expected to be required within the LRTP planning horizon of 2027. Nevertheless, the financial feasibility model used by KABATA demonstrates surplus toll revenues available would be sufficient to pay for the Mat-Su road improvements. Projected cost information for expected future expansion requirements is provided in Table 12-3.

Proposed Funding for Future Expansion

The KABATA financial feasibility model shows that all potential future expansion requirements can be paid for from a combination of accumulated surplus toll revenues and toll revenue-backed financing if these additional improvements are completed in 2023. However, whether sufficient toll funds would be available to finance the Ingra-Gambell connection if it was needed earlier has not been analyzed. Table 12-4 shows jurisdictional allocation of anticipated funding sources between Anchorage and the Mat-Su in 2005 dollars for all anticipated future expansion requirements, including the Mat-Su road upgrades, which are included for illustrative purposes only.

Table 12-3. Future Expansion Costs

Component	Costs ($ millions)[a]		
	Anchorage	Mat-Su	Total
Mat-Su road upgrades	–	43.2	43.2
Bridge deck lane addition	64.8	64.8	129.5
Ingra-Gambell connector	219.2	–	219.2
Total	**284.0**	**108.0**	**391.9**

[a] All costs are in 2005 dollars.

Source: KABATA

Table 12-4. Future Expansion Funding

Component	Costs ($ millions)[a]		
	Anchorage	Mat-Su	Total
AMATS LRTP (pre-existing)[b]	26.0	–	26.0
Sources backed by toll revenue funding	257.9	108.0	365.9
Total	**283.9**	**108.0**	**391.9**

[a] All costs are in 2005 dollars.

[b] This funding is planned as part of the Glenn-Seward Highway connection.

Source: KABATA

Project Operations and Maintenance

In modeling the financial feasibility of the project, KABATA assumed that toll revenues would first be used to pay for operating and maintaining the crossing, the cost of collecting the tolls, and general and administrative expenses of KABATA. Any remaining revenues would then be used for debt service, returns to private equity, and investment in future expansion to serve growing

4,900 households (or 12,900 people) and 5,800 jobs to the Mat-Su that it would otherwise be expected to capture (by 2027).

In its "Memorandum on the Economic and Demographic Impacts of a Knik Arm Bridge" (September 2005), the University of Alaska Anchorage, Institute of Social and Economic Research, listed the following assumptions about the economic effects of the bridge that might influence transportation patterns in the region:

- A bridge results in a modest shift in basic sector activity from the MOA to the Point MacKenzie region of the Mat-Su. The sectors most likely to be affected are warehousing and other businesses that require large amounts of land. Contributing to the modest level of impact initially is the possibility that some workers at these jobs might commute from Anchorage.
- During the longer term, a modest shift in some other basic sector jobs to the Mat-Su, rather than the MOA, would be expected. Examples are jobs in tourism and recreation.
- Growth in the other basic industries in the Mat-Su, including mining and timber, would not be significantly affected by the bridge.
- The bridge would increase the attractiveness of commuting by workers living in the Mat-Su but working in the MOA. However, the increase would be limited by the number of MOA jobs that pay enough to support the cost of a commute.
- Most Anchorage workers in jobs with a wage high enough to consider commuting would continue to choose not to commute. The largest source of new commuters would result from separations. In other words, newly hired workers who are new to the region would be the most likely to choose to commute. Already employed workers would be less likely to consider a move.
- The growth of support jobs in the Mat-Su does not significantly increase the number of trips from the Anchorage market. (Only a limited number of MOA residents would make shopping trips to the Mat-Su.)
- Population growth in the Mat-Su would be constrained by the number of jobs there and the number of residents who commute to jobs outside the Mat-Su (primarily Anchorage).
- Increased access to developable land in the Mat-Su would not result in an absolute reduction in population in Anchorage. Some of the projected increase in population in the Greater Anchorage-Mat-Su region would choose to live in Anchorage.

Transportation Impacts of the Knik Arm Crossing on the Regional and Local Transportation System

The Knik Arm bridge would have a relatively modest impact on regional travel patterns and behavior. According to the information prepared by KABATA for this project, total vehicle miles traveled (VMT) and vehicle hours traveled (VHT) would increase with implementation of this project because of more travel occurring in the Mat-Su, reflecting longer trips necessitated by the more dispersed, rural development patterns. By the year 2030, the total VMT would increase by 480,513 vehicle miles or 4.8 percent, because of the bridge construction. A similar effect would be an increase in the amount of time spent in cars, from 250,000 vehicle hours without the bridge to 260,000 hours with the bridge, or 4 percent (Table 12-6).

The effect of the bridge on the development of other transportation options is probably negative

Table 12-6. Projected 2030 Regional Travel Impacts

Alternative	Vehicle Miles Traveled	Vehicle Hours Traveled	Total Fuel Use (gallons)[a]
No action alternative	9,987,629	250,000	514,826
Knik Arm Crossing Erickson Alternative[b]	10,468,142	260,000	539,595

[a] Fuel consumption estimates were based on 19.4 miles per gallon, the U.S. Environmental Protection Agency fleet average for 2005.

[b] Results for the Degan Alternative are virtually the same as the Erickson Alternative.

Source: HDR Alaska, Inc.

overall. Assuming that the land development pattern on the Mat-Su side of the bridge would be low density (the apparent assumption of the DEIS), establishment of a viable bus system would be unlikely. The effect on carpooling and vanpooling rates is less clear-cut. These types of ridesharing depend in part on the length of the trip and the ease of finding a sufficient number of persons who share the general origin and destination. Low-density development patterns that may occur in the newly opened areas of the Mat-Su would tend to discourage carpooling. On the other hand, the cost of bridge tolls would tend to encourage ridesharing.

The impact of the bridge on the Anchorage transportation system is more focused on particular MOA areas.

The regional model estimates prepared by HDR Alaska, Inc., predict that about 33,500 vehicles per day would cross the Knik Arm bridge by the year 2027. If this projection becomes reality, the vehicle volume would add a significant amount of traffic to the MOA roadway network. It is important to analyze the effect of this traffic on the existing and planned Anchorage transportation network in order to determine its impacts as well as the potential need and timing of roadway improvements required to accommodate the bridge traffic. According to the regional model results, the opening of the bridge does not seem to have a significant effect on the amount of traffic on the Glenn Highway coming into Anchorage, which would remain about the same with or without the bridge. Because the primary impact of the bridge traffic is expected to be in downtown Anchorage, the analysis focused on this area.

The following three scenarios were developed and analyzed:

Scenario 1—The Knik Arm bridge with the Ingra-Gambell connection in Anchorage as well as all roadway improvements recommended in the adopted AMATS 2025 LRTP.

Scenario 2—The Knik Arm bridge with an A-C Couplet roadway connection but no Ingra-Gambell connection; all roadway improvements recommended in the adopted AMATS 2025 LRTP are included.

Scenario 3—The Knik Arm bridge with only an A-C Couplet roadway connection (no Ingra-Gambell connection) and all 2025 LRTP improvements, except the Glenn-Seward Highway connection.

Scenario 1

According to the DEIS report prepared by KABATA, the Ingra-Gambell connection from Government Hill across Ship Creek to 3rd Avenue will be needed by the year 2023 to alleviate traffic congestion on the existing A-C Viaduct.

Figure 12-5 (included at the end of this chapter) shows the distribution of traffic that is projected to occur as a result of Scenario 1. Of the traffic coming over Ship Creek into Anchorage, 44 percent would be expected to travel over the A-C Viaduct and 56 percent over the new Ingra-Gambell connection. As a result, the A-C Viaduct in 2027 would still be heavily used, carrying about 25,850 trips per day (compared to a little more than 16,000 in 2005). Given the relatively rapid drop in traffic south of 6th Avenue, most of the bridge traffic on the A-C Couplet would be expected to be traveling to Downtown. The Ingra-Gambell connection to the Glenn-Seward Highway project makes that routing more efficient for travelers coming from Port McKenzie with destinations to other parts of the Anchorage Bowl outside of Downtown. Therefore, it appears that the Ingra-Gambell connection is an essential improvement needed to relieve the traffic congestion in the downtown core (described in Scenario 2).

An analysis conducted by HDR for the DEIS (see Table 12-7) indicates that the level of service for intersections in the downtown area would be at an acceptable level through 2030 under Scenario 1 (Figure 12-6).

Scenario 2

Scenario 2 explores the impact on the Anchorage roadway network of the Knik Arm bridge without the Ingra-Gambell connection over Ship Creek. In this scenario, the only route connecting the Knik Arm bridge to the Anchorage Bowl is the existing A-C Viaduct. Figure 12-7 shows an estimated 46,000 trips per day using the A-C Viaduct under this scenario. This traffic volume would nearly double the amount of traffic in the downtown area along the A-C Couplet between 3rd and 6th avenues. More traffic from the bridge would also pass through downtown streets through

Table 12-7. 2030 Peak Hour Level of Service

Intersection		Without Knik Arm Crossing		With Knik Arm Crossing	
		A.M. peak	P.M. peak	A.M. peak	P.M. peak
3rd Avenue	C Street	B	B	B	B
3rd Ave	A Street	B	B	B	B
Ocean Dock Road	Loop Road	B	B	B	B
5th Avenue	C Street	B	B	B	B
6th Avenue	A Street	B	B	B	B
5th Avenue	Gambell Street	B	B	B	B
6th Avenue	Ingra Street	B	B	C	C

Source: HDR Alaska, Inc.

the A-C Couplet to destinations in the midtown area. Higher traffic volumes would also occur in the downtown area between the A-C Couplet and the Glenn-Seward Highway corridor (formerly Ingra-Gambell Couplet) as Mat-Su travelers from the Port McKenzie area attempt to connect to the freeway system to travel to other parts of Anchorage. According to Figure 12 8, the eastern part of Downtown (between 3rd and 6th avenues) may experience an increase in congestion from the bridge opening.

Scenario 3

Scenario 3 explores the impact of the Knik Arm bridge on the Anchorage transportation network without either the Ingra-Gambell connection over Ship Creek or the Glenn-Seward Highway connection. The intent of this scenario was to examine the interdependencies between the Knik Arm bridge and the Glenn-Seward Highway connection. Figure 12-9 shows that without the Ingra–Gambell connection of the Knik Arm bridge project or the Glenn-Seward Highway improvements, the A-C Couplet would be among the highest volume arterials in the city, carrying more than 55,000 vehicles per day between 3rd Avenue (Downtown) and Northern Lights Boulevard (Midtown) by 2027. The A-C Couplet would carry about the same number of vehicles that the Ingra-Gambell Couplet carries today. Figure 12-10 shows an increase in congestion along the A-C Couplet, especially during the peak periods. Parts of eastern Downtown would also carry significant traffic volumes but less than would be projected under Scenario 2.

