TRANSPORTATION

The West Anchorage transportation system is comprised of surface road, railroad, aviation, public transit, and nonmotorized (pedestrian, bicycle, and trail) facilities. Other components of Anchorage's transportation system include freight distribution, regional connections, and congestion management (MOA, 2005). Inter-Bowl travel is dominated by personal vehicles on the surface road network, but this chapter will discuss the current state of all elements of West Anchorage's transportation system and its associated facilities.

Relationship to Other Transportation Plans

Anchorage Metropolitan Area Transportation Solutions (AMATS) is the federally designated metropolitan planning organization responsible for transportation planning in the entire Municipality. The Anchorage Bowl 2025 Long-Range Transportation Plan (LRTP) with 2027 Revisions (MOA, 2005) was developed through the AMATS planning process and is used to identify current and future system deficiencies that need improvement to meet MOA future traffic needs. It is subject to annual review and possible revision.

The LRTP meets the federal long-range transportation planning requirements the MOA needs to apply for federal transportation funding. The Official Streets and Highways Plan (OSHP) identifies (by ordinance) the locations, classifications, and minimum right-of-way requirements of the street and highway system needed to meet LRTP goals over a 25 year planning period. LRTP recommended system improvements are funded through the Statewide Transportation Improvement Program (Federal), Alaska Transportation Fund (Alaska Department of Transportation and Public Facilities [ADOT&PF]), and Capital Improvements Program (MOA).

This chapter will describe each mode of transportation as it relates to West Anchorage and how that would have an impact on land use planning.

Surface Road Network

It is estimated that there are more than 1 million trips taken within the Anchorage Bowl (including Mat-Su Valley commuters) each weekday (MOA 2005). The 2002 Anchorage Household Travel Survey of 1,200 households estimated 90% of trips on a typical weekday are made in personal vehicles (MOA, 2005). The remaining trips are a combination of walking (6%), school bus (2%), public transit (1%), and bike (1%).

Road/Street Classification

The Official Streets and Highways Plan (MOA, 1996) recommends a road system classification to best reflect the primary use of each street or highway. "A good classification plan calls for a network of streets that integrate commercial and

industrial development, schools, parks, residential areas, and highways. It should support land use objectives and at the same time provide for improved traffic circulation" (MOA, 1996).

Table E-1 provides a summary of the road classifications in West Anchorage and some examples. The only freeway in West Anchorage that is part of the National Highway system (street classification V) is a portion of Minnesota Drive. Figure E-1 provides a map of the road classifications throughout the Anchorage Bowl from the Official Streets and Highways Plan (OSHP) including some functional classification revisions recommended in the LRTP Figure E-1. (Note: The LRTP uses the term "road", while the OSHP uses the word "streets", but most would consider the terms synonymous.)

Table E-1. Road Classifications in West Anchorage

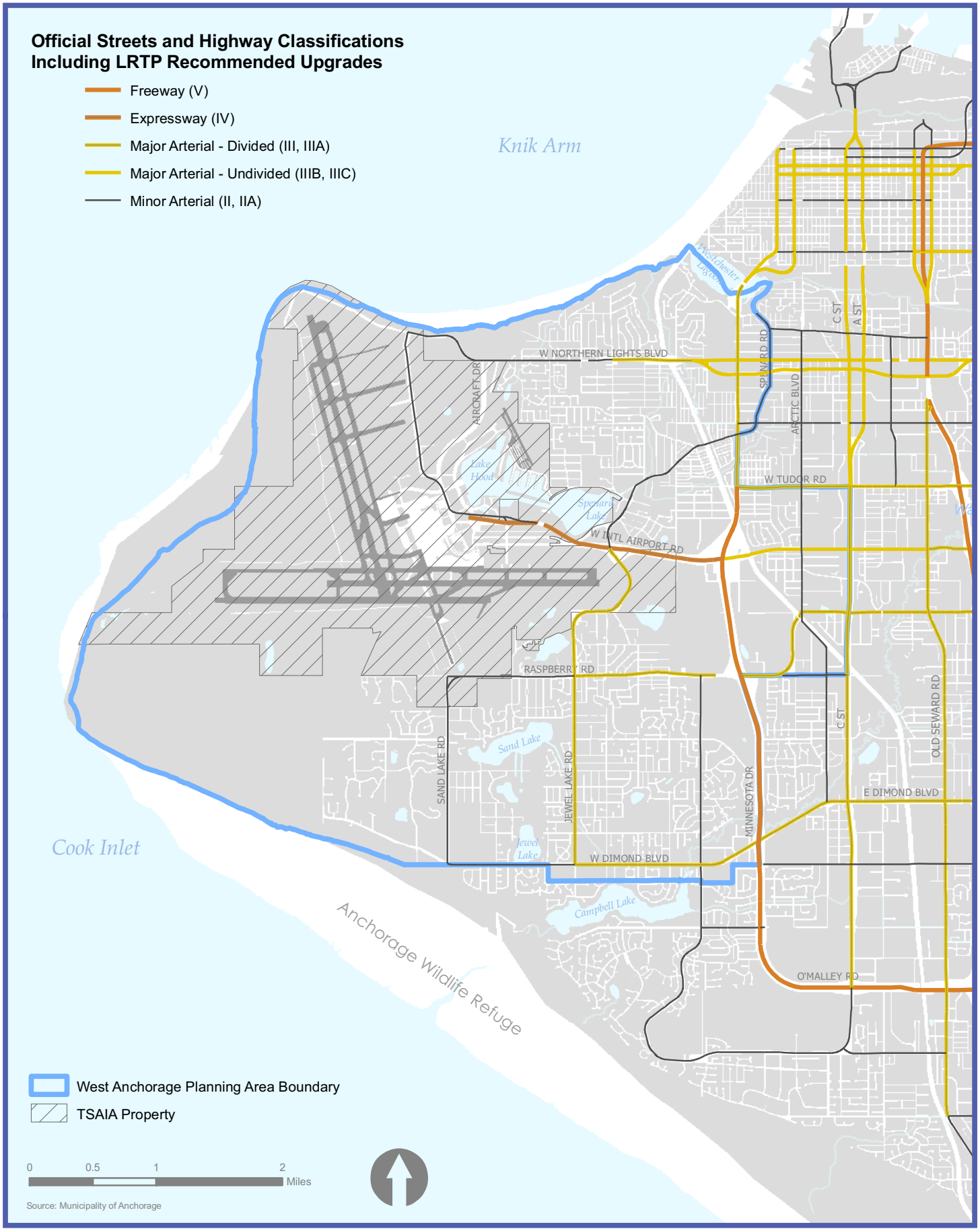
Facility Type[1]	Street Class	Primary Function[2]	Examples in West Anchorage
Freeway	V	Carries traffic at a high speed with limited access (no intersections). Grade-separated interchanges provide the most safety benefit in crash reductions.	- Minnesota Drive south of International Airport Road
Expressway	IV	Accommodate through traffic with full or partial control of access from major arterials. Speeds typically slower than freeways.	- International Airport Road (between Minnesota and TSAIA)
Major Arterial - divided with a strip - undivided	III-IIIA IIIB-IIIC	Carries large volumes of traffic and goods generally from one part of the community to another. They connect major employment centers, activity centers, and residential areas.	- West Dimond Boulevard (east of Jewel Lake Road) - Raspberry Road (between Jewel Lake and Arctic) - Northern Lights Boulevard (east of Wisconsin Street) - International Airport Road (east of Minnesota Drive)
Minor Arterial	II-IIA	Also primarily intended to move through traffic. They also provide important land access by distributing between major arterials and collector/residential streets.	- Sand Lake Road - Northwood Street - Spenard Road - Northern Lights Boulevard (west of Wisconsin)
Collector - residential - industrial/ commercial - neighborhood	I IA IB-IC	They collect traffic from local streets and conduct it to arterials, to local traffic generators such as shopping centers, schools, or recreational facilities. Can service low traffic in industrial areas, but not appropriate for commercial areas.	- Raspberry Road (west of Sand Lake Drive) - Northern Lights Boulevard (west of Postmark Drive) - West 88th Avenue - Blackberry Street

Local Street	N/A	Provides access to abutting properties. They provide space for street parking and utilities. They are created at the time of original land subdivision in accordance with subdivision regulations. Speeds are low and through-travel is discouraged.	Streets within neighborhoods

Source: 1996 MOA Official Streets and Highways Plan

[1] Information used to classify streets into system is obtained from origin-destination data, traffic volume counts, and street inventories. Land use data and prospective commercial, industrial, and residential development will indicate access requirements.

[2] Complete definitions are in the OSHP.



West Anchorage District Plan

Exhibit E-1: Official Streets and Highway Plan

The LRTP recommended the traditional functional classifications in the OSHP be augmented to include *street typology* or design elements applied to the cross section of each street. Street typologies help describe how the street relates to the adjacent land use by setting priorities for certain design elements like curb cuts, sidewalks, and crosswalks. Certain design elements are limited by the size of the ROW or by specific technical or community concerns. A list of street typologies and some example design features that could be included within the ROW are highlighted in Table E-2.