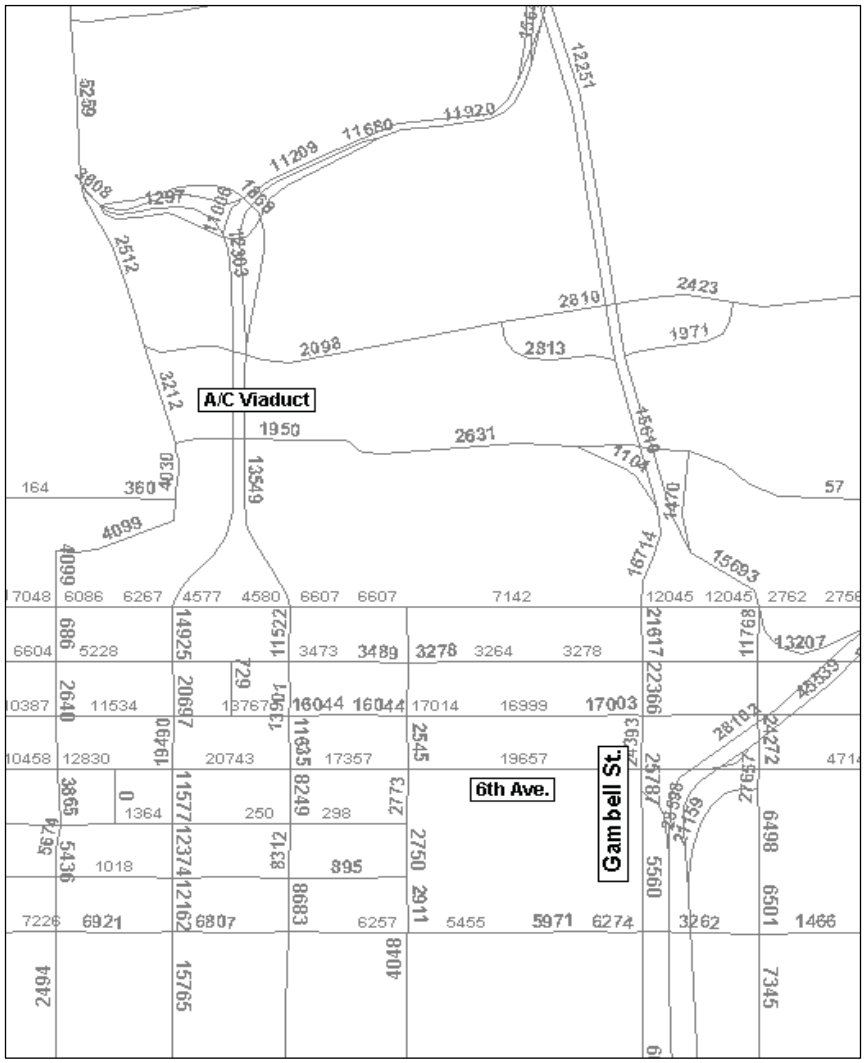
Conclusion

The Glenn-Seward Highway connection project would have, by far, the most significant impact on the reduction of traffic congestion in the Anchorage Bowl of any project contained in the LRTP. Without it, large areas of northeastern and central Anchorage will experience unacceptable level of congestion. The Glenn-Seward Highway project also has a very strong linkage to the proposed Knik Arm bridge project. Although many vehicles crossing the Knik Arm bridge would be traveling to Downtown, most would be traveling to destinations scattered throughout the Anchorage Bowl. A direct connection from the Knik Arm bridge to the freeway system through a new Ingra-Gambell connection over Ship Creek would be needed for these bridge-related trips.

Without a Knik Arm Ingra-Gambell connection and the Glenn-Seward Highway improvements, the traffic volumes traversing Downtown along the A-C Couplet would double by 2027. Furthermore, HDR estimates that 12 percent of total trips would be truck trips, which would further affect Downtown.

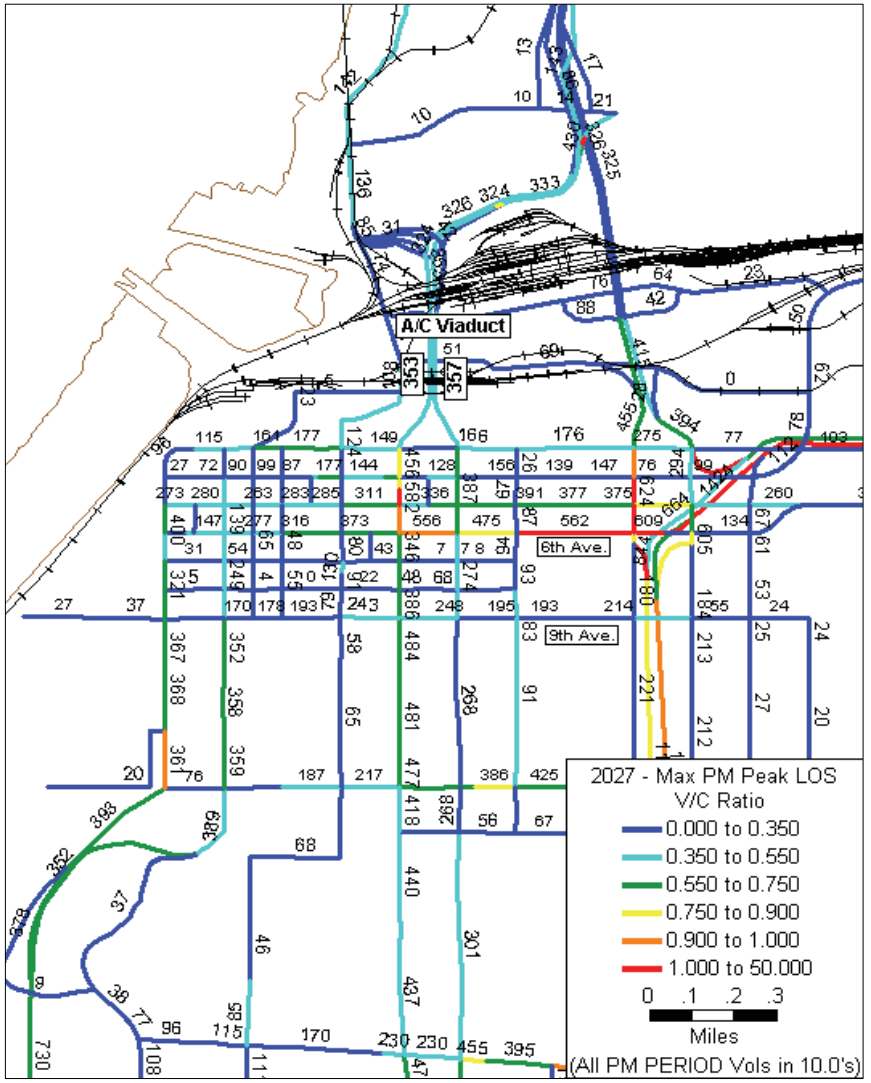
The total 2027 traffic using the A-C Couplet under Scenarios 2 and 3 (without the Ingra-Gambell connection) is projected to be more than 46,000 trips per day, which would create a congestion problem in downtown Anchorage. The construction of the Ingra-Gambell connection is expected to substantially relieve this congestion. However, the Ingra-Gambell connection would only manage to shift the congestion to the Ingra-Gambell Couplet

Figure 12-5. Scenario 1 – 2027 Annual Average Daily Traffic



Source: MOA Traffic Department

Figure 12-6. Scenario 1 – Maximum 2027 PM Peak Level of Service



Source: MOA Traffic Department

without the construction of the Glenn-Seward Highway connection.

The question remains, when should the Ingra-Gambell connection be built? To answer this question, KABATA has committed funding to begin the reconnaissance effort to analyze this issue once funding for the bridge and Anchorage landside connection is imminent.

Conditions

The Knik Arm Crossing is added to the Anchorage Bowl LRTP with the following conditions:

A. (1) The required air quality conformity analysis is completed, (2) the financial details of the bridge are solidified, and (3) the final environmental impact statement is released and the comments from the MOA, Mat-Su, the Alaska Railroad Corporation, and the public have been addressed.

B. No funding currently planned for implementation of the existing LRTP, beyond that currently authorized in Tables 12-2 and 12-4, will be used to support construction or maintenance of any element of the Knik Arm Crossing. In addition, no local funds will be used for construction or maintenance of any element of this project.

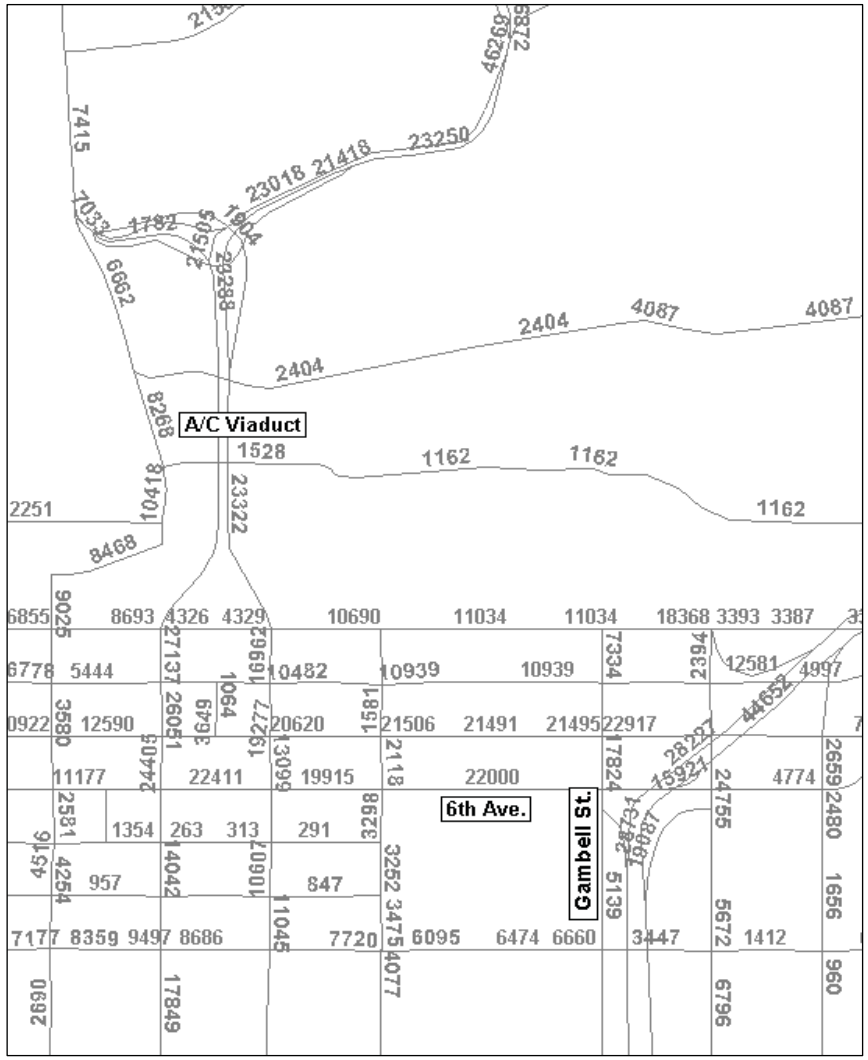
C. A neighborhood mitigation program, as described in this chapter, will be adopted. This program will protect the integrity of the Government Hill and other affected neighborhoods (using the best Context Sensitive Design practices) with the objective of enhancing and revitalizing these unique and historic neighborhoods.

D. No construction work will begin on the Anchorage landside bridge approaches until (1) the complete funding package is secured for the bridge and the Anchorage access connections and (2) the project design has been submitted for review through the established municipal design review process.

E. Recognizing that the Glenn-Seward Highway connection project and the Ingra-Gambell connection across Ship Creek are critical complementary projects linked to the Knik Arm Crossing, it is understood that, as part of the Crossing project, KABATA will fund the design and construction of the Ingra-Gambell connection in a manner to permit its opening as early as 2018 if needed. This process would require the reconnaissance/environmental phase of the Ingra-Gambell connection to start in 2008.