Table E-2. Street Typology Descriptions[a]

Street Typology	Purpose	Potential Design Features	Example
Residential Street	Balance need for land access with multimodal mobility and pedestrian-orientation; more pedestrian-oriented than commercial streets.	Two travel lanes; greater emphasis on walking, biking and land access.	Raspberry Road (west of Minnesota) – residential major arterial
Commercial Street	Balance need for traffic mobility with land access.	Four to six lanes divided by a landscaped median or continuous center lane for left turns; Frequent intersections.	Northern Lights Boulevard (east of Wisconsin) – commercial major arterial
Industrial Street	Accommodate significant volumes of large trucks and trailers; infrequent bicycle and pedestrian use.	Two to four (wider- 15-20 feet) travel lanes without bike lanes or on-street parking; narrower sidewalks.	C Street – industrial major arterial
Main Street	Medium-intensity retails and mixed land uses as defined by the Town Center designation in *Anchorage 2020*; promote walking, bicycling and transit within an attractive landscaped corridor;	Two to four travel lanes; on-street parking; wider sidewalks (10 feet or greater); street furniture, plazas and other features concentrated within a two to eight block area	West Dimond Boulevard at Jewel Lake – main street major arterial
Transit Corridor	Accommodate of alternative modes of transportation the highest concern	Two to four travel lanes; increased use of pedestrian, bicycle and transit design features	Jewel Lake Road – transit corridor major arterial
Mixed-Use Street	Mix of high-intensity commercial, retail, and residential with substantial pedestrian activity	Two to four travel lanes; on-street parking and wide sidewalks; trees, lawns and street furniture	Spenard Road – mixed-use street minor arterial

Street Typology	Purpose	Potential Design Features	Example
Park Land Street	Minimize disturbance to the natural setting; accommodate low to moderate amounts of traffic	Natural vegetation landscaping to reduce noise, air pollution and visibility of the road; grade separated crossing for recreationists and wildlife collision prevention measures	Raspberry Road (west of Sand Lake Road) – park land street collector
Institutional District Street	Accommodate medium to high-density university and hospital campus	Two to four travel lanes; no on-street parking; landscaped medians and enhanced transit stops to make attractive campus environment	Not in study area
Low-Density Residential	Accommodate very low density residential (less than one dwelling unit per acre) where walking is recreational and roads are automobile-oriented	Two travel lanes with separated multi-use trail on one side of road where feasible; natural vegetation retention and strategic landscaping.	Not in study area

Source: LRTP (MOA, 2005)

▫ For a complete list of street design and traffic management elements, refer to the LRTP Appendix C, Table 1.

Jewel Lake Road provides a good example of how these typologies are implemented. It is classified in the OSHP as a divided major arterial (III in Figure E-1). According to *Anchorage 2020*, it was recommended to be designated as a "transit corridor" street typology because of its connection to the Downtown and Midtown employment centers. The land use plan along the corridor is for medium to high-intensity commercial and residential to support the ridership needed for a more robust transit system. If the street were reconstructed, the project sponsor (in this case, ADOT&PF) would consult with the MOA Planning Department to determine the applicable street typology and design as well as applicable traffic management elements. A context sensitive design process (explained later in the chapter) would be used to gather additional community input to achieve a design balanced for all users. The outcome could look like four travel lanes with a wide pedestrian walkway, road shoulder for bicycles, and transit design elements like bus pull-outs or shelters within the ROW.

As a contrast, Raspberry Road is also designated a divided major arterial between Jewel Lake Road and the Dowling Extension, but its typology is more accurately characterized as "residential street" because the predominant frontages are single family and multi-family uses. Raspberry Road should balance the need to access residences (automobile mobility) with a greater pedestrian orientation.

The street typology does not override decisions about street design. Rather it is a tool used in conjunction with engineering specifications, plans like the LRTP and

Nonmotorized Transportation Plan as well as a strong emphasis on community needs all within the physical constraints of the ROW.

Level of Service

For transportation planning, "level of service" (LOS) is a description of how well traffic flows on a road based on its design and capacity, and uses LOS categories from A (under capacity) to F (over capacity). For example, the analysis conducted in 2002 for the 2005 LRTP found that Minnesota Drive from International Airport Road to West Dimond Boulevard experiences LOS "D" or congested conditions that stall traffic, particularly during afternoon peak periods.

Based on analysis for congestion management, AMATS found that LOS at intersections is the key determinant of congestion in Anchorage. Throughout the Anchorage Bowl, intersections of major east-west and north-south arterials cause bottlenecks or delays (AMATS, 2000). Intersection congestion appears to be worse in the afternoon; particularly along east-west arterials like Northern Lights Boulevard. Table E-3 highlights examples of LOS for major intersections in West Anchorage, including simple definitions of LOS categories A through F.

Table E-3. West Anchorage Roadway Intersections LOS

Level of Service[a]	Definition	West Anchorage Arterial Intersection Examples
A, B, C	Under Capacity	• West Northern Lights and Wisconsin • West Dimond Boulevard and Jewel Lake Road • Jewel Lake Road and Raspberry Road
D	At Maximum Capacity;	• International Airport Road and Spenard Road • Arctic Road and Tudor Road
E, F	Over Capacity	• West Northern Lights Boulevard and Minnesota Drive • Spenard Road and Minnesota Drive • Tudor Road and Minnesota Drive
Source: 2005 LRTP [a] Only afternoon peak period shown for demonstration of worst LOS.		

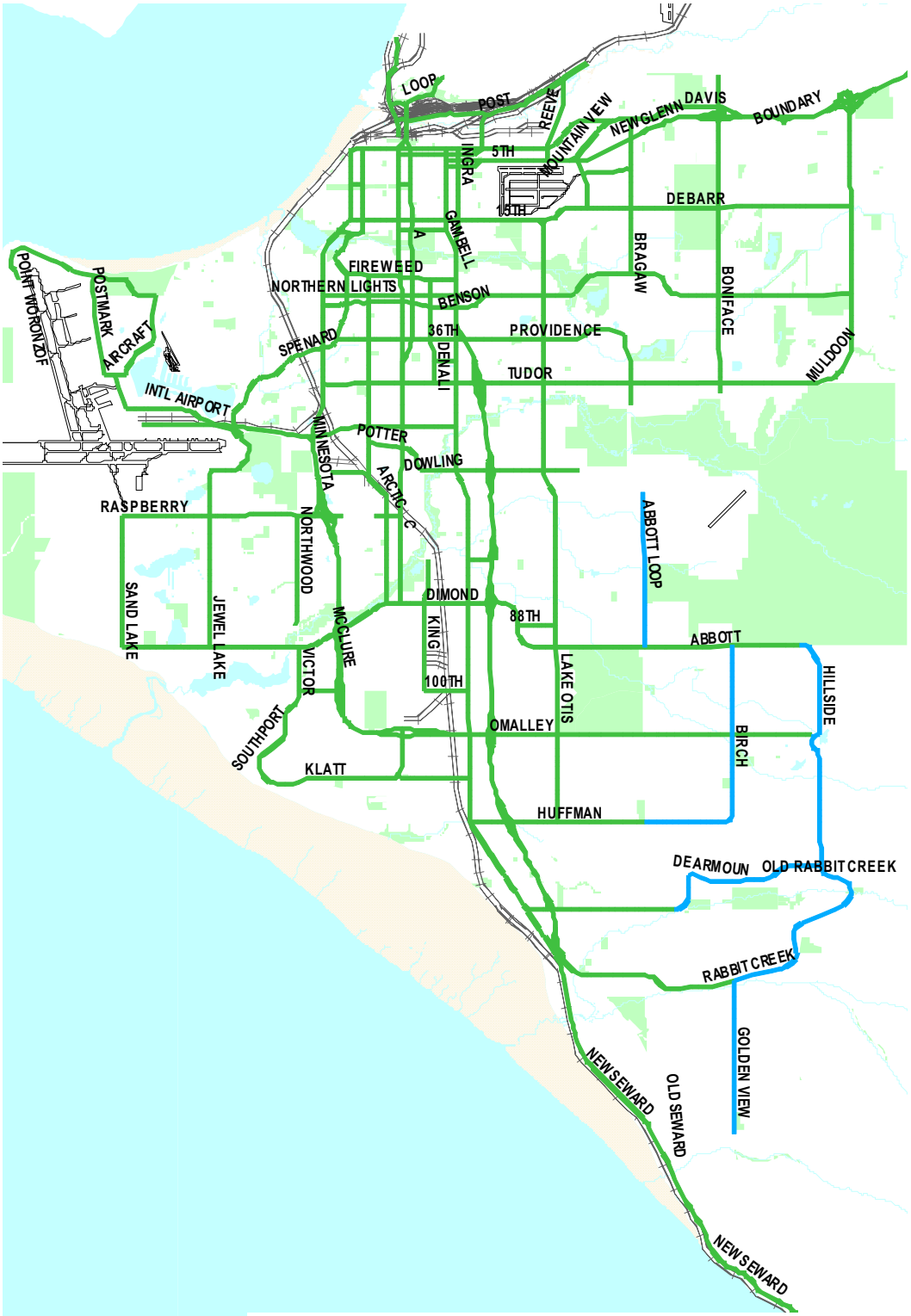
Problem Intersections

Congestion is not the only issue at intersections; maneuverability and safety are additional concerns. AMATS' Technical Advisory Committee convenes a special working group on freight mobility; permitted truck routes can be found in Figure E-2. Truckers describe "pinch points" or intersections that have large truck maneuverability problems. Pinch points speak to road geometry, not congestion or capacity. The type or length of trucks used for freight distribution can change, which in turn causes intersections to be difficult to maneuver.

The following pinch points for truck freight traffic in West Anchorage have been reconstructed recently to better accommodate truck maneuverability and safety:

- Postmark Drive and Point Woronzof Drive/West Northern Lights Boulevard (this intersection was identified as needing additional work)
- Postmark Drive and International Airport Road off-ramp

Permitted Truck Routes



Permitted Truck Routes

Permitted

Secondary Routes

Secondary routes on the Hillside should be used before local roads

Major freight distribution centers in West Anchorage include the FedEx complex on Postmark Drive, the Sourdough Express/American Fast Freight hub on Van Buren Street near Minnesota and Tudor, and the industrial corridor along International, Arctic, and C Street near the railroad corridor.

The most recent accident data and problem intersections for the Anchorage Bowl identified and ranked in the *2008 Annual Traffic Report* (MOA, 2008). The federally mandated Highway Safety Improvement Program aims to reduce collisions resulting in injuries or fatalities. As funding is available, intersections on the annual list are improved.

High collision rates found in the West Anchorage area are:

- Spenard Road and West Benson Boulevard
- Arlene Street and West 88th Avenue
- West Dimond Boulevard and Sand Lake Road
- Jewel Lake Road and West Dimond Boulevard
- Spenard Road and Hillcrest Drive
- Spenard Road and West Northern Lights Boulevard

Congestion Management

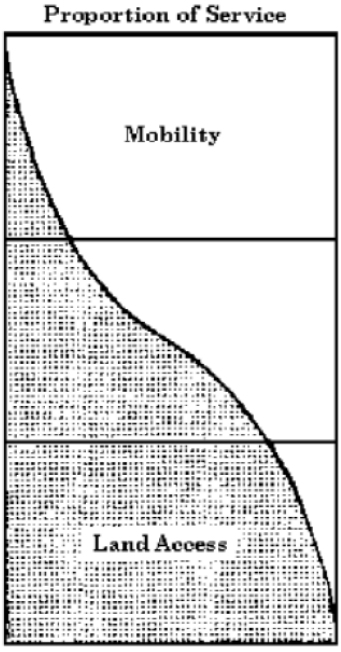
As described in the introduction, private vehicle trips by solo drivers in Anchorage account for the largest share of daily total trips. AMATS' Congestion Management Program was created to increase the efficiency of the existing transportation system and reduce travel demand, particularly by solo drivers (AMATS, 2000). The study found that the most intense congestion occurred along the major east-west corridors. The intersections of Northern Lights Boulevard/Minnesota and Tudor Road/Minnesota experience congestion, however the Bowl's worst congested intersections are not found in West Anchorage.

Other modes of travel can reduce congestion and contribute to a more efficient use of the existing transportation system, but they are not widely embraced at this time. Public transit, school buses, carpooling, and vanpooling programs reduce the number of vehicle miles traveled on the roadway system, but they currently compose less than 3% of the total trips. Bike and pedestrian use is increasing, but gaps in the pathway/sidewalk system, major road crossings, snow removal, signage, and lighting still need to be addressed to improve the number of trips.

Circulation and Access

Circulation improvement is a congestion management tool that looks at a variety of street connections that would meet current land use needs. Streets and highways combine in a surface road transportation system to circulate traffic. High mobility can be met through unimpeded arterials; high access to land can be met with collectors or local streets. (A diagram to explain this concept can be found in Chart E-1.)

Chart E-1. Relationship of OSHP Classification to Mobility/Circulation and Access



Source: FHWA, 1989

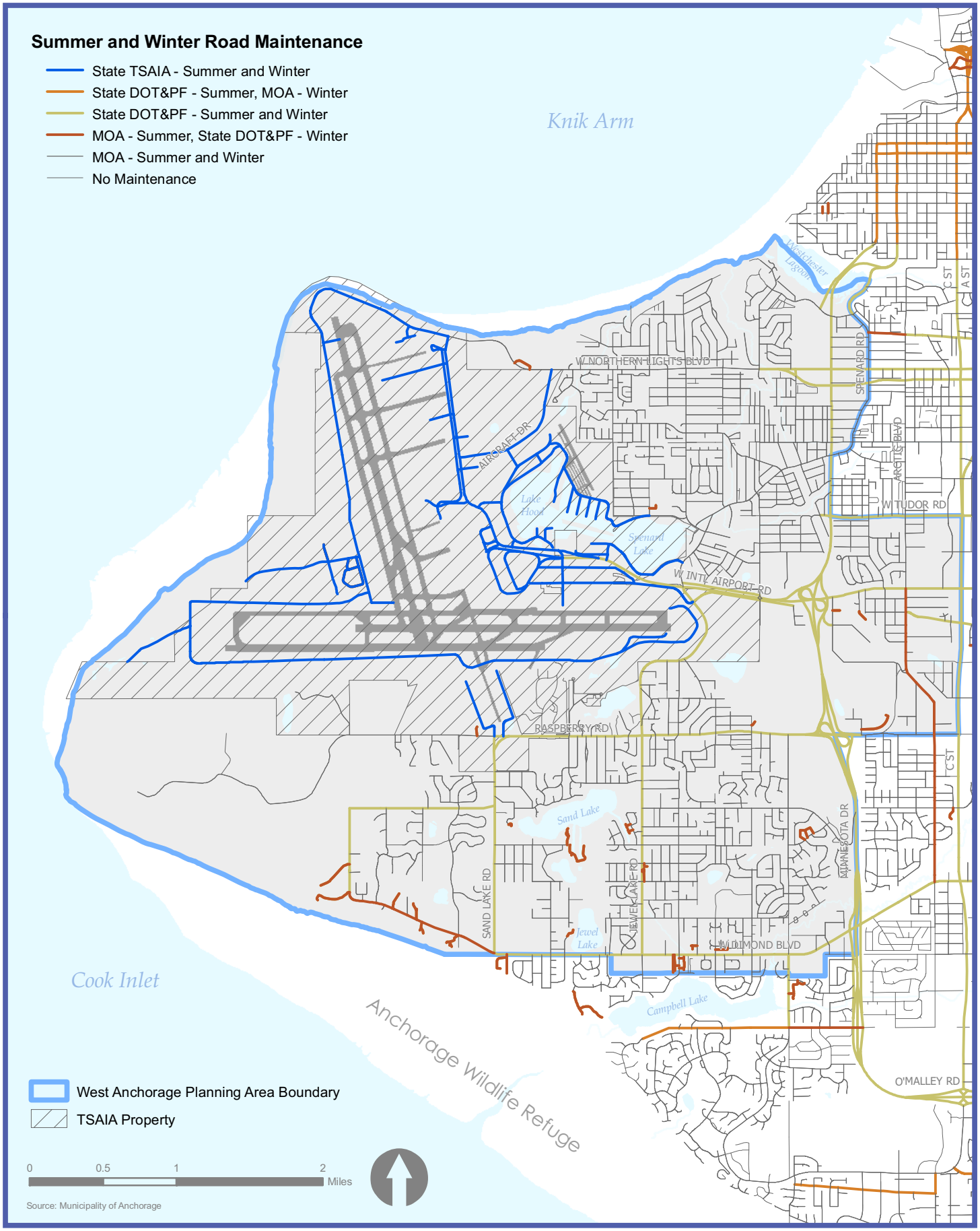
Surface transportation users need good circulation to meet their needs in a timely manner and good access points to reach their desired destination or future land use destinations.

For example, the LRTP recommends east-west running West Dimond Boulevard and West 88th Avenue be connected by the north-south Northwood Drive and Victor Road to improve circulation and access. Right now, the first opportunity to access the neighborhood from West Dimond Boulevard is from Arlene Street.

Surface Road Maintenance

The responsibility for maintaining the roadways in Anchorage is jointly shared by the MOA and the ADOT&PF. In most cases the MOA and ADOT&PF maintain the roads that they own, but there are a few cases where it was more efficient to exchange maintenance responsibilities and formal agreements were made. Street maintenance includes signing, lighting, street and trailway sweeping, traffic signal system operation, snow clearing, pothole repair, landscaping, and sidewalk maintenance.

Figure E-3 demonstrates that maintenance responsibility for surface roads in West Anchorage depends on ownership; there are some shared maintenance responsibilities on State-owned roads. (One exception is that the State maintains the western-most portion of the MOA-owned West Dimond Boulevard.) MOA owns and maintains the vast majority of local streets, year-round. The only arterials owned and maintained by MOA are Spenard Road (north of International) and Raspberry Road (west of Sand Lake Road).



West Anchorage District Plan

Exhibit E-3: Road Ownership and Maintenance

The MOA and ADOT&PF have improved communication and coordination of snow removal efforts. For example, MOA authorized ADOT&PF to use MOA snow dump facilities to shorten distance for snow hauling thereby stretching the ADOT&PF maintenance budget. However, citizen complaints about sidewalk snow removal persist. This is due to a variety of reasons including: equipment (MOA operates sidewalk-sized plows for sidewalk snow clearing, while ADOT&PF blades back of curb sidewalks with street-sided plows), tenants that do not plow in front of their properties, and sidewalk design adjacent to the street that does not allow for snow storage.

National Highway System

Minnesota Drive, International Airport Road (from TSAIA to Minnesota), and Tudor Road are designated as part of the National Highway System to reflect importance to the nation's economy, defense, and mobility. ADOT&PF assumes responsibility to maintain these roads as part of the National Highway System.

Freight Distribution

Ninety percent of the total volume of goods entering Anchorage comes through the Port of Anchorage, outside of the planning area. Daily truck traffic is highest on the National Highway System routes – Glenn and Seward Highways and around the Port of Anchorage – all outside the planning area.

Within the planning area, TSAIA often ranked first in U.S. airports in landed gross weight with most air cargo stopping to refuel for final destinations. Goods intended for the Alaska market are distributed by truck from the airport to several nearby freight distribution centers in West Anchorage.

Truck Cargo

There are three main freight distribution centers in West Anchorage. The predominant freight "generators" are the tenants of TSAIA (e.g. USPS, FedEx). Freight attractors in West Anchorage include the commercial corridors on West Northern Lights Boulevard, Spenard Road, Jewel Lake Road and West Dimond Boulevard. Entities that "attract" freight generally include: manufacturing facilities, government yards, utility service, maintenance facilities, and construction sites.

The Alaska Trucking Association and AMATS Trucking Advisory Committee report that street geometry and incompatible adjacent land uses can cause complaints regarding trucking idling, parking, snow storage, child safety, and maneuverability.

For example, in the Spenard area near West 48th Avenue and Van Buren/Taft Road, there is a freight distribution center adjacent to residential and public parks. A project is underway in an attempt to solve this incompatible land use problem. The solution may include a land trade so that truck traffic is minimized through residential streets and rerouted around public park land.

Barge

The Port of Anchorage (POA) is not in the West Anchorage planning area, but its container traffic is transferred to rail, truck, and barge for transport to storage areas, retail stores, or direct to businesses in West Anchorage. Waterborne container traffic is measured in terms of twenty foot equivalent units (TEU). Inbound and outbound TEU are summarized for 2007 in Table E-4 to demonstrate freight volume moving through Alaska's dominant marine facility. In 2008, 4.36 million tons of good came through POA (POA, 2009).