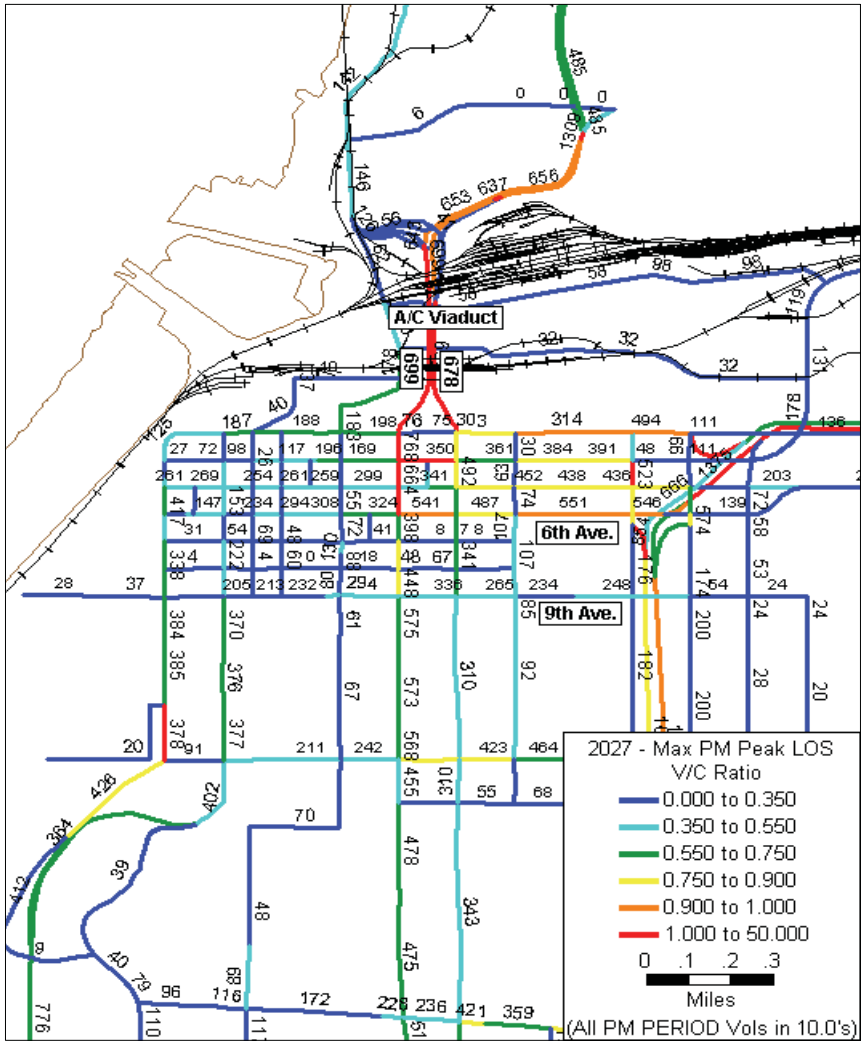
F. KABATA will fund the installation and operation of an air quality monitoring site to assess impacts in the vicinity of where the Knik Arm bridge traffic will combine with other A/C Couplet traffic in downtown Anchorage. The monitoring project will begin in advance of the bridge completion to assess before and after conditions for air pollutants of coarse and fine particulate matter and carbon monoxide. Monitoring will occur 1 year before and 1 year after construction.

Figure 12-7. Scenario 2 – 2027 Annual Average Daily Traffic



Source: MOA Traffic Department

Figure 12-8. Scenario 2 – Maximum 2027 PM Peak Level of Service



Source: MOA Traffic Department

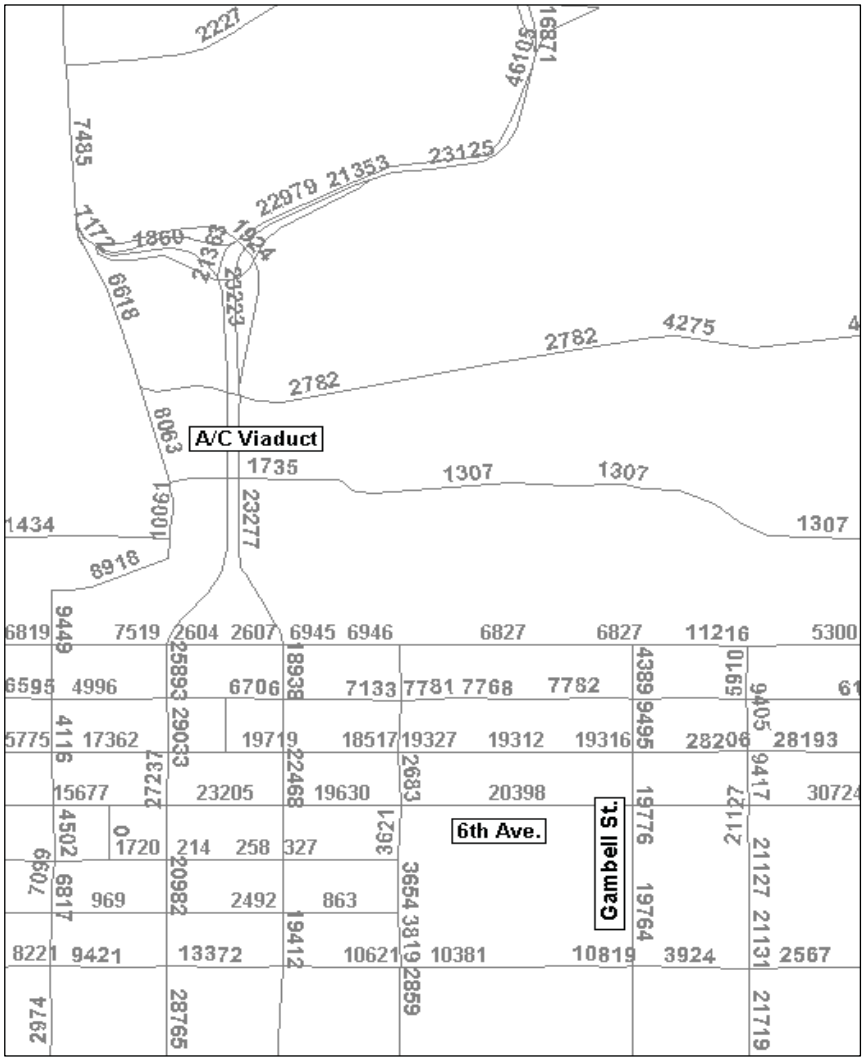
Additional Revisions to the Anchorage Bowl 2025 LRTP

The following pages show the revisions to pages of the Anchorage Bowl 2025 Long-Range Transportation Plan.

Blue text indicates revised or new text.

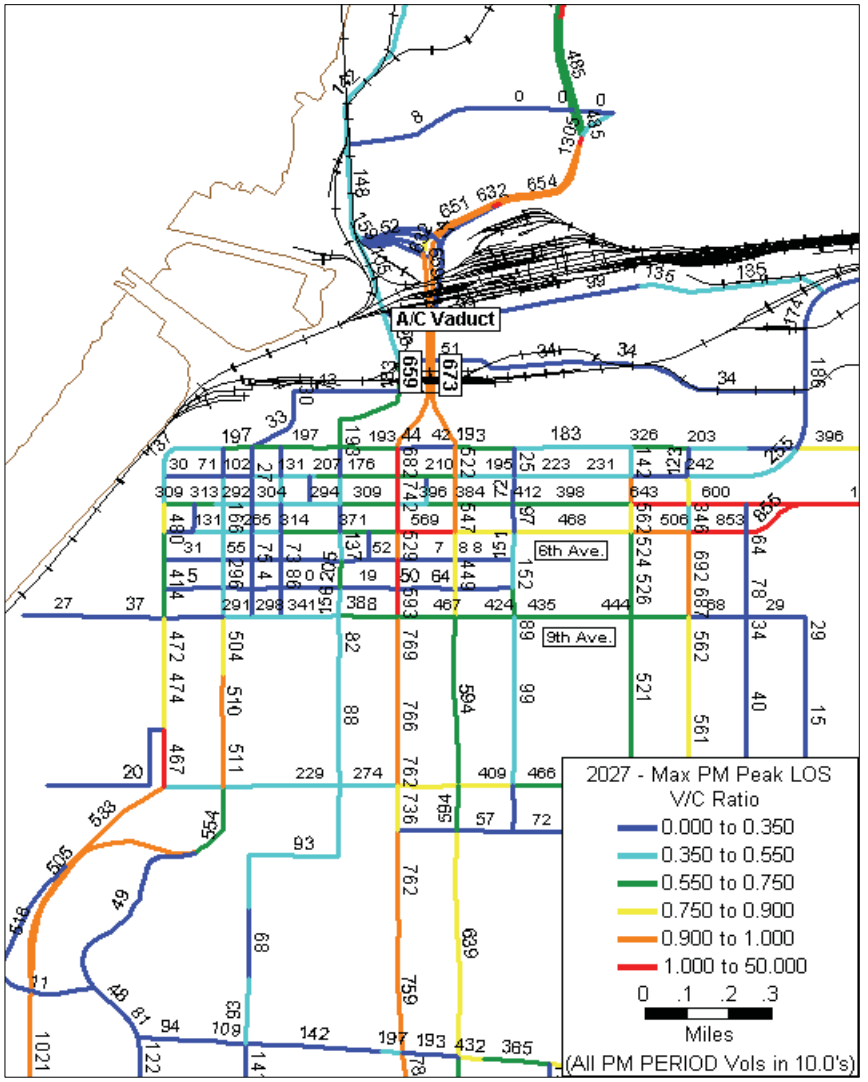
Deleted text is shown in a "strikethrough" font. (~~Sample strikethrough font.~~)

Figure 12-9. Scenario 3 – 2027 Annual Average Daily Traffic



Source: MOA Traffic Department

Figure 12-10. Scenario 3 – Maximum 2027 PM Peak Level of Service



Source: MOA Traffic Department

Table 6-2. Projected Household Growth by Planning Area, 2002–2025

Planning Area	Household Growth	Percentage of Total Growth
Central	5,090	14.2
Northeast	7,830	21.9
Northwest	7,520	21.0
Southeast	3,070	8.6
Southwest	4,180	11.7
Chugiak-Eagle River	8,100	22.6
Total	**35,790**	**100.0**

Note:
Changes in growth distribution caused by the Knik Arm Crossing project are found in Chapter 12.

A substantial amount of housing also was allocated to the redevelopment areas identified in the Anchorage 2020 comprehensive plan. Residential areas in redevelopment areas near the three major employment areas (Downtown, Midtown, and the University-Medical District) is predicted to attract more than 3,120 new housing units, and an additional 1,000 housing units are forecast within the Central Business District of Downtown (in an area representing only a small part of the downtown redevelopment area identified in Anchorage 2020).

Housing development and increased household densities along the four transit-supportive development corridors (Arctic, DeBarr, Spenard/Jewel Lake, and Lake Otis) is also predicted. These corridors are expected to attract more than 14,000 new housing units.

Figure 6-7 illustrates that half of the employment growth from 2002 to 2025 is forecast to occur in the three major employment centers identified in Anchorage 2020. The largest amount of employment growth is allocated to Midtown, where more than 9,840 new jobs are projected by 2025 (17 percent of the total). Effects of this new development will result in more concentrated employment with densities closely matching the densities in Downtown. The higher employment density, combined with a more diversified mix of office and retail uses, will help to encourage carpooling and transit use in the midtown area, as well as to enhance the attraction of Midtown as an employment and retail destination.

A large share of the employment growth is projected to occur in the downtown redevelopment area, where the number of jobs is expected to increase by nearly 5,225 (13 percent of the total), 3,345 of which are in the Central Business District. Employment in the University-Medical District redevelopment area is expected to increase by nearly 3,310 jobs (7 percent of the total).