Table E-4. Estimated Cargo TEU at Port of Anchorage

	Domestic			Foreign			Grand Total
	Inbound	Outbound	Total[1]	Inbound	Outbound	Total	
2007	223,941	49,483	276,848	9	2,211	2,220	275,645

Source: USACE U.S. Waterborne Container Traffic by Port in 2007
http://www.iwr.usace.army.mil/ndc/wcsc/by_porttons07.htm

[1] Empty containers are not included. In general, over four times as many empty containers leave Anchorage outbound as come inbound.

POA handles over 80% of the jet fuel used at TSAIA. The POA multi-year intermodal expansion project is intended to expand its transshipment areas, accommodate larger ships with deeper drafts, and improve cargo flow to road and rail (POA, 2009).

Context Sensitive Design

Context sensitive design (or "context sensitive solutions" [CSD/CSS]) is a public involvement process that focuses on the relationship between setting and transportation systems. CSD/CSS is applied during the planning, design, construction, and evaluation of transportation facilities. It can be scaled for the scope of the project and strives to achieve advanced engineering solutions *after* the public understands and contributes to questions to be resolved by their participation. It may look at one specific mode of transportation while ensuring that access for other modes of transportation is still considered.

> ***Context Sensitive Solutions*** **-** "CSS is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist."
>
> – U.S. Department of Transportation Federal Highway Administration

AMATS adopted a resolution in 2004 that MOA and ADOT&PF encourage and institutionalize "context sensitive design" at a project level as defined by the Federal Highway Administration (FHWA). ADOT&PF institutes the CSD/CSS form of public involvement through compliance with federal regulations as described in its Pre-Construction Manual and online: www.contextsensitivesolutions.org MOA instituted a CSD/CSS policy in 2008 (Lyon, 2009).

The CSD/CSS process is new in its application to West Anchorage (Kniefel, 2009). There are examples of road redesign projects that took many years to complete or stalled because a CSD/CSS-type process was not incorporated from the start. In other words, the design solution that was presented in the beginning did not achieve community goals- if the design incorporated community goals from the beginning, several re-works would not have been necessary. Examples include Strawberry Road, 35th and McRae, and the northern end of Spenard Road (Kniefel, 2009). There is potential for public support of road design on the upcoming Northwood connection and Van Buren/Taft Road projects.

Long Range Transportation Plan Projects

In order to accommodate the projected traffic associated with population growth prescribed by ISER for 2027 (estimated in 2005), Table E-5 outlines projects from the LRTP and their completion status.

Table E-5. LRTP Projects in West Anchorage

Project #	Facility Name	From	To	Description	Status
Short-Term Projects (2006-2009)					
206*	Victor Road	100th Ave	Dimond Blvd.	Upgrade roadway to minor arterial standard with minimum of 2 lanes and center turn lane.	Funded. Construction is planned for 2010 by ADOT.
214*	Northern Lights Blvd.	Nathaniel Ct.	Wisconsin Ave.	Upgrade to urban standards with center turn lane.	MOA project completed in 2008
221	Raspberry Rd. Extension	Rovenna St.	Arctic Blvd.	Add new facility by extending Raspberry Road to Arctic.	MOA project completed in 2008
224	Northern Lights Blvd.	Postmark Dr.	Nathaniel Ct.	Reconstruct pavement, add shoulders and turning pockets where needed.	MOA overlay completed in 2009.
Short-Term Projects (2006-2015)					
301*	International Airport Rd.	Old Seward Highway	Brayton	Add new facility by expanding International from Homer Dr. to Brayton Dr.	ADOT project not started.
406*	Spenard Road Surface Rehabilitation ("Spenard Road Improvements Project")	Minnesota Rd.	Minnesota Road Onramp	Reconstruction from 4 to 2 lanes with center turn lane and pedestrian facilities.	Now in three phases. Phase I is north of Hillcrest Dr, is fully funded and under construction by MOA. Phase II, Benson Blvd to Hillcrest Dr is in design by MOA but not funded for construction. Phase III Minnesota Dr to Benson Blvd is an ADOT project finishing its federally funded environmental phase.

Project #	Facility Name	From	To	Description	Status
414	Arctic Blvd. Surface Rehabilitation	Fireweed Ln.	International Airport Rd.	Rehabilitate from 4 to 2 lanes plus center turn lane from Fireweed Ln. to 36th Ave.; upgrade from 4 to 5 lanes from 36th Ave. to Tudor; upgrade from 4 to 5 lanes from Tudor Rd. to Raspberry and southbound right turn lane at Tudor.	Now in several phases: Phase I from Fireweed Ln to 36th Ave is a completed ADOT project. Phase II is a westbound right turn lane on Arctic Blvd at Tudor Rd and MOA design is funded and almost complete. Phase III from 36th Ave to Tudor Rd is an MOA reconstruction project now expected to reconfigure to a 3-lane section rather than a 5-lane. The design study has been funded. Phase IV from Tudor Rd to International Airport Rd is an MOA overlay project completed in 2009 that also reconfigured the 4-lane to a 3-lane section.
417*	Northwood Drive Extension	88th Avenue	Dimond Blvd.	Add new facility by expanding Northwood Dr.	Design study funded and complete on MOA project. Project is on hold pending additional funding.
507*	Jewel Lake Rd.	Dimond Blvd.	International Airport Rd.	Reconstructed to operate as 2 lane with center turn	ADOT has a rut repair/resurfacing with ADA-compliance on-ramps project slated for 2010. Design on a reconstruction project has not started.

Project #	Facility Name	From	To	Description	Status
Long-Term Projects (2016-2025)					
510*	Minnesota Drive (Northbound)	26th Ave.	16th Ave.	Reconstruct and add one lane to improve capacity	ADOT project not started.
518	Postmark Drive/International Airport Road Grade Separation	Postmark Dr.	International Airport Rd.	Add grade separation of International over Postmark Dr.	ADOT project not started.
609	Jewel lake Rd/International Airport Rd. Grade Separation	Jewel Lake Rd.	Northwood St.	(Not adequate rail volume to justify yet.) Realignment of railroad to south side of International Airport Rd.	ADOT project not started.
621*	Minnesota Drive Frontage Road	Dimond Blvd.	Raspberry Rd.	Add new facility on east side of Minnesota Drive parallel to Minnesota.	ADOT project not started.
627*	Minnesota Drive Corridor	International Airport Rd.	Northern Lights Blvd.	Extend controlled access from International through an interchange at Tudor Rd. and widen the arterial to 8 lanes north of Tudor.	ADOT project not started.
638	Minnesota Drive/Tudor Rd. Interchange	Minnesota Dr.	At Tudor Rd.	Add grade-separated interchange.	ADOT project not started.
709	Railroad Grade Separation at Spenard Rd. and C Street	Spenard Rd. near 36th Ave.	At C St. near Raspberry Rd	Add railroad grade separation at Spenard Rd. near 36th Ave. and at C St. near Raspberry Rd.	ADOT project not started.

* Contains associated Pedestrian and/or Trail Project

Source: LRTP; Lamson, 2009

Public Transportation

Bus Service

Public transit accounts for over 1% of trips in Anchorage as a whole and school busses account for approximately 2%. People Mover is the fixed route bus service for Anchorage and is operated by the MOA. It is funded by the MOA and receives no operating expenses from the state.

People Mover has two bus routes that provide public transportation for parts of West Anchorage and connect the airport to the rest of the bus system for Anchorage. Much of West Anchorage has limited bus service (shown in Figure E-4).

Route 7 (operating time 6:15am – 10:45pm) runs on the half-hour between the downtown Transit Center and the Dimond Center with stops along Spenard Road and Jewel Lake Road. The Route 7A expands the service area of Route 7 by serving Northwood and Strawberry Roads. Designated trips provide hourly service 7 days a week to the Airport from the Dimond Center and the Downtown Transit Center.

Route 36 (6:10am – 11:00pm) runs hourly between Providence Hospital and the downtown Transit Center with stops in Turnagain and Spenard in West Anchorage.

Figure E-4. People Mover Routes in the Anchorage Bowl

Source: 2009 People Mover Blueprint Restructure

The level of service for public transit in West Anchorage is perceived to be insufficient by residents in some areas of West Anchorage. Auto travel times are about two times faster than taking these bus routes to Downtown or the University area. In order to influence riders to use the bus system, auto travel can only be 50% faster than public transit, and bus departure frequency must be at least 15 minutes for peak periods/30 minutes for non-peak periods (AMATS, 2000).

Ted Stevens International Airport (TSAIA) is a major destination for employees and visitors, but its 24-hour operation does not match the 6am – 11pm operation of the People Mover. The LRTP does not recommend increased frequency on the airport portion of Route 7. However, it does recommend service scheduled every 15 minutes on Route 36 and the Dimond Center portion of Route 7.

The People Mover Route Restructure Plan Update of 2009 recommends increasing Route 7 service to 15 minute headways during the week and 30 minute headways on weekends. New route service is recommended with circulators going to the Klatt Southport area and also the Sand Lake area (MOA, 2009).

Other Public Transit Services

The plan that identifies transportation needs and sets priorities for projects that will improve mobility for seniors, people with disabilities, youth and low income populations is contained within the *Anchorage Human Services Coordination Plan* (AMATS, 2009) or "Coordinated Plan".

Public transportation services that supplement People Mover are not discussed in detail in this profile, but include:

AnchorRIDES - a curb-to-curb shared ride service provided by MOA and a contractor to people with disabilities that prevent them from using the People Mover. Through the Old Americans Act, AnchorRIDES also provides some trips for citizens 60 and over.

Share-a-Ride - a vanpool program coordinated by a MOA contractor that provides vans to groups of commuters. Users share monthly fuel, maintenance, and insurance in order to reduce traffic congestion, improve air quality, and save money over the cost of driving to work alone. Share-a-Ride also coordinates Carpool/RideMatch opportunities. There are 52 commuter vanpools throughout Anchorage, Girdwood and the Mat-Su Borough with a sizable waitlist. The majority run between the Anchorage Bowl and the Matanuska-Susitna Borough (Tipton, 2008).

Railroad

General Overview

The Alaska Railroad Corporation (ARRC) main line track runs from its Old Depot/Intermodal Center in Ship Creek, north of Westchester Lagoon through West Anchorage; then runs south near Fish Creek until it crosses Minnesota Drive north of International Airport Road.

A rail station was opened at the airport in 2002 to carry chartered rail service; primarily cruise ship passengers from the airport to Seward and Whittier between May and September (TSAIA, 2009). The airport spur runs west from the mainline at Minnesota Drive towards the airport. It follows the north edge of International Airport Road until it hits Jewel Lake/Spenard Road; then switches to the south edge of International Airport Road.

A Master Plan study in 1999 by Woodside Consulting Group advised ARRC that in order to meet its current and future capacity, it needed to add ten miles of double-track (a second track parallel to its main line) on both sides of its terminals (Carr, 2009). The four-mile stretch from the Anchorage Yard (Milepost 114) in Ship Creek to the airport spur near Milepost 110 is the busiest in the ARRC system with as many as 20 trains per day in the corridor (shown below; ARRC, 2008). The second track would be achieved within the existing right-of-way (ROW) to accommodate the projected strong increase in passenger traffic and modest increase in freight. ARRC began the environmental assessment of the second track in 2002. Double-track already runs south through the project area starting at Milepost 110.

Rail Cargo

The Alaska Railroad Corporation has a large role in moving heavy freight (including gravel, coal, fuel, cement, pipe, and consumer goods) that is inefficient to transport via truck. The railroad route is limited to its ROW where it meets the major population centers of Alaska and U.S. military bases.

Rail cargo tonnages that pass through West Anchorage are summarized in Table E-6. Gravel comes from the Matanuska-Susitna Valley through West Anchorage to a gravel pit in South Anchorage. Coal and other goods like pipe go to the ports of Seward and Whittier.

Freight is the income generator for ARRC rather than passenger transport. A reduction in cargo activity at TSAIA due to global economic forces and volcanic eruptions in 2008 reduced freight of jet fuel from Fairbanks to the Port of Anchorage substantially (Popp, 2009; Alaska Department of Labor and Workforce Development, 2009). The biggest commodity to run through West Anchorage is gravel from Mat-Su to the South Anchorage gravel pits. Coal and other general freight travel south to Whittier and Seward.

Table E-6. Select Annual ARRC Tonnage through West Anchorage

Year	Coal (export)	Gravel	Other	Total [millions of tons]
1997	590	2,951	460	4,001
1999	532	3,640	370	4,542
2001	699	3,543	571	4,813
2003	224	3,769	574	4,567
2005	384	4,024	621	5,029
2008	471	2,776	209	3,456
Average Annual Percent Change	-8%	-4%	-10%	-3%
Source: Carr, 2009				

International Airport Road Corridor

A study by DOWL Engineers in 2001 for ADOT&PF describes several scenarios to improve safety and efficiency of all models of travel along International Airport Road between Minnesota and the airport. Currently, the airport rail spur single track runs from the mainline travels along the north edge of International Airport Road until an at-grade crossing at Jewel Lake Road where it continues to the airport on the southern edge of International Airport Road. The airport rail spur's forecasted future capacity for passenger and material (gravel) freight has not been substantial enough to justify a project including above-grade crossings or rail realignment (Lincoln, 2009). However, the transportation corridor remains a critical access to the airport where some property acquisition and land use approvals would be needed to accomplish the preferred configuration to "relocate track to south side of International Airport Road and elevate over JLR" (Carr, 2009). Current passenger and freight numbers do not justify the cost of this project, but it remains a long-term recommendation of the LRTP.

Industrial Corridor

South of International Airport Road, the ARRC mainline heads southeast until it crosses C Street, out of the project area. There are parcels hugging the mainline track zoned predominantly for light and heavy industrial uses: warehouses, laydown yards, storage, fabrication, and road material and other light industrial uses. The *Industrial Lands Study* (Alaska Economic Development Corporation, 2009) describes that the parcel sizes vary widely from tens of acres to 7,500 square feet and are found in proximity to office, commercial, retail, religious and park mixed uses. There are two small spur lines off of the main track that service industrial businesses within the planning area.

Commuter Rail

The Matanuska-Susitna Borough and MOA LRTPs recommend the creation of a Regional Transit Authority (RTA) to oversee the creation of a commuter rail system connecting Anchorage and the Mat-Su Valley. An RTA would be multi-jurisdictional sponsoring agency that could provide the framework to authorize contracts, accept contributions, grants or loans, incur obligations and issue bonds, and acquire, manage

and convey real property under its mission. Enabling legislation was introduced in the Alaska 2009 Session, but did not pass.

The *2002 ARRC South Central Rail Network Commuter Study and Operation Plan* is being updated for current ridership estimates. The station locations and equipment (rolling stock) are anticipated to stay the same (Carr, 2009). A Wasilla-only commuter service would be the first phase of the project. A full-corridor scenario, that includes service to Girdwood, would involve stations at Dimond Center and Spenard (on Lois Drive between Spenard Road and 36th Avenue). There is no timeline for these projects, but they may require land outside the existing ROW (Carr, 2009).

Nonmotorized Facilities

A goal from the LRTP is to "Provide a transportation system that provides viable transportation choices among various modes." To implement this goal, the MOA developed a three-part *Nonmotorized Transportation Plan*. This includes an update to the *Area Wide Trails Plan* adopted in 1996, the *Anchorage Pedestrian Plan* adopted in 2007, and the *Anchorage Bicycle Plan* (an August 2009 *Public Hearing Draft* is the latest version). Please refer to the Recreation Chapter F for further discussion of paved and unpaved trails for recreational use.

Walking accounts for about 6% of the trips within Anchorage and bicycles account for about 1% (Anchorage Household Travel Survey - MOA, 2002). Fourteen percent of students surveyed in 2002 reported walking to school in the spring. The pedestrian facilities in Anchorage are divided into three categories: pathways (including multi-use paved pathways/walkways and sidewalks), paved greenbelt trails, and unpaved trails shown in Figure E-5. Bicyclists utilize a number of types of pedestrian facilities as well as the shoulder of roadways.

Walkways/Pathways, Sidewalks, and Multi-use Paved Trails

The *2007 Anchorage Pedestrian Plan* describes that the built environment influences the rate of walking trips and the distance to school influences the likelihood of walking there. In other words, more compact development encourages increased walking trips. The lowest rate of nonmotorized travel in West Anchorage is the Sand Lake area due to its low housing density, lack of mixed land uses, and lack of an established sidewalk/multiuse trail system (MOA, 2007a).

Pedestrian facilities are discontinuous in much of Anchorage due to the history of the development of the Anchorage Bowl. The Greater Anchorage Area Borough and City of Anchorage (pre-Municipality) maintained a "rustic" or "rural" character to its neighborhoods by not providing urban infrastructure including sidewalks (MOA, 2007a). Streets that serve as collectors typically require pedestrian facilities on both sides of the street. Many examples of collectors without pedestrian facilities are found in Sand Lake Community Council area: Strawberry Road, Jade Street, and Kincaid Road.

Today's subdivision standards (AMC 21.85.090) allow sidewalk construction on only one side of the street and cul-de-sacs with fewer than 300 average daily trips by vehicle do not need any sidewalks. Complete sidewalk networks are not found in the majority of West Anchorage neighborhoods. Impediments to pedestrian facilities include snow storage, utility poles, trash containers, and mailboxes. A complete list of priority projects

to connect walkways, sidewalks as well as requisite lighting and safe road crossings are found in the Appendix of the *Anchorage Pedestrian Plan*. The projects located in West Anchorage can be found in Table E-7.

Table E-7. Pedestrian Improvements from the Anchorage Pedestrian Plan

Priority	Projects	Improvement	Scheduled?	Include with another Road Project?
4a	Tudor Road - Lake Otis to Baxter	Crossings		
5	Benson Blvd & Spenard Rd - **# 5 Crash Location**	Missing Sidewalk	Yes	**Yes**
7	Spenard Rd - entire road walkable Chester Creek to Minnesota	Missing Sidewalk	Yes	**Yes**
12	Northern Lts Blvd & Spenard Rd - **# 3 Crash Location**	Crossing	Yes	Yes
13	Benson Blvd & Minnesota Dr - **#9 Crash Location**	Crossing	Yes	Yes
23	32nd Ave - Lois Dr to Minnesota Dr	Missing Sidewalk		
26	Wilson St. - 40th Ave to Tudor Rd	Missing Sidewalk		
51	Northern Lights Blvd – south side, LaHonda Dr to Lois Drive	Missing Sidewalk		
54	Molanary Drive - 86th Ave to 88th Ave	Missing Sidewalk		
57	Minnesota Dr & Northern Lts Blvd, **# 2 Crash Location**	Crossing	Yes	Yes
68	W. 36th Ave - Minnesota Dr to Fish Creek	Sidewalk		
73	Tudor at C St - better lighting for peds	Lighting	LRTP #705	Yes
83	36th Ave & Minnesota Dr	Crossing		
94	Lois Drive - Northern Lts to 36th Ave	Missing Sidewalk	Yes	
105	W. 88th Ave.– Jewel Lake Rd to Jewel Lake Park	Missing Sidewalk		
109	Hillcrest Crosswalks - Minnesota Dr ramp, Wildwood Dr, Spenard Rd	Crossings	Yes	Yes
123	Dimond Dr & Victor Road	Crossing	Yes	Yes
128	W. Dimond Blvd.- Sand Lake to Kincaid Park	Missing Sidewalk	Yes	Yes
135	Jewel Lake Rd. - east side 73 Ave to Weimer Dr and 82nd Ave to 88th Ave	Missing Sidewalk	LRTP #507	
137	Seppala St. - Northern Lts to Balto Seppala Park	Missing Sidewalk		
142	Balto Seppala Park & Lloyd Steele Park to School	Missing Link Walkway		
143	Aero Avenue – W. 36th Ave to W. 44th Ave	Missing Link Walkway		Yes
144	Hillcrest Dr – Atwood Dr to Spenard Rd	Missing Sidewalk		Yes
145	Fish Creek Trail - Barbara Drive Segment, 29th Ave to 32nd Ave	Missing Sidewalk		
148	Strawberry Road - to Jewel Lake Elementary School	Sidewalk/Crossing	Yes	Yes