Considering the Knik Arm Crossing

The projections shown in Table 6-1 and discussed in this chapter do not take into account the potential effects of a Knik Arm bridge on regional population and employment distribution. During preparation of the most recent ISER population and employment projections, a preliminary analysis was conducted to test the sensitivity of regional population and employment distribution to the opening of a Knik Arm crossing in the year 2009.

Results indicate that a bridge would reduce the growth of the Anchorage population by about 16,000, or 4 percent, by 2030. This shift would start slowly and increase in the later years of the planning period, closer to 2027. Opening a Knik Arm bridge likely would have less effect on employment growth in Anchorage, with about 6,000 jobs expected to go elsewhere in the region.

It should be noted that the change in growth rates is very sensitive to the year that the bridge is opened. The anticipated date is 2010; however, the date is subject to many variables. Population and employment changes that could result from the Knik Arm bridge have been analyzed as part of the Environmental Impact Statement for the project. On the basis of those findings, the Knik Arm Crossing project has been amended to be included in the LRTP. Details on the project can be found in Chapter 12.

Table 6-1. Projections for 2025 Regional Growth

Area	2002	2025 Forecast	Numeric Change	2002 – 2025 Growth (%)
Population				
Anchorage Bowl	237,160	302,330	65,170	28
Chugiak-Eagle River	31,540	58,870	27,330	87
Mat-Su Borough	65,800	126,600	60,800	92
Total	**334,500**	**487,800**	**153,300**	**46**
Households				
Anchorage Bowl	84,620	113,060	28,440	34
Chugiak-Eagle River	10,580	18,680	8,100	77
Mat-Su Borough	22,800	42,100	19,300	85
Total	**118,000**	**173,840**	**55,840**	**47**
Employment (includes self employed)				
Anchorage Bowl	150,660	186,570	35,910	24
Chugiak-Eagle River	3,980	7,190	3,210	81
Mat-Su Borough	13,700	24,200	10,500	77
Total	**168,340**	**217,960**	**49,620**	**30**

Notes:
Changes in growth distribution caused by the Knik Arm Crossing project are found in Chapter 12.

The specific data for Chugiak-Eagle River and the Anchorage Bowl were derived from total MOA forecasts based on the 1993 *Chugiak-Eagle River Comprehensive Plan.*

Military base housing and population are included in the Anchorage Bowl figures.

Source: ISER data and projections in *Draft Land Use Forecast Report*, *Anchorage 2025 Household and Employment Forecast and Allocation for the 2004 Long-Range Transportation Plan*, prepared by the MOA Transportation Planning Division in July 2004.

and 35,910 new jobs by 2025. The rest of the region is expected to gain about 27,400 new housing units and only 13,710 new jobs by 2025.

Regional population growth through 2025 can be seen in Figure 6-1. The Mat-Su Valley will experience the most dramatic population growth (92 percent), followed by Chugiak-Eagle River (87 percent), and the Anchorage Bowl (28 percent).

Employment in both the Mat-Su Borough and Chugiak-Eagle River is expected to consist largely of local jobs to meet demand of the growing local populations. In 2025, the Anchorage Bowl will remain the dominant source of employment for the Southcentral region.

In the past few decades, the economy of the Mat-Su Borough has become closely linked to the MOA economy. That connection relies heavily on residents commuting from the Mat-Su Borough to employment in Anchorage. Chugiak-Eagle River residents also travel to Anchorage for jobs. All commuters from the Mat-Su Borough and Chugiak-Eagle River must use the Glenn Highway to get into the Anchorage Bowl. The expected number of commuters will continue to increase, and Figure 6-2 charts the projected Glenn Highway commuters from the Mat-Su Borough and Eagle River to employment sites in the Anchorage Bowl.

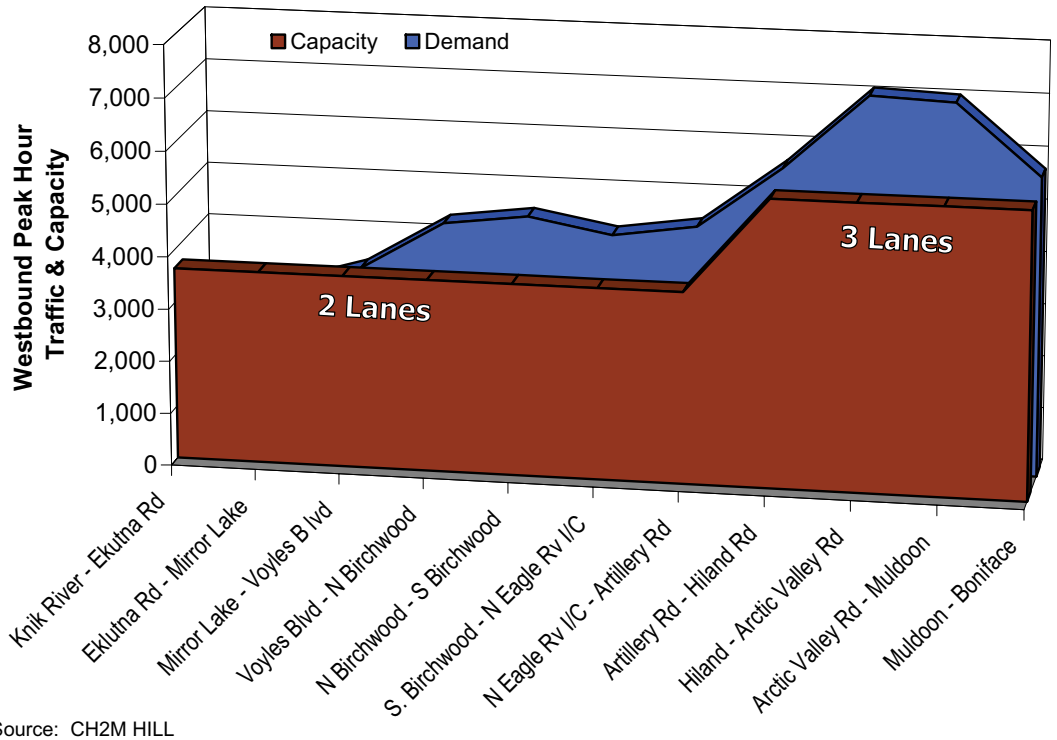
MOA Employment by Industry Sector

Estimating employment by industry sector is an important step in forecasting future travel demand. Each industry sector has characteristics relevant to choices that affect facility location and space requirements and are affected by applicable land use policies and regulations.

The Alaska Department of Labor recognizes 13 industry sectors:

- Health Services
- Universities
- Schools
- Government
- Services
- Finance, Insurance, and Real Estate
- Retail Trade

Figure 7-33. Managing Demand and Available Capacity on the Glenn Highway, 2025 Morning Peak Hour



Source: CH2M HILL

River provide opportunity for commuters there to use rail service also. Service is assumed to expand 30 percent by 2015 and 75 percent by 2025. Coordinating bus service in the Anchorage Bowl enabling train commuters to get to destination sites beyond walking distance from the rail terminal is assumed to be available.

Table 7-11 summarizes estimated outcomes for commuter rail services between Wasilla and Anchorage between 2005 and 2025. Rail service may take from 600 to 1,750 vehicle trips off the Glenn Highway, mostly commuters in peak hours. Net public costs (subsidy) to support the estimated rail service range from $2.66 million to $4.87 million per year (in 2004 dollars). The subsidy works out to be almost $10 per passenger on the optimistic end and more than $18 per passenger on the pessimistic end.

For commuter rail service to be implemented, a number of steps would be required. Foremost is determination of funding responsibilities, mechanisms, and sources. In parallel with the funding steps, creation of an institutional structure and negotiation of management, operations, and sponsorship agreements among the several affected parties is required. Other prerequisite activities include project development planning; engineering, and environmental analyses; operations detailing; equipment procurement and customization; station and facilities development; service specifications; patronage, pricing, marketing, and revenue projection refinements; connector transit service integration arrangements; and related multi-government coordination.

Conclusions and Approaches for Enhancing Regional Connections

Clearly, major issues are related to regional connection facilities. The rapid growth in the Mat-Su Borough and Chugiak-Eagle River will put significant strain on the Glenn Highway in the absence of other actions. A Knik Arm crossing would relieve some traffic pressure on the Glenn Highway~~, but many unknowns still characterize the Knik Arm crossing proposal~~.

Commuter rail implementation could assist in the Glenn Highway corridor. See Table 7-11. And new regional bus service could contribute. Its initiation would require development of funding resources and mechanisms, as well as many of the same development steps noted above for commuter rail service.

The solution to improving regional connections lies in greatly improved transit service, spot improvements to relieve traffic bottlenecks,

Regional Connections

Railroad tracks and only two road connections link Anchorage by land to the north and south, serving freight distribution and travelers. Components of the National Highway System, the Glenn Highway and Seward Highway serve northbound and southbound travel, respectively. Major improvements on these two highways are incorporated in LRTP recommendations (Chapter 8). Other key access roads connect these regional highways to both TSAIA and the Port of Anchorage.

The community is considering ~~two~~ other regional connection concepts, including commuter rail service.

~~Knik Arm Crossing Studies and Implications~~

~~Only two roadways currently link Anchorage to elsewhere, but planning studies are in process for a bridge across the Knik Arm to the Mat-Su Borough. Currently the Knik Arm crossing project is in an environmental analysis phase; information about its alignment, configuration, components, costs, and other features are not yet known.~~

~~Critical questions and policy decisions will be addressed after more information has been gathered. How would a Knik Arm crossing affect the land use and growth patterns envisioned by Anchorage 2020? How would it affect the Anchorage housing market? Will broader urban sprawl be encouraged and enabled by transportation access to a large expanse of undeveloped land?~~

~~The magnitude of traffic or impacts of Knik crossing traffic on the LRTP program cannot be identified at this time. The potential cost burden and community impacts of supplemental projects needed to tie the crossing project into the Anchorage road network also cannot be anticipated at this time.~~

~~All of these topics need to be covered and documented in the federally mandated environmental analysis under way. The LRTP endorses completion of environmental and engineering studies and documentation for the Knik Arm crossing concept. Information about the alignment, configuration, components, costs, funding, and other features of the project can then be used by the MOA and AMATS to support future decisions.~~

Regional Public Transportation Services

The Glenn Highway corridor links Anchorage with Chugiak-Eagle River and the Mat-Su Borough. The only regional public transportation service operating regularly between the Mat-Su Borough and Anchorage is the MASCOT bus service. It offers two trips a day from the Mat-Su Borough.

The Glenn Highway corridor is unusual in that there is no alternative or back-up route in case of crashes or overcrowding. During commute hours, projected 2025 travel demand will exceed the existing corridor capacity, unless remedies are implemented. Figure 7-33 shows the existing road capacity and projected traffic demand along the Glenn Highway corridor from Eklutna Road to Boniface Road. Traffic demand on the Glenn Highway corridor will exceed capacity in 2025 from Mirror Lake to Boniface Road.

Commuter Rail Services

The Alaska Railroad mainline runs parallel to the Glenn Highway from Wasilla and other communities, providing the prospect of a commuter rail option for travel into and out of Anchorage. Feasibility of commuter rail service between the Anchorage Bowl and the Mat-Su Borough has been studied. (One analysis is *South Central Rail Network Commuter Study and Operation Plan*, by Wilbur Smith and Associates et al., January 2002.) Although there are advocates for implementation of a commuter rail service, the recent feasibility studies do not present a compelling case.

Two studies conducted in 2000 produced rider commuter rail rider estimates for 2005 of 152,000 to 190,000 annual riders for weekday service, or 600 to 750 riders per average weekday. For 2015, rail patronage was forecast at 230,000 annual riders, equivalent to about 900 riders per weekday.