Priority	Projects	Improvement	Scheduled?	Include with another Road Project?
175	Dimond Blvd - Jewel Lake Rd to Old Seward Hwy	Sidewalk Upgrade	Yes	Yes
176	W. 86th ROW – Blackberry St to Crystal St	Missing Link Wkay/Lighting		
178	Turnagain Elementary School - W. 29th Ave, Wisconsin to school	Missing SW/Lighting		
191	Turnagain St - W. Northern Lts To W. 35th(McRae)	Missing Sidewalk		
210	International Airport Rd at Jewel Lake/Spenard Rd	Special Crossing		Yes
213	McKenzie Dr - Northern Lights Blvd to Clay Products Dr	Missing Sidewalk		
215	Kincaid Road	Missing Sidewalk		
223	Cranberry St - Collins Way to Raspberry Rd	Missing Sidewalk		
245	Forest Park Dr - Northern Lights to Hillcrest Dr	Missing Sidewalk		
292	Cranberry St at Raspberry Rd	Crossing		
304	Collins Way - sidewalks	Missing Sidewalk		
306	Chevigny Hill - join north & south with s/w	Missing Link Walkway		
307	Postmark Drive - thru airport area-Lk Spenard to Earthq. Pk	Missing Sidewalk	LRTP #518	
	Additional Nominated Projects that Upgrade Existing Facilities or are Recreational			
	Pedestrian Safety and Rehab Matching Program	Missing Sidewalk		
	Marston Drive Spur to Coastal Trail	Upgrade Walkway		

Projects associated with roadway and ROW improvements to accommodate bicycle commuters are summarized in Table E-8 from the Draft *Anchorage Bicycle Plan*. Some projects are already scheduled as part of roadway improvements in the LRTP (found in Table E-5).

Draft recommendations for the bicycle network in West Anchorage out of the Bicycle Plan are included in Table E-7.

Table E-8. Recommended Bicycle Network in West Anchorage from Draft Bicycle Plan

Short Term 2009–2014	Intermediate Term 2014–2019	Long Term 2019–2029	Bicycle Network Project (Priority A projects: ✓)	Type	Construction Year[a]	Distance (miles)	Estimated Project Cost[b]
	sep. path		32nd Avenue – Cope Street to Arctic Blvd. at AWWU	DC		0.11	$132,000
shared			32nd Avenue – Spenard Road to Cope Street	S		0.15	$4,800
bicycle lane			35th Avenue – Spenard Road to Minnesota Drive	DC	2015	0.12	
	bicycle lane		35th Avenue/McRae Road – Wisconsin Street to Spenard Road	R	2011	0.15	
shared			36th Avenue – Fish Creek to Minnesota Drive	S		0.6	$20,000
bicycle lane			88th Avenue – Jewel Lake Road to Northwood Street	S, M		0.98	$32,000
sep. path			Aero Drive – Lakeshore Drive to Cosmos Drive	DC		0.56	$700,000
	sep. path		Alaska Railroad Crosstown Trail – Potter Marsh to Fish Creek	S		9.7	$25,600,000
shoulder			Arctic Boulevard – 68th Avenue to Tudor Road	S	2009-10	1.5	
shared			Arkansas Drive – Spenard Road to 36th Avenue	S		0.25	$8,000
shared			Aspen Road – Spenard Road to Northwood Drive	S		0.4	$28,000
shared			Business Park Blvd. – International Airport Road to 48th Avenue	S		0.28	$9,000
bicycle lane			✓ C Street – O'Malley to 10th Avenue	S		6.3	$220,000
	sep. path		✓ Campbell Trail Lighting	DC		4	$2,500,000
sep. path			✓ Chester Creek Trail – Goose Lake to Westchester Lagoon widening	DC		4	$4,000,000
		sep. path	Chester Creek Trail – repaving to correct tree roots.	DC			$2,000,000
		sep. path	✓ Coastal Trail – connection to Ship Creek Trail	DC		0.64	$1,700,000
		sep. path	✓ Coastal Trail – Westchester Lagoon to Earthquake Park widening	DC		2.5	$2,500,000
	sep. path		Dimond Boulevard – Jodphur Street to Sand Lake Road	R	2013	1.5	
	shared		Dimond Boulevard – Jodphur Street to Sand Lake Road	R	2013	1	
bicycle lane			✓ Dimond Boulevard – Sand Lake Road to Jewel Lake Road	S		1.04	$34,000
study area			✓ Dimond Blvd. at Victor Road – reconnaissance study	DS			$500,000
bicycle lane			Fireweed Lane – Spenard Road to Seward Highway	R	LRTP	1.25	
		sep. path	Fish Creek Trail – Spenard Road to Northwood Drive	DC		0.34	$1,000,000
shoulder			Forest Park Drive – Hilltop Drive to Coastal Trail	S		0.34	$11,000

Short Term 2009–2014	Intermediate Term 2014–2019	Long Term 2019–2029	Bicycle Network Project (Priority A projects: ✓)	Type	Construction Year[a]	Distance (miles)	Estimated Project Cost[b]
shoulder			Forest Park Drive – Northern Lights Blvd. to Hilltop Drive	S		0.34	$11,000
shared			International Airport Road/Frontage – Spenard Road to Northwood Drive	S		0.5	$16,000
		sep. path	International Airport Road – Southampton Drive to Business Park	R		0.57	$705,000
		bicycle lane	International Airport Road – Southhampton Drive to Homer Drive	R		1.6	$510,000
bicycle lane			✓ Jewel Lake Road – Dimond Blvd. to International Airport Road	D	LRTP	2.8	
shared			Jodphur Street – Dimond Blvd. to Kincaid Road	S, M		0.58	$20,000
	sep. path		Kincaid Park link – Jodphur Street to Raspberry Road	DC		0.30	$750,000
shared			Kincaid Road – Jodphur Street to Sand Lake Road	DC		1.0	$32,000
		sep. path	Kincaid Road – Jodphur Street to Sand Lake Road	DC		1.0	$2,400,000
shoulder			Lake Hood Drive – Postmark Drive to West Northern Lights Blvd.	DC		0.45	$15,000
	study (Area C)		Midtown east-west routes – reconnaissance study	S			$1,000,000
shoulder			Milky Way Drive – Aero Drive to Wisconsin Street	S		0.5	$16,000
shoulder			Northwood Drive – International Airport Road to Spenard Road	S		0.6	$20,000
	bicycle lane		✓ Northwood Drive – 88th Avenue to Raspberry Road	DC		1.25	$40,000
	bicycle lane		✓ Northwood Drive – Dimond Blvd. to 88th Avenue	R	2012	0.25	
bicycle lane			Postmark Drive – International Airport Road to Pt. Woronzoff Drive	R		1.6	$51,000
shared			Potter Drive – Fairbanks Street to Arctic Blvd.	S		0.75	$24,000
bicycle lane			✓ Raspberry Road – Kincaid Park entry to Minnesota Drive	S, M		3.4	$109,000
bicycle lane			✓ Raspberry Road – Arctic Blvd. to C Street	S, M	LRTP	0.15	
bicycle lane			Sand Lake Road – Dimond Blvd. to Raspberry Road	S, M		1.5	$48,000
	bicycle lane		Spenard Road – Minnesota Drive to Benson Blvd.	R	LRTP	0.75	
shoulder			Spenard Road – Benson Blvd. to Hillcrest Drive	R	2009	0.6	
sep. path			Spenard Road – Hillcrest Drive to 17th Avenue	R	2009	0.3	
shoulder			Strawberry Road – Jewel Lake to Northwood Road	S		1	$32,000
sep. path			✓ Tudor Road – Elmore Road to Minnesota Drive	DC		3.5	$4,350,000

Short Term 2009–2014	Intermediate Term 2014–2019	Long Term 2019–2029	Bicycle Network Project (Priority A projects: ✓)	Type	Construction Year[a]	Distance (miles)	Estimated Project Cost[b]
shoulder			✓ Tudor Road – Minnesota Drive to Old Seward Highway	S		1.5	$48,000
shared			✓ Turnagain Parkway – Northern Lights Blvd. to Illiamna Street	S		0.3	$10,000
bicycle lane			✓ Victor Road – 100th Avenue to West Dimond Blvd.	R	2010	0.5	
sep. path			✓ Victor Road – 100th Avenue to West Dimond Blvd.	R	2010	0.5	
	sep. path		Walkway Lighting Program – various areas	DC		5	$3,000,000
	sep. path		West Northern Lights Blvd – Lois Drive to Arlington Drive	DC		0.15	$185,000
bicycle lane			✓ Wisconsin Street – Spenard Road to Northern Lights. Blvd.	S, M		1.23	$40,000
				West Anchorage Estimated Cost:			**$54,294,000**

Table Legend

bicycle lane	Bicycle Lane
shoulder	Paved Shoulder Bikeway
sep. path	Separated Pathway
boulevard	Bicycle Boulevard
shared	Shared Road
sweep	Sweeps
study	Special Study Area

Project Type

S	Add signage
M	Add striping & markings
DC	Design, construction
R	Design, construction with road project
DS	Design study

✓ Indicates that the project is a top-priority or Priority A, project. Projects have been identified as Priority A based on either inclusion in the core bicycle network or locations with a high number of bicycle-vehicle crashes, plus the presence of road width sufficient to add bicycle lane marking.

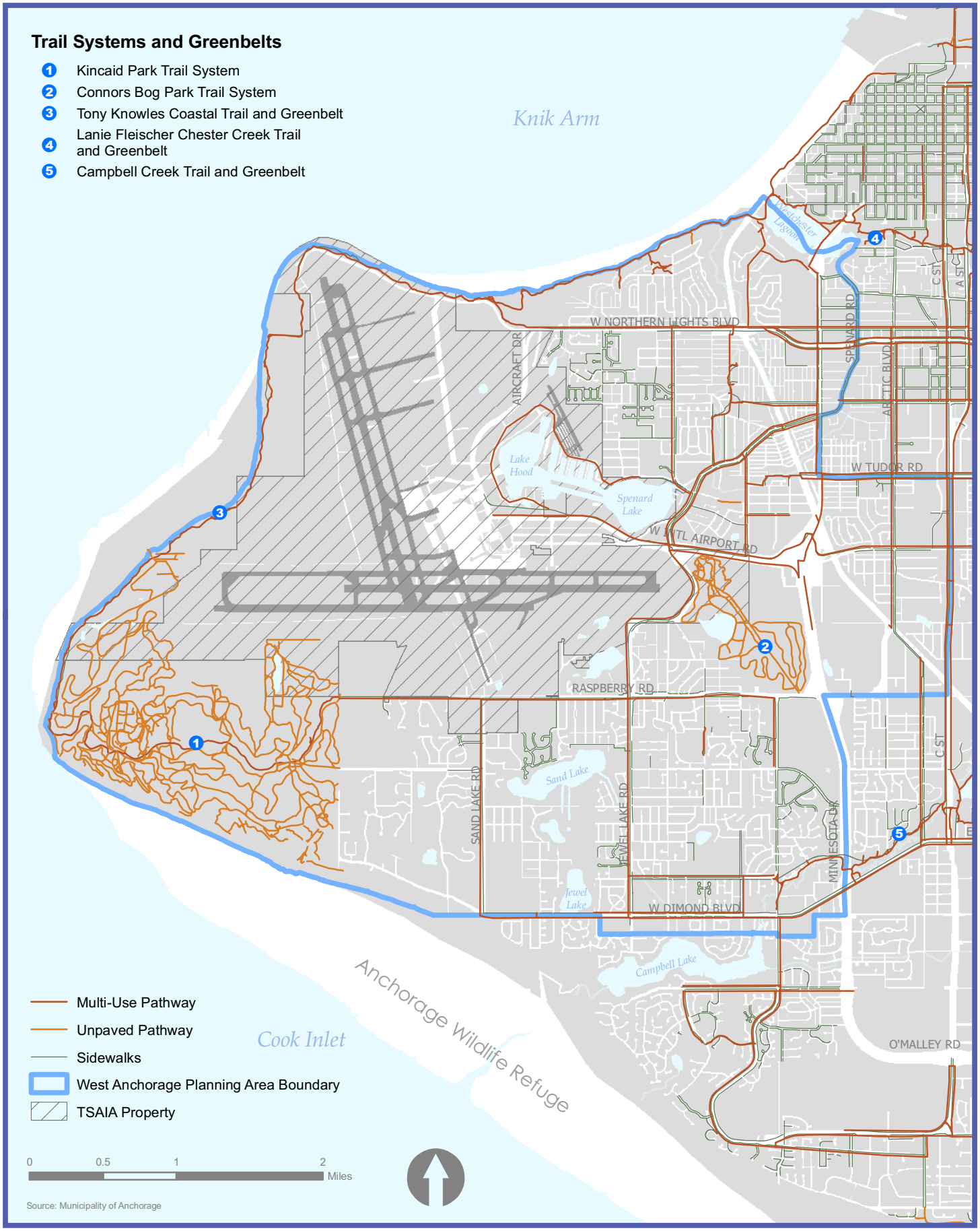
Notes:

On-road bicycle lanes are the preferred facility and are contingent on establishing and identifying a plan for funding and maintenance.

[a] LRTP indicates that the project is listed in the *Anchorage Bowl 2025 Long-Range Transportation Plan with 2027 Revisions* (2025 LRTP).

[b] Costs are estimated for striping and signage projects and for other bicycle network projects that are not scheduled in the 2025 LRTP or other Capital Improvement Plan.

The Draft *Anchorage Bicycle Plan* recommends further study for certain areas including a Midtown east-west reconnaissance study, an ARRC Crosstown Trail from Potter's Marsh to Fish Creek, a study of Dimond Boulevard at Victor Road, and some city-wide improvements to lighting and signnage.



West Anchorage District Plan

Exhibit E-5: Pedestrian Pathways and Nonmotorized Trails

Walkways - Walkways typically connect neighborhoods and may be narrower than sidewalks or other pedestrian facilities. An example of an effective walkway is the one connecting the West High School parking lot to the Belmont neighborhood in Turnagain.

There are about 180 miles of multi-use paved trails in the Anchorage Bowl located within parks, greenbelts, and along road ROWs. Popular paved trails in West Anchorage shown in Figure E-5 include: a portion of the Coastal Trail on the western edge of the planning area, a portion of the Fish Creek Greenbelt Trail, and the Jewel Lake Road separated pathway. The route of the popular walkway around Lake Hood Seaplane Base (LHD) is composed of separated walkways and widened road shoulders for a shared surface (shown in Figure E-6). The routing around Aircraft Drive is shared-use and can cause potential safety issues for aircraft and walkers/bikers. Winter use of numerous pathways in West Anchorage is discussed in greater detail in the *Nonmotorized Transportation Plan*.

Figure E-6. Pedestrian Walkway and Shared Surfaces at LHD Seaplane Base

Source: ADOT&PF, 2009

Interpretive Trails can be paved or unpaved. These trails typically include displays of cultural and historical information or increase awareness of the sensitivity of different habitats within the Anchorage Bowl. Examples of displays can be found along the Coastal Trail, Westchester Lagoon, and Earthquake Park.

Unpaved Trails

The *Areawide Trails Plan* was last updated in 1997 and it will be updated as the last element of the new *Nonmotorized Transportation Plan*. In general, unpaved trails are utilized for winter and summer recreational purposes like walking/jogging, cross-country skiing, equestrian use, and mountain biking. The

predominant unpaved trails in West Anchorage are located in Kincaid Park, on airport property near Kincaid Park, and around Connors Lake and Bog.

Aviation Facilities

TSAIA General Overview

The largest air transportation facility in Alaska is located in West Anchorage. ADOT&PF owns and operates Ted Stevens Anchorage International Airport (TSAIA/ANC[1]). It serves local, regional, state, national, and international aviation needs. The airport mission of ADOT&PF is to, "safely, effectively, and efficiently operate and maintain the airport consistent with federal regulatory requirements, high customer service standards, sensitivity to user needs, and awareness of community goals" (ADOT&PF, 2009).

> "Big Wild" Facts about our Airport: The TSAIA direct and indirect economic impact to Anchorage is substantial with over 18,400 jobs on- and off-site (1 in 8 Anchorage jobs) as well as contributing $850 million annual payroll ($1 in $8 in wages) (ISER, 2007). TSAIA is located within 9.5 hours of 90% of the industrialized world. TSAIA is the 5th largest airport in the world in terms of cargo throughput (Airports Council International, 2009).

TSAIA has an Airport Master Plan for ANC that utilizes airport development goals established after review of previous master plans, identification of current issues at the airport, interviews with airport staff, discussions at airport stakeholder meetings, and technical, agency and public meetings (ADOT&PF, 2009). The following goals were used to select the best concept for airport development:

Goal 1: Enhance airport safety.

Goal 2: Limit and mitigate adverse environmental impacts as practicable.

Goal 3: Maximize economic benefit to Southcentral Alaska, the State of Alaska, and the national air transportation system.

Goal 4: Enhance effectiveness, efficiency, and customer service; meet the needs of Airport users; and balance air transportation needs with other ANC goals.

Roles in Airport Operations

The State of Alaska Department of Transportation & Public Facilities owns and manages ANC and LHD airports under the Ted Stevens Anchorage International Airport Division in the ADOT&PF Central Region.

TSAIA Management is responsible for the day to day operations at the airport. These include developing short and long term planning priorities, overseeing construction activities, managing airline flight schedules, dealing with public relations activities, applying for and demonstrating compliance with FAA grants.

[1] The acronym TSAIA represents the operating body and ANC represents the international code for the airport. Lake Hood Seaplane Base is operated by TSAIA, but its airport code is LHD.

The FAA serves in an oversight capacity with regard to airport operations and development. These include providing guidance on federal aviation laws and regulations, overseeing the utilization of airspace and control of aircraft flight; implementing flight standards (airworthiness of aircraft and noise emissions of aircraft, for example); establishing navigation aids and other facilities necessary to provide a safe and efficient air system, administering aviation grants and ensuring that airports that receive federal funding are in compliance with grant assurances.

Airport Features

Air transportation-related activities take place within the following TSAIA property land use categories: Airfield, Passenger Terminal Complex, General Aviation and Lake Hood, Commercial Aviation, Air Cargo, Aircraft Maintenance, Airport Support, Aviation-related Commercial, and Governmental/Other. These land use types within the TSAIA property are shown in Figure C-3.

The airfield complex at ANC consists of three runways (two east-west: 7R-25L and 7L-25R, and one north-south: 14-32) and an extensive system of taxiways, aprons, facilities, and navigational equipment to accommodate the operational characteristics of the entire active world wide fleet of passenger and cargo aircraft under most weather conditions.

Access and Parking

TSAIA is accessed primarily by International Airport Road. Secondary access to the airport is provided by Northern Lights Boulevard, Jewel Lake Road at Old International Airport Road, and Raspberry Road.