Commuter rail passenger estimates were predicated on two morning trains from Wasilla to Anchorage and two trains from Anchorage to Wasilla in the afternoon, plus limited off-peak service. Travel by rail from Wasilla to the Ship Creek Intermodal Terminal in Anchorage would require about 1 hour. Stations in Chugiak-Eagle

provide more direct access from the freeway to the airport.

Another road improvement, connection of Dowling and Raspberry roads, will enhance TSAIA access from the south.

Port of Anchorage Access Improvements

Truck access to and egress from the Port of Anchorage are significantly improved by projects linking the Port of Anchorage to the Glenn and Seward highways.

National Highway System Continuity and Improvements

The LRTP materially improves National Highway System connectivity and design consistency through Anchorage. The Glenn–Seward highways connection closes a long-standing continuity gap and establishes a limited-access corridor serving the entire MOA and region.

The Seward Highway is upgraded to six lanes north of O'Malley Road to accommodate increasing demand. Additionally, a system interchange linking the Seward Highway and Minnesota Drive, further strengthens the National Highway System connectivity. All of these projects improve access and connections with the port and airport intermodal terminals.

Knik Arm Crossing

The LRTP adopted in December 2005 endorsed completion of ongoing environmental and engineering studies for the Knik Arm crossing concept. These studies produced information about the alignment, configuration, components, costs, and other features to support inclusion of the project in the LRTP. Based on completion of the necessary environmental documents, the crossing has been included in the LRTP by amendment. Details of the project can be found in Chapter 12 and the published environmental documents.

Commuter Rail Services

Commuter rail between the Mat-Su Borough and the Anchorage Bowl is another potential travel option. As recommended transit improvements are implemented, they will provide an efficient network for commuter rail travelers to make connections that will enhance the viability of commuter rail. The LRTP endorses future studies of the feasibility and funding of commuter rail service between the Mat-Su Borough and Anchorage.

Anchorage and Mat-Su Borough Collaboration on Common Interests

A convergence of physical growth and common interests is occurring between the MOA and the Mat-Su Borough. The two jurisdictions together house the majority of the population and employment in the state. Travel interactions and economic interest argue for collaboration on a number of fronts. As the urban region continues to grow, pressure will mount for urban infrastructure funding. Collaboration in regional planning and a unified voice on state funding issues should be supported by both jurisdictions.

Congestion (Mobility) Management

The crux of our transportation network congestion problem is coping with weekday surges that occur during AM and PM weekday commute hours. Congestion arises where there is more traffic than there is corresponding road capacity. For most hours of the day, our transportation network capacity is adequate and travel is relatively unrestricted.

Alternatives to Building More Capacity

Adding road and transit capacity cannot be the sole strategy for addressing transportation needs. Management strategies can complement capacity expansion projects and offer other ways to make transportation more efficient, more flexible, and less intrusive. They include optimizing the operating performance of the transportation network, creating more travel options, carefully managing road work schedules to minimize travel disruption, increasing operations efficiency, and managing demand to conserve and influence traveler behavior. Collectively, these strategies can relieve stress on the available capacity in peak commute hours and moderate travel impacts.

Managing the System

Management and operation of our current transportation system should be made as efficient as possible. This step should be taken along with investments in new projects. Performance metrics and monitoring for traffic operations and transit to make them as efficient as possible should be a continuing function.

Figure 8-1. Recommended Road Projects

Northwest Anchorage

- Spenard Road and Fireweed Lane projects help create neighborhood friendly commercial areas.
- Enhancements to freight routes in the Ship Creek area improve freight movement access to and from the Port of Anchorage.
- Minnesota Drive and Tudor Road interchange and Minnesota improvements lessen congestion in these key corridors and transition freeway roadway to major arterial roadways.
- Knik Arm Crossing project, a National Highway System route connection north to the Matanuska-Susitna Borough (Mat-Su), improves regional transportation infrastructure and connectivity for the movement of people, freight, and goods to, from, and between Anchorage, the Mat-Su, and Interior Alaska and between regional airports, ports, hospitals, and fire, police, and other entities supporting emergency response and evacuation.

Northeast Anchorage

- The Glenn-Seward highway connection effectively carries traffic from the Glenn Highway to Downtown, Midtown, and University-Medical District area, removing traffic from local streets.
- Lake Otis Parkway improvements and connection to the Glenn Highway relieve congestion, improve pedestrian and transit movement, and safely connect pedestrians to parks, trails, and retail areas.
- Tudor Road Congestion Management Plan reduces traffic friction and provides safer pedestrian movement and better transit operations.
- Muldoon Road landscaping and pedestrian improvements enhance travel alternatives and transit use, as well as opportunities for beautification.

Southwest Anchorage

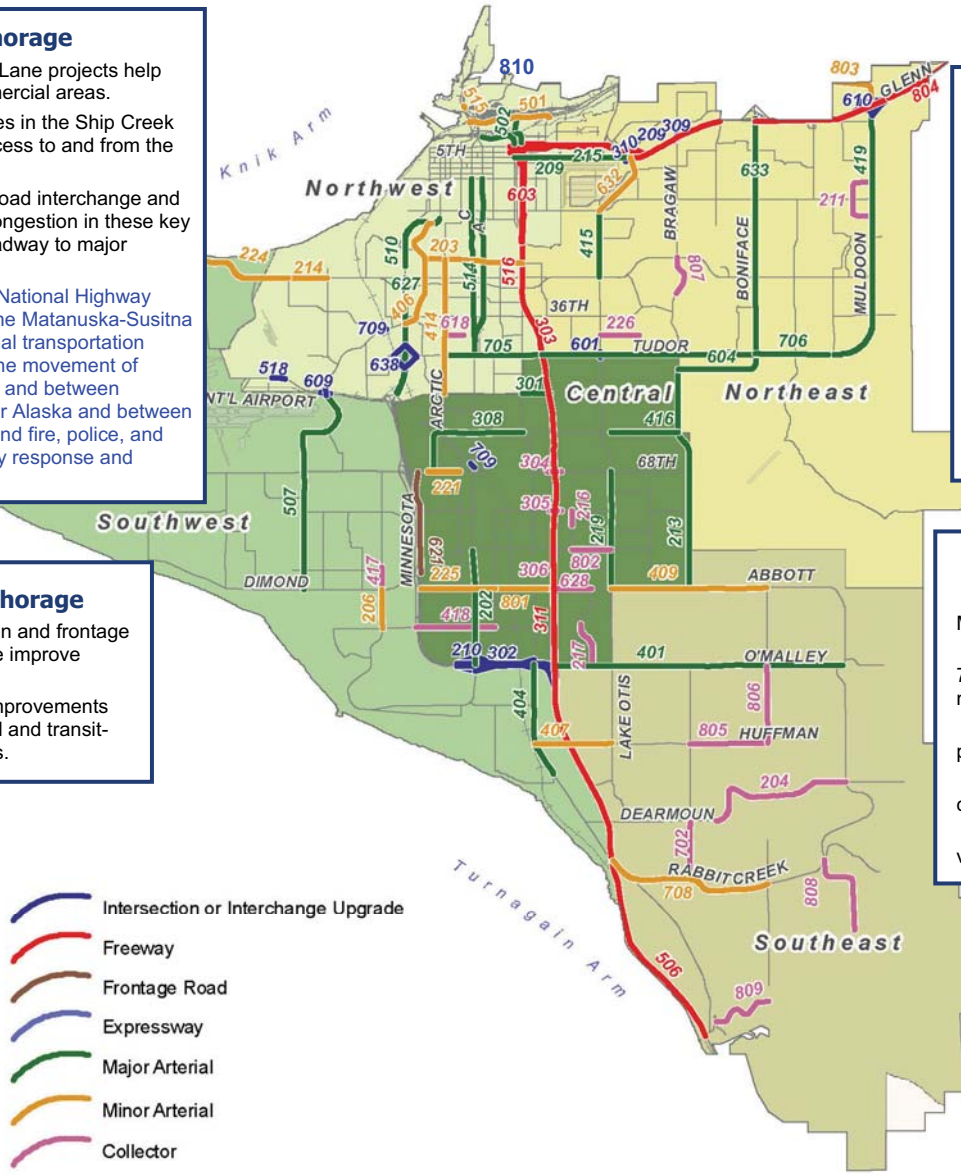
- Northwood extension and frontage roads on Minnesota Drive improve north-south connectivity.
- Jewel Lake Road improvements help create neighborhood and transit-friendly commercial areas.

Central Anchorage

- Dowling Road extension from Abbott Loop Road to Minnesota Drive improves east-west travel options.
- Connectivity under the Seward Highway at 92nd, 76th, and 68th avenues offers more route choices to midtown and downtown destinations.
- C Street extension offers connectivity for cars, transit, pedestrians, and bicyclists.
- Extensions of 92nd and 100th avenues improve connectivity and freight movement.
- Seward Highway improvements handle high traffic volume in the corridor.

Southeast Anchorage

- Elmore Road extension improves connectivity to several schools and assists emergency response and fire safety on the Hillside.
- Predominant east-west arterials are upgraded to meet demand, and missing links are added.



Source: CH2M HILL

The numbers on the map identify specific projects in Table 8-1.
Project 810, the Knik Arm Crossing, which runs from the AMATS boundary north of the Port of Anchorage, tying into the Anchorage roadway network at Loop Road and Gambell and Ingra streets, was added by amendment. Details of the project are found in Chapter 12.

Table 8-1. Recommended Road Improvement Projects

Project Number	Facility Name	From	To	Project Purpose and Description
Short-Term Projects (2006–2015)[b] (continued)				
507	Jewel Lake Rd.	Dimond Blvd.	International Airport Rd.	Reconstruct Jewel Lake to operate as a 2 lane with center turn lane; **Purpose:** Maintenance and safety; **Facility class:** Major arterial (3); **Length of project:** 2.9 miles; **Length of new sidewalk:** 2.9 miles; **Length of new pathway:** 2.9 miles; **Estimated cost:**[a] $19.9; **Funding source:** Bond; **Linked project(s):** 640.
603	Glenn Hwy./Seward Hwy. Connection	Glenn Hwy./Bragaw St.	Seward Hwy./Tudor Rd.	Construct freeway connection between Airport Heights Rd. and 36th Ave.; includes interchanges at Airport Heights Rd. and 36th Ave., freeway access and egress ramps elsewhere along the alignment; depressed segments of freeway that include the construction of bridges and decking above freeway for cross streets, community amenities, and redevelopment over highway airspace (see the section in this chapter titled Building the Glenn-Seward Highway Connection" for further discussion); **Purpose:** Circulation, access, and freight; **Facility class:** Freeway (1) and Ramps (7 & 8); **Length of project:** 4.9 miles; **Length of new sidewalk:** 4.9 miles; **Length of new pathway:** 4.9 miles; **Estimated cost:**[a] $581; **Funding source:** TIP/National Highway System; **Linked project(s):** 209, 215, 303, 309, and 502.
604	48th Ave./Boniface Pkwy. Extension	48th Ave./Bragaw Rd.	Boniface Pkwy./Tudor Rd.	Add new facility—extend Boniface Pkwy. as an expressway parallel to Tudor Rd. connecting at the intersection of 48th Ave. and Bragaw Rd.; **Purpose:** Circulation and access; **Facility class:** Major arterial (3); **Length of project:** 1.2 miles; **Length of new sidewalk:** 1.2 miles; **Length of new pathway:** 1.2 miles; **Estimated cost:**[a] $13.9; **Funding source:** TIP; **Linked project(s):** 213, 416, and 633.
601	Lake Otis Pkwy./ Tudor Rd. Intersection	Lake Otis Pkwy.	Tudor Rd.	Add left- and right-turn lanes where needed to improve capacity and efficiency of existing intersection; finished configuration will have 2 left-turn lanes and one free right-turn lane at each approach; **Purpose:** Circulation and access; **Facility class:** Not applicable; **Length of project:** Not applicable; **Length of new sidewalk:** 0 miles; **Length of new pathway:** 0 miles; **Estimated cost:**[a] $10; **Funding source:** Bond/TIP; **Linked project(s):** 705 and 706.
618	40th Ave. Extension	Arctic Blvd.	Eureka St.	Add new facility—extend 40th Avenue from Arctic Blvd. to Eureka St.; **Purpose:** Capacity; **Facility class:** Collector (5); **Length of project:** 0.4 mile; **Length of new sidewalk:** 0.4 mile; **Length of new pathway:** 0.4 mile; **Estimated cost:**[a] $2.7; **Funding source:** Bond; **Linked project(s):** None.
628	92nd Ave./Academy Dr. Extension	Brayton Dr.	Abbott Rd.	Add new facility—extend 92nd Avenue from Brayton Dr. to Abbott Rd.; **Purpose:** Circulation and access; **Facility class:** Collector (5); **Length of project:** 0.45 mile; **Length of new sidewalk:** 0.45 mile; **Length of new pathway:** 0.45 miles; **Estimated cost:**[a] $4; **Funding source:** TIP; **Linked project(s):** None.
633	Boniface Pkwy. Access Management	Tudor Rd.	Glenn Hwy.	Add access management and related local circulation access to preserve capacity on Boniface Pkwy; **Purpose:** Capacity; **Facility class:** Expressway (2); **Length of project:** 3.1 miles; **Length of new sidewalk:** 3.1 miles; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $20; **Funding source:** TIP; **Linked project(s):** 604.

provide more direct access from the freeway to the airport.

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Table 8-1. Recommended Road Improvement Projects

Project Number	Facility Name	From	To	Project Purpose and Description
Short-Term Projects (2006–2015)[b] (continued)				
808	Mountain Air Dr.	Rabbit Creek Rd.	E. 164th Ave.	Add new facility—extend Mountain Air Dr. from Rabbit Creek Rd. to E. 164th Ave. (extended); **Purpose:** Circulation and access; **Facility class:** Collector; **Length of project:** 1 mile; **Length of new sidewalk:** 0 mile; **Length of new pathway:** 1 mile; **Estimated cost:** To be determined; **Funding source:** To be determined; **Linked project(s):** None.
809	Unnamed (Heritage Land Bank/Mental Health Trust/Private)	Goldenview Dr.	Potter Valley Rd./Old Seward Hwy.	Add new facility from Goldenview Dr. to Potter Valley Rd./Old Seward Hwy.; **Purpose:** Circulation and access; **Facility class:** Collector; **Length of project:** 1 mile; **Length of new sidewalk:** 0 mile; **Length of new pathway:** 1 mile; **Estimated cost:** To be determined; **Funding source:** To be determined; **Linked project(s):** None.
810	Knik Arm Crossing	Matanuska-Susitna Borough near Point MacKenzie	3rd Ave. at Gambell and Ingra streets	Add new bridge facility across Knik Arm with associated roads connecting to the Anchorage roadway network (as noted in phases below); **Purpose:** Access, circulation, and freight. **Facility class:** National Highway System route—freeway/major arterial; **Phase 1 Length of project:** 6.1 miles, from Matanuska-Susitna Borough side of Knik Arm to East Loop Road just north of the A-C Viaduct (southern Phase 1 limit); **Ultimate Buildout Length of project:** 6.8 miles, from Matanuska-Susitna Borough side of Knik Arm to Ingra-Gambell streets/viaducts at 3rd Ave. (Phase 2);[1] **Length of new sidewalk:** 6.1 miles;[2] **Estimated cost:** $506.1 for Phase 1 and $348.7 for Phase 2 Anchorage side;[3] **Funding source:** National Highway System, State of Alaska, toll-backed bonds, Public Private Partnership, Transportation Infrastructure Finance and Innovation Act (TIFIA), tolls; **Linked project(s):** 502 [1] Phase 2 is the construction of the Ingra-Gambell streets/viaducts to 3rd Ave. from Government Hill. [2] Sidewalks are most likely to be completed in Phase 2. [3] Estimated costs are for the Anchorage side only.
Long-Term Projects (2016–2025)				
302	Seward Hwy./O'Malley Rd. Interchange	Old Seward Hwy.	Seward Hwy.	Add freeway system interchange at Seward Hwy. and O'Malley Rd., and interchange at Old Seward Highway and O'Malley Rd.; **Purpose:** Circulation, access, and freight; **Facility class:** Ramps (7&8); **Length of project:** 3.9 miles; **Length of new sidewalk:** 3.9 miles; **Length of new pathway:** 3.9 miles; **Estimated cost:**[a] $60.6; **Funding source:** TIP; **Linked project(s):** 210 and 311.
311	Seward Hwy.	O'Malley Rd.	Rabbit Creek Rd.	Add ramp and pedestrian facility improvements from O'Malley Rd. to Rabbit Creek Rd.; **Purpose:** Circulation, access, and freight; **Facility class:** Freeway (1); **Length of project:** 3 miles; **Length of new sidewalk:** 3 miles; **Length of new pathway:** 3 miles; **Estimated cost:**[a] $9.5; **Funding source:** State general fund; **Linked project(s):** 303.
501	Whitney Rd.	North C St.	Post Rd.	Upgrade Whitney Rd. to urban industrial standards; may include relocation of the Whitney Rd.; **Purpose:** Maintenance, safety, and freight; **Facility class:** Collector (5); **Length of project:** 1.05 miles; **Length of new sidewalk:** 1.05 miles; **Length of new pathway:** 1.05 miles; **Estimated cost:**[a] $7; **Funding source:** TIP; **Linked project(s):** 502; **Priority:** Long term (2016-2025)

Table 8-1. Recommended Road Improvement Projects

Project Number	Facility Name	From	To	Project Purpose and Description
Short-Term Projects (2006–2015)[b] (continued)				
507	Jewel Lake Rd.	Dimond Blvd.	International Airport Rd.	Reconstruct Jewel Lake to operate as a 2 lane with center turn lane; **Purpose:** Maintenance and safety; **Facility class:** Major arterial (3); **Length of project:** 2.9 miles; **Length of new sidewalk:** 2.9 miles; **Length of new pathway:** 2.9 miles; **Estimated cost:**[a] $19.9; **Funding source:** Bond; **Linked project(s):** 640.
603	Glenn Hwy./Seward Hwy. Connection	Glenn Hwy./Bragaw St.	Seward Hwy./Tudor Rd.	Construct freeway connection between Airport Heights Rd. and 36th Ave.; includes interchanges at Airport Heights Rd. and 36th Ave., freeway access and egress ramps elsewhere along the alignment; depressed segments of freeway that include the construction of bridges and decking above freeway for cross streets, community amenities, and redevelopment over highway airspace (see the section in this chapter titled Building the Glenn-Seward Highway Connection" for further discussion); **Purpose:** Circulation, access, and freight; **Facility class:** Freeway (1) and Ramps (7 & 8); **Length of project:** 4.9 miles; **Length of new sidewalk:** 4.9 miles; **Length of new pathway:** 4.9 miles; **Estimated cost:**[a] $581; **Funding source:** TIP/National Highway System; **Linked project(s):** 209, 215, 303, 309, and 502.
604	48th Ave./Boniface Pkwy. Extension	48th Ave./Bragaw Rd.	Boniface Pkwy./Tudor Rd.	Add new facility—extend Boniface Pkwy. as an expressway parallel to Tudor Rd. connecting at the intersection of 48th Ave. and Bragaw Rd.; **Purpose:** Circulation and access; **Facility class:** Major arterial (3); **Length of project:** 1.2 miles; **Length of new sidewalk:** 1.2 miles; **Length of new pathway:** 1.2 miles; **Estimated cost:**[a] $13.9; **Funding source:** TIP; **Linked project(s):** 213, 416, and 633.
601	Lake Otis Pkwy./ Tudor Rd. Intersection	Lake Otis Pkwy.	Tudor Rd.	Add left- and right-turn lanes where needed to improve capacity and efficiency of existing intersection; finished configuration will have 2 left-turn lanes and one free right-turn lane at each approach; **Purpose:** Circulation and access; **Facility class:** Not applicable; **Length of project:** Not applicable; **Length of new sidewalk:** 0 miles; **Length of new pathway:** 0 miles; **Estimated cost:**[a] $10; **Funding source:** Bond/TIP; **Linked project(s):** 705 and 706.
618	40th Ave. Extension	Arctic Blvd.	Eureka St.	Add new facility—extend 40th Avenue from Arctic Blvd. to Eureka St.; **Purpose:** Capacity; **Facility class:** Collector (5); **Length of project:** 0.4 mile; **Length of new sidewalk:** 0.4 mile; **Length of new pathway:** 0.4 mile; **Estimated cost:**[a] $2.7; **Funding source:** Bond; **Linked project(s):** None.
628	92nd Ave./Academy Dr. Extension	Brayton Dr.	Abbott Rd.	Add new facility—extend 92nd Avenue from Brayton Dr. to Abbott Rd.; **Purpose:** Circulation and access; **Facility class:** Collector (5); **Length of project:** 0.45 mile; **Length of new sidewalk:** 0.45 mile; **Length of new pathway:** 0.45 miles; **Estimated cost:**[a] $4; **Funding source:** TIP; **Linked project(s):** None.
633	Boniface Pkwy. Access Management	Tudor Rd.	Glenn Hwy.	Add access management and related local circulation access to preserve capacity on Boniface Pkwy; **Purpose:** Capacity; **Facility class:** Expressway (2); **Length of project:** 3.1 miles; **Length of new sidewalk:** 3.1 miles; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $20; **Funding source:** TIP; **Linked project(s):** 604.

Table 8-1. Recommended Road Improvement Projects

Project Number	Facility Name	From	To	Project Purpose and Description
Long-Term Projects (2016–2025) (continued)				
638	Minnesota Dr./Tudor Rd. Interchange	Minnesota Dr.	at Tudor Rd.	Add new facility—construct grade-separated interchange; **Purpose:** Capacity and freight; **Facility class:** Major arterial(3) Ramps (7&8); **Length of project:** Not applicable; **Length of new sidewalk:** Not applicable; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $25; **Funding source:** TIP; **Linked project(s):** 627.
639	Glenn Hwy. HOV Lane	Boniface Pkwy.	Eagle River; Artillery Rd. Interchange	Widen with lanes to the inside with 1 lane each direction designated non-SOV, includes Ship Creek Bridge improvements; **Purpose:** Capacity and freight; **Facility class:** Freeway (I); **Length of project:** 11.3 miles; **Length of new sidewalk:** 0 mile; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $38.3; **Funding source:** TIP; **Linked project(s):** 610, 707, and 710.
702	Elmore Rd. Extension	Rabbit Creek Rd.	DeArmoun Rd.	Add new facility—extend Elmore Rd. from Rabbit Creek Rd. to DeArmoun Rd.; **Purpose:** Circulation and access; **Facility class:** Collector (5); **Length of project:** 1 mile; **Length of new sidewalk:** 2 miles; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $8; **Funding source:** TIP; **Linked project(s):** 805.
708	Rabbit Creek Rd.	Seward Hwy.	Goldenview Dr.	Upgrade to 3-lane arterial; **Purpose:** Capacity; **Facility class:** Minor arterial (4); **Length of project:** 1 mile; **Length of new sidewalk:** 1 mile; **Length of new pathway:** 1 mile; **Estimated cost:**[a] $4.5; **Funding source:** TIP; **Linked project(s):** 702.
709	Railroad. Grade Separation at Spenard Rd. and at C St.	Spenard Rd.	at C St.	Add railroad grade separation at Spenard Rd. near 36th Ave. ($105), and at C St. near Raspberry Rd. ($25); **Purpose:** Maintenance, safety, and freight; **Facility class:** Not applicable; **Length of project:** Not applicable; **Length of new sidewalk:** Not applicable; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $130; **Funding source:** Other; **Linked project(s):** None.
710	Glenn Hwy. HOV Lane	Eagle River; Artillery Rd. Interchange	Mile 21.5 S. Peters Creek Interchange (Voyles Rd.)	Widen Glenn Hwy. to add an additional non-SOV lane in each direction, including interchange upgrades at Peters Creek Bridge; **Purpose:** Capacity and freight; **Facility class:** Freeway; **Length of project:** 8.1 miles; **Length of new sidewalk:** Not applicable; **Length of new pathway:** Not applicable; **Estimated cost:**[a] $61.8; **Funding source:** TIP; **Linked project(s):** None.
~~**Projects for Which the Funding Priority Is Undetermined**~~				
~~601~~	~~Lake Otis Pkwy./ Tudor Rd. Intersection~~	~~Lake Otis Pkwy.~~	~~Tudor Rd.~~	~~Add left- and right-turn lanes where needed to improve capacity and efficiency of existing intersection; finished configuration will have 2 left-turn lanes and one free right-turn lane at each approach; **Purpose:** Circulation and access; **Facility class:** Not applicable; **Length of project:** Not applicable; **Length of new sidewalk:** 0 miles; **Length of new pathway:** 0 miles; **Estimated cost:**[a] $10; **Funding source:** Bond/TIP; **Linked project(s):** 705 and 706. (The MOA Traffic Engineer, in consultation with DOT&PF, shall provide a report to AMATS Policy Committee within 6 months after Project 213 is open for public use to identify the congestion relief accomplished or expected to be accomplished with full completion of Projects 213 and 416 and quantifying the additional congestion relief that may be accomplished through Project 601.)~~

[a] Estimated costs are in millions of 2004 dollars. [b] Some short-term projects will be completed after 2015.

Note: In addition to the recommended projects identified in this list, existing roadways that are currently not constructed to urban standards may need to be upgraded during the time covered by the LRTP (through 2025). Road upgrade projects typically result in the same number of lanes for the road. Improvements may also include sidewalks, pathways, and accommodations that comply with requirements of the Americans with Disabilities Act.

Source: CH2M HILL

Table 9-2. Projected Plan Revenue Sources

Item	Revenue ($)[a]
Federal funding	
Federal Highway Administration	1,450
Federal Transit Administration	140
Legislative transportation earmarks	160
Other federal programs	50
Railroad grade separation earmarks	130
State	
General revenue federal match	119
Capital program	376
Operations and maintenance	219
Municipality of Anchorage	
Road bonds and federal match	265
General fund—road and trail maintenance	469
General fund—public transportation operation	358
Transit capital	
Non-motorized capital	26
	15
Total	**3,777**

[a] All revenues are in millions of 2004 dollars. Revenue projections are based on historical data from the DOT&PF and MOA.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Table 9-3. Comparison of Costs and Revenues Available to Implement National Highway System LRTP Projects

Item	Cost ($)[a]
Roadway improvements (LRTP projects only)	1,341
Roadway pavement preservation	76
Total Cost	**1,417**
NHS revenues available	
FHWA designated NHS funds	421
State match funds	42
Federal earmarks	160
State capital program	188
Non-NHS revenues available (see Table 9-4)	606
Total Revenue	**$1,417**

[a] All costs and revenues are in millions of 2004 dollars.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Table 9-4 shows similar cost-revenue results for the non-NHS portion of the LRTP. Non-NHS revenue sources can be used more flexibly than NHS funding. Major program elements for the non-NHS funding include roadway improvements and rehabilitation projects; pavement preservation; the safety improvement program; enhancement program; congestion mitigation and air quality (CMAQ) program; and planning, studies, and coordination. Table 9-4 shows estimated expenditures for each category of the non-NHS program. The amount of money spent on CMAQ projects has been increasing during the past few years (rising from $4.7 million in 2001 to $6.01 million in 2004).

Table 9-4. Comparison of Costs and Revenues Available to Implement Non-National Highway System LRTP Projects

Item	Cost ($)[a]
Roadway improvements (Anchorage Bowl LRTP)	554
Roadway improvements (Chugiak-Eagle River LRTP)	91
Roadway pavement preservation	108
Roadway safety projects	35
Enhancements	87
CMAQ	79
Planning, studies, and coordination	6
Total Cost	**960**
Total FHWA revenues	1,029
Total state and local match revenues	103
State capital program	188
MOA road bonds	239
MOA non-motorized capital	15
Other federal programs	40
Total Revenue	**1,614**
Non-NHS revenues available for NHS or other projects	654

[a] All costs and revenues are in millions of 2004 dollars.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

CHAPTER 9. Funding

Introduction

Funding for implementation of the recommended LRTP comes from federal, state, and local sources. This financial element of the LRTP includes estimates of costs that would be required to implement the LRTP as well as estimates of existing and contemplated sources of funds available to pay for these improvements.

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) planning regulations for metropolitan areas stipulate that all LRTPs must include a financial plan that demonstrates the consistency of proposed transportation investments with available and projected sources of revenue. The LRTP identifies multimodal improvement, pavement preservation, and enhancement needs for the next 20 years.

The cost to implement all elements of the recommended LRTP over the next 20 years and to maintain and operate the transportation system is more than $3.7 billion, as shown in Table 9--1.

All tables in this chapter reflect planning-level cost estimates for use in demonstrating funding constraints, according to FHWA guidance. All funding is subject to federal, state, and local appropriation.

Table 9-1. Recommended Plan Cost

Item	Cost ($)[a]
Roads	
National Highway System	1,281
Non-National Highway System	741
Pavement preservation	188
Operation and maintenance	676
Transit	
Capital	107
Operating	390
Railroad grade separations	130
Enhancements	87
Non-motorized trails/walkways	
Maintenance	12
Congestion management	114
Planning, studies, and coordination	6
Total	**3,732**

[a] All costs are in millions of 2004 dollars.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Projected revenue from identifiable sources totals $3.7 billion. See Table 9-2.

Revenues appear adequate to implement all elements of the LRTP. The following paragraphs discuss each element of the funding plan.

Roadway Capital Costs and Estimated Revenues

Roadway capital projects are divided into two categories: National Highway System (NHS) projects and non-NHS projects. This distinction is important because some federal funds are specifically designated only for use on the NHS.

The cost of implementing NHS roadway improvement recommendations contained in the Anchorage Bowl and Chugiak-Eagle River LRTPs will be approximately $1.3 billion. See Table 9-3. Other NHS-related expenditures include pavement rehabilitation, rut repair, and preservation; they are expected to cost an additional $76 million. Federal revenues designated for the NHS, federal earmarks, and state bonding and capital program sources projected to be available to pay for NHS improvements are about $811 million. The balance of $546 million can be covered by a portion of available non-NHS revenues.

Table 9-2. Projected Plan Revenue Sources

Item	Revenue ($)[a]
Federal funding	
Federal Highway Administration	1,450
Federal Transit Administration	140
Legislative transportation earmarks	160
Other federal programs	50
Railroad grade separation earmarks	130
State	
General revenue federal match	119
Capital program	376
Operations and maintenance	219
Municipality of Anchorage	
Road bonds and federal match	265
General fund—road and trail maintenance	469
General fund—public transportation operation	358
Transit capital	
Non-motorized capital	26
	15
Total	**3,777**

[a] All revenues are in millions of 2004 dollars. Revenue projections are based on historical data from the DOT&PF and MOA.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Table 9-3. Comparison of Costs and Revenues Available to Implement National Highway System LRTP Projects

Item	Cost ($)[a]
Roadway improvements (LRTP projects only)	1,341
Roadway pavement preservation	76
Total Cost	**1,417**
NHS revenues available	
FHWA designated NHS funds	421
State match funds	42
Federal earmarks	160
State capital program	188
Non-NHS revenues available (see Table 9-4)	606
Total Revenue	**$1,417**

[a] All costs and revenues are in millions of 2004 dollars.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Table 9-4 shows similar cost-revenue results for the non-NHS portion of the LRTP. Non-NHS revenue sources can be used more flexibly than NHS funding. Major program elements for the non-NHS funding include roadway improvements and rehabilitation projects; pavement preservation; the safety improvement program; enhancement program; congestion mitigation and air quality (CMAQ) program; and planning, studies, and coordination. Table 9-4 shows estimated expenditures for each category of the non-NHS program. The amount of money spent on CMAQ projects has been increasing during the past few years (rising from $4.7 million in 2001 to $6.01 million in 2004).

Table 9-4. Comparison of Costs and Revenues Available to Implement Non-National Highway System LRTP Projects

Item	Cost ($)[a]
Roadway improvements (Anchorage Bowl LRTP)	554
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Roadway pavement preservation	108
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Enhancements	87
CMAQ	79
Planning, studies, and coordination	6
Total Cost	**960**
Total FHWA revenues	1,029
Total state and local match revenues	103
State capital program	188
MOA road bonds	239
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Other federal programs	40
Total Revenue	**1,614**
Non-NHS revenues available for NHS or other projects	654

[a] All costs and revenues are in millions of 2004 dollars.

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Funding from property taxes depends on the willingness of the Municipal Assembly and the Administration to allocate money for this purpose and on support of the general public. Many other public transportation systems receive allocations from other funding sources (such as a percentage of sales tax, gasoline tax, or vehicle registration tax).

Earmarks and Other Federal Funding

Congressional transportation earmarks are a special category of revenues that cuts across all categories of transportation projects. The MOA was recipient of some earmark projects and one High Priority project from the Transportation Equity Act for the 21st Century (TEA-21) funds. Almost $11 million was earmarked in TEA-21 for the Ship Creek Access project. Some of this money has subsequently been diverted, through federal legislation, to other projects. ARRC also has received earmark money under FTA Section 5309 and anticipates additional earmarks in the future. ~~Work on the environmental documentation for the Knik Arm crossing project is being carried out with earmarked monies.~~

Another earmark project example is the Ship Creek Intermodal Facility, which will develop a transportation hub (bus, rail, parking, and pedestrian facilities) in the Ship Creek area. In recent 6-year federal transportation reauthorization legislation cycles, from $9 billion to $11 billion has been designated by Congress for earmark project funding. The LRTP program estimates funding of $160 million will be derived from earmarks (not including Knik Arm Crossing earmark funds).

In addition to the federal transportation funding allocations made by the FHWA and FTA to states and urban areas, both administrations have other discretionary funding programs that are awarded on a competitive basis. Other federal agencies, such as the U.S. Environmental Protection Agency, Energy, and Health and Human Services, have various programs that also may be tapped for transportation funding. The LRTP program estimates $50 million in funding will be derived from these supplemental sources.

Railroad Grade Separation Funds

Revenue to fund major railroad grade separations is estimated to come from federal earmarks or other specially designated funding sources. The total amount for this purpose is $130 million.

Summary of LRTP Costs and Application of Revenues

Table 9-6 summarizes costs for the recommended LRTP and the allocation of available revenues to fund implementation.

Table 9-7. Annual Highway Operation and Maintenance Funding

Item	Cost ($)[a]
2004 annual roadway operations and maintenance cost (local)	21.4
2004 roadway operations and maintenance cost (state)	9.6
Total 2004 roadway operations and maintenance costs	31.0
Annual additional roadway operations and maintenance cost with full LRTP implementation	1.65
2005-2025 roadway operations and maintenance cost with LRTP implementation	676.2

[a] All costs are in millions of 2004 dollars.

Notes:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Costs include traffic engineering operations and roadway operations and maintenance, excluding drainage system maintenance.

MOA and DOT&PF costs have been adjusted for intergovernmental subcontracts.

Sources: MOA 2005 Approved Operating Budget, MOA Street Operations and Maintenance Department, DOT&PF Central Region Operations and Maintenance, and CH2M HILL

Non-motorized (Trails and Walkways) Maintenance Costs

Estimated maintenance costs for trails and walkways are derived from operations and maintenance department accounts and information from Chugiak-Eagle River Parks, Recreation and Community Development. The existing (2004) budget for trail and walkway maintenance was identified as a baseline. The cost of maintainingnew trails and walkways in the LRTP was derived by applying unit costs per mile from current cost information. Total 2005–2025 maintenance costs for trails and walkways are projected to be $11.94 million.

Table 9-8. Trail and Walkway Maintenance Funding

Item	Amount ($)[a]
2004 annual trail/walkway maintenance cost	0.49
Additional annual maintenance cost for new LRTP trails/walkways	0.15
Total annual trail/walkway maintenance cost with full LRTP implementation	0.64
2005-2025 trail/walkway maintenance cost with LRTP implementation	11.94

[a] All costs and revenues are in millions of 2004 dollars.
Sources: MOA and CH2M HILL

Alaska Railroad Capital and Operating Costs and Estimated Revenues

Capital funding for selected Alaska Railroad Corporation (ARRC) improvements is estimated to originate from the FTA and the Federal Railroad Administration (FRA). The operation and maintenance of capital facilities is the responsibility of the ARRC. The railroad reports systemwide operating, capital, and funding sources for purposes of the National Transit Database. FTA formula programs (Urbanized Area Formula funds and Fixed Guideway Modernization funds) are calculated on passenger revenue vehicle miles and rail route miles. Table 9-9 shows ARRC capital and operation costs and revenues.

Table 9-9. Alaska Railroad Corporation Capital and Operation Funding

Item	Cost ($)	
	Estimate, Annual	20-Year LRTP[a]
Operations		
Total cost of operating system	15	300
Existing passenger budget	16	320
Additional operations cost	1	(20)
New passenger and other revenues from expanded fleet	0.75	15
New source of revenues needed to operate expanded fleet	0.25	(5)
Capital		
Total capital cost of system	10	200
FTA Section 5307 grant funding	6	120
FTA Section 5309 earmarks and other grants	1	30
FRA funding	1	30
Alaska Railroad Corporation internally generated capital applied to transit operations	1	20
Total annual revenues to finance capital costs	10	200

[a] All costs and revenues are in millions of 2004 dollars.

Source: Alaska Railroad Corporation

Table 9-6. LRTP Cost and Revenue Allocation Summary, 2005–2025
All costs and revenues are shown in 2004 millions of dollars

Operation and Maintenance Cost Items	Cost ($)	Revenue Sources	Revenue ($)
Roadways	676	State funds	219
		MOA general budget funds	457
Non-motorized (trails)	12	MOA general budget funds	12
Transit operations	390	Transit operations	390
People Mover ($320.7), Glenn Highway express bus service ($7.9), AnchorRIDES ($61.1)		MOA general budget and new source ($306.2),), FTA demonstration grant—Glenn Highway express bus service deployment ($15.4), CMAQ ($19.4), FTA ($38.9),other federal funds ($9.9)	
Total Operations and Maintenance Costs	**1,078**	**Total Revenue Sources**	**1,078**

Note:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Source: CH2M HILL

Roadway Operations and Maintenance

Adequate funding of street operation and maintenance functions is important to ensure that the road system continues to function well. The operation and maintenance functions include activities such as signing, marking, lighting, street sweeping, traffic signal system operation, snow clearing, sanding, pothole repair, landscaping, and sidewalk maintenance.

The State of Alaska and the MOA jointly share the responsibility of maintaining roadways in the Anchorage Bowl. For the most part, the MOA maintains municipality-owned roads and the State of Alaska maintains state-owned roads. However, in cases where efficiencies can be achieved, the maintenance responsibilities have been shifted through formal maintenance agreements. The State of Alaska contracts with the MOA for certain operations and maintenance functions.

The State of Alaska and the MOA spent almost $31 million in 2004 for operations and maintenance of the public road system in the Anchorage Bowl and the Chugiak-Eagle River area. (See Table 9-7.) New roads and lanes to be built as a part of the LRTP implementation will add maintenance cost of about $1.6 million per year. During the 2005–2025 LRTP period, operation and maintenance costs for the road system are projected to be $676 million.

State and local maintenance budgets have traditionally been very tight. As a result, there is a tendency to defer needed roadway upkeep because of lack of funds. The state legislature appropriates money for State of Alaska highway maintenance out of the general fund. Whether the road maintenance needs will be adequately funded depends on the priority given this function by the Legislature.

Deferring maintenance has a hidden price. Preventative maintenance programs, such as crack sealing, can substantially prolong the life of a roadway, reducing the frequency and total cost of rehabilitation projects.

A factor driving up the cost of roadway maintenance is pavement rutting caused by studded snow tires. The 2004-2006 Transportation Improvement Program (TIP) indicates that roadway-rutting problems will cost approximately $25.1 million to rehabilitate during the 3-year period. Under a recently adopted State of Alaska new tax on tires, motorists pay $2.50 tax per tire sold in Alaska and pay $5.00 for tires with studs. The Alaska Department of Revenue estimates the measure will raise about $3.2 million per year for road repair and maintenance.

CHAPTER 10. Implementation Plan

Introduction

This LRTP reinforces and sustains the economic health, livability, and attractiveness of Anchorage as a northern city and gateway to Alaska. The recommendations promote transportation choices and call for reducing and managing demand for automobile travel. The LRTP is guided by the Anchorage 2020 comprehensive plan with additional housing placed in the downtown area. MOA land use and transportation planners worked closely in developing the land use allocation details that underpin the LRTP.

Implementation of the LRTP recommendations will be contingent on many factors, some of which cannot now be foreseen. But the LRTP can be accomplished with strong political leadership, close collaboration among government jurisdictions, broad public support, and commitments to funding. The nature of the future transportation system can be influenced by policy recommendations. To shift the transportation network from where we are now to where we want to be in 2025, policy items and action recommendations need to be addressed.

Steady and continuous focus and effort are mandatory. Regular reassessment of progress, system performance, and traffic congestion will aid in prioritizing implementation actions.

Policy recommendations, action items, or both are identified for the issues and transportation elements below.

Anchorage 2020, Land Use, and Title 21

Policy Recommendations

- Continue to pursue the goals of Anchorage 2020; complete the Land Use Map, which details the land use changes; and shape Title 21 land-use codes to implement the development standards and densities envisioned in Anchorage 2020
- Continue to pursue development of subarea plans that bring further definition to development of neighborhoods and employment areas and inform future updates to the LRTP and land-use decisions
- Continue database maintenance and use of the Anchorage travel model as a tool for forecasting—to allocate land use, estimate trip generators and attractors, and project travel patterns—and for measuring transportation system performance
- Monitor effects from the Knik Arm crossing project on the scheduling of Anchorage 2020 implementation and future transportation projects
- Incorporate parking requirements in Title 21 and employment center plans that avoid too-large parking lots and parking management to encourage strategies for single-occupancy vehicle (SOV) reduction
- Update the Anchorage 2020 comprehensive plan to reference an Anchorage Non-motorized Transportation Plan that replaces the Areawide Trails Plan (MOA, 1997) and includes all forms of non-motorized transportation (paved and non-paved trails, sidewalks, Americans with Disabilities Act [ADA] amenities, and bike lanes)
- Explore utilization of congestion mitigation and air quality (CMAQ) funding to encourage smart growth and livable communities
- Base new parking standards on best available information about the parking required for various land uses
- Promote the development of policies and ordinances that guide future location and phasing of high-traffic land uses

Table 9-7. Annual Highway Operation and Maintenance Funding

Item	Cost ($)[a]
2004 annual roadway operations and maintenance cost (local)	21.4
2004 roadway operations and maintenance cost (state)	9.6
Total 2004 roadway operations and maintenance costs	31.0
Annual additional roadway operations and maintenance cost with full LRTP implementation	1.65
2005-2025 roadway operations and maintenance cost with LRTP implementation	676.2

[a] All costs are in millions of 2004 dollars.

Notes:
Earmark funding for the Knik Arm Crossing project has been accounted for separately and does not affect the anticipated funding plan described here. Knik Arm Crossing funding details can be found in Chapter 12.

Costs include traffic engineering operations and roadway operations and maintenance, excluding drainage system maintenance.

MOA and DOT&PF costs have been adjusted for intergovernmental subcontracts.

Sources: MOA 2005 Approved Operating Budget, MOA Street Operations and Maintenance Department, DOT&PF Central Region Operations and Maintenance, and CH2M HILL

Non-motorized (Trails and Walkways) Maintenance Costs

Estimated maintenance costs for trails and walkways are derived from operations and maintenance department accounts and information from Chugiak-Eagle River Parks, Recreation and Community Development. The existing (2004) budget for trail and walkway maintenance was identified as a baseline. The cost of maintainingnew trails and walkways in the LRTP was derived by applying unit costs per mile from current cost information. Total 2005–2025 maintenance costs for trails and walkways are projected to be $11.94 million.

Table 9-8. Trail and Walkway Maintenance Funding

Item	Amount ($)[a]
2004 annual trail/walkway maintenance cost	0.49
Additional annual maintenance cost for new LRTP trails/walkways	0.15
Total annual trail/walkway maintenance cost with full LRTP implementation	0.64
2005-2025 trail/walkway maintenance cost with LRTP implementation	11.94

[a] All costs and revenues are in millions of 2004 dollars.
Sources: MOA and CH2M HILL

Alaska Railroad Capital and Operating Costs and Estimated Revenues

Capital funding for selected Alaska Railroad Corporation (ARRC) improvements is estimated to originate from the FTA and the Federal Railroad Administration (FRA). The operation and maintenance of capital facilities is the responsibility of the ARRC. The railroad reports systemwide operating, capital, and funding sources for purposes of the National Transit Database. FTA formula programs (Urbanized Area Formula funds and Fixed Guideway Modernization funds) are calculated on passenger revenue vehicle miles and rail route miles. Table 9-9 shows ARRC capital and operation costs and revenues.

Table 9-9. Alaska Railroad Corporation Capital and Operation Funding

Item	Cost ($)	
	Estimate, Annual	20-Year LRTP[a]
Operations		
Total cost of operating system	15	300
Existing passenger budget	16	320
Additional operations cost	1	(20)
New passenger and other revenues from expanded fleet	0.75	15
New source of revenues needed to operate expanded fleet	0.25	(5)
Capital		
Total capital cost of system	10	200
FTA Section 5307 grant funding	6	120
FTA Section 5309 earmarks and other grants	1	30
FRA funding	1	30
Alaska Railroad Corporation internally generated capital applied to transit operations	1	20
Total annual revenues to finance capital costs	10	200

[a] All costs and revenues are in millions of 2004 dollars.

Source: Alaska Railroad Corporation