International Airport Road is a four-lane controlled access expressway. The west end of the road transitions to a loop serving the South Terminal. Exit ramps provide access to the North Terminal, vehicle parking, the railroad depot, and the Air Traffic Control Tower.

Northern Lights Boulevard is a two-lane minor arterial (west of Wisconsin Street) with center turn pockets to access side streets. East of Wisconsin Street, it widens to four-lanes; vehicles larger than ten tons are prohibited from using this road. West of Aircraft Drive, the road is named Point Woronzof Drive, where it downgrades to a collector classification, providing access to the west side of the airport.

Raspberry Road is a minor arterial (west of Jewel Lake Road) that provides access to the South Airpark area and Kulis Air National Guard (ANG) Base on the southern side of the airport. The 176th Wing will move from Kulis AHG Base to Elmendorf Air Force Base by the end of 2011 as part of the Base Realignment and Closure process. The west end of Raspberry Road terminates in Kincaid Park.

Jewel Lake Road is a major arterial that begins at International Airport Road and continues through the eastern side of the airport until it cross Raspberry Road and continues south. It has three lanes from International Airport Road to Coronado Street, and then switches to two travel lanes with a center turn lane until Raspberry Road.

TSAIA Operations

The total number of operations (takeoff and landing) that have occurred at ANC increased from 221,259 in 1990 to 246,019 in 2005 (TSAIA, 2009 Table 2.2.20). This includes a slight decrease in passenger aircraft operations, with more among international carriers. Air cargo operations on the other hand have more than doubled over the same time period. Lake Hood operations have decreased from 89,959 in 1996 to 69,502 in 2005 (U.S. Census, 2006).

Air Cargo

Air cargo traffic flowing from Asia to North America accounts for the majority of air cargo traffic at TSAIA. U.S. air cargo operators include FedEx, UPS, and major airline air cargo divisions; foreign carriers include Air China, China Cargo, Cathay Pacific and others. Table E-9 demonstrates an air cargo peak in 2006, but generally strong cargo tonnages for the last ten years.

Table E-9. Historical International Air Cargo Flow at ANC (in tons in year)

Year	Cargo Aircraft Landed Weight (billions of pounds)	Transfer Traffic (e.g. FedEx, USPS)	Refueling Traffic
1995	11	TSAIA provided this as a bar chart- they promised to check accuracy of values. Also asked for other data to populate these two columns.	
1997	13		
2000	16		
2002	17.5		
2005	21		
2006	22		
2007	19		
2008	19		
Average Annual Growth Rate 1997-2008	TSAIA to provide		
Source: TSAIA, 2008 Presentation to Chamber of Commerce; TSAIA, 2009c			

ANC is consistently one of the top national airports for cargo landed weight and ranked 5th in the world for total cargo weight at 2,339,831 metric tons in 2008. A snapshot of total cargo in 2008 (Table E-10) ranks Anchorage second below Memphis, TN.

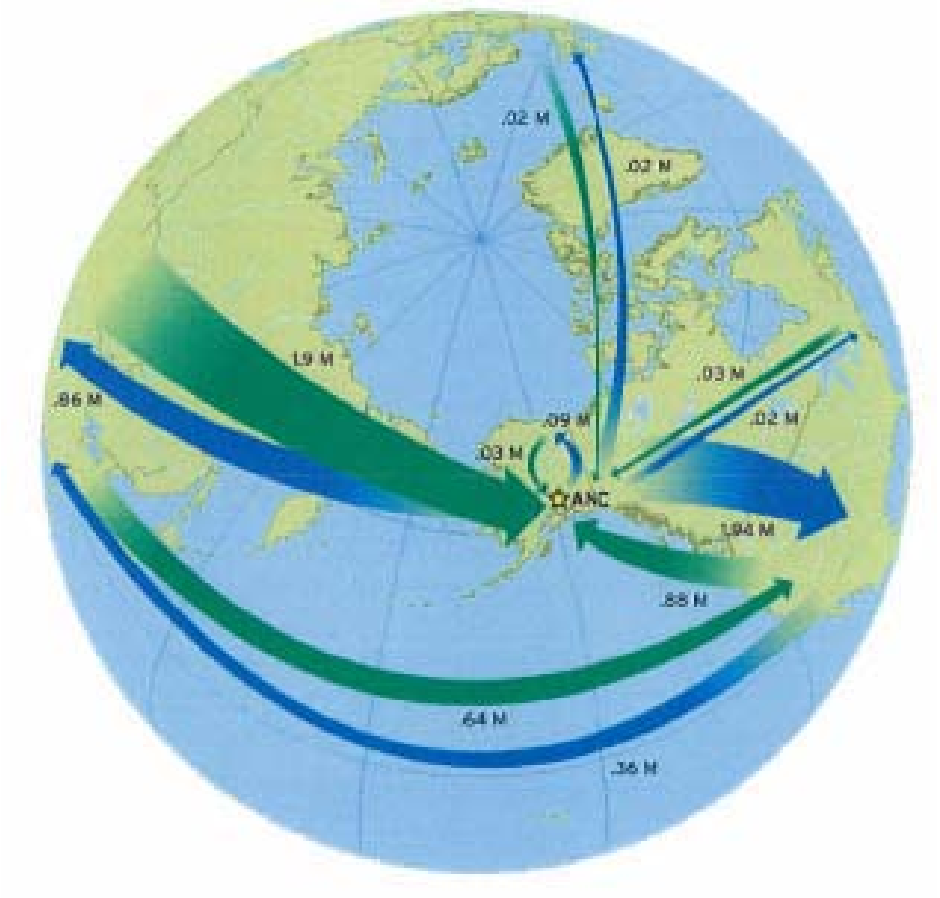
Table E-10. Top Ten U.S. Airports for Cargo Landed Weight (2008)

Rank	Airport	Total Cargo (billions of pounds)	% Change from previous year
1	Memphis (MEM)	19.5	-0.22
2	Anchorage (ANC)	17.9	-15.02
3	Louisville (SDF)	10.4	0.14
4	Miami (MIA)	6.9	-5.94
5	Los Angeles (LAX)	5.7	-16.17
6	Indianapolis (IND)	5.1	-3.32

7	John F Kennedy (JFK)	4.4	-13.1
8	Chicago (ORD)	4.2	-4.42
9	Oakland (OAK)	3.4	-3.83
10	Newark (EWR)	3.4	-7.84
Source: TSAIA, 2009c from FAA http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/			

Outbound air cargo from ANC to the rest of the state, on carriers like Everts Air Cargo or Alaska Central Express Air Cargo, is generally three times more tonnage than inbound air cargo to ANC. Table E-8 summarizes the cargo tonnage transported to major communities within Alaska. Figure E-7 depicts a generalized flow of air cargo associated with ANC expressed in millions of tons (M). The vast majority of goods traveling to ANC are from overseas with a final destination in North American markets. In FY 2009, there were approximately 70 widebody freighter aircraft landings per day at ANC.

Figure E-7. Distribution of North Pacific Air Cargo Flows (millions tons)



Source: Airport Master Plan Update Figure 2.2.1 (ADOT&PF, 2009)

Intra-state air cargo values are provided in Table E-11.

Table E-11. Intra-State Air Cargo (Freight and Mail) Flows (in tons in 2008)

Outbound			Inbound		
Market	**Tonnage**	**Percent**	**Market**	**Tonnage**	**Percent**
Bethel	23,583	23.9%	Fairbanks	3,774	15.3%
Nome	12,278	12.4%	Kodiak	3,585	14.5%
Kotzebue	11,816	12.0%	King Salmon	1,701	6.9%
Fairbanks	7,358	7.4%	Bethel	1,622	6.6%
All Others	43,837	44.3%	All Others	14,024	56.8%
Alaska Total	98,872	100%	Alaska Total	24,704	100%
Source: 2009 TSAIA Master Plan Update (Table 2.2.14); TSAIA, 2009 BTS T-100 Segment all Carrier					

Aviation serves as a common means of transport within the state of Alaska because of the limited road system, vast geography, sparse population, and challenging topography. Intra-state aviation travel is used in isolated communities for the same purposes that surface travel is used for communities on the road system; recreation, health care, shopping, and attending events. The majority of intra-state travel is work-related or visiting relatives. Tourism represents a smaller percentage of passengers. In 2005, there were approximately 802,000 passengers on intra-state flights originating or ending at ANC (TSAIA, 2009). (The total population of MOA in 2005 was 266,281).

Historically, intra-state travel (a portion of the domestic travel shown in Table E-12) is low but shows steady growth. It is not affected as much by fuel prices or the national economy because the transport of passengers and cargo is generally deemed essential when roads are not available (TSAIA, 2009).

Table E-12. Historical Passenger Enplanements[a] at ANC

Year	Domestic Commercial Carrier[b]	International	Total[c]
1998	2,106,964	39,981	2,146,945
2000	2,161,802	36,012	2,197,814
2002	2,209,301	36,565	2,245,866
2004	2,333,264	26,057	2,359,321
2006	2,565,097	24,717	2,589,814
2008	2,106,964	39,981	2,146,945
Average Annual Growth Rate 1998-2008	1.9%	-6.0%	1.8%

Source: TSAIA, 2009b

[a] Each enplanement is counted as a "revenue passenger" boarding an aircraft.

[b] Includes Domestic Air Taxi ("for hire") passengers.

[c] Values are estimates due to inconsistencies with airline passenger reporting.

International transit passengers have decreased substantially in the last ten years due to the introduction of long-range aircraft that do not require refueling and the opening of Russian airspace to Asia-Europe flights (TSAIA, 2009).

General Aviation

West Anchorage houses what is believed to be the busiest seaplane base in the world, Lake Hood Seaplane Base (LHD), on the TSAIA property. LHD and ANC maintain a large proportion of GA traffic for the Anchorage area, in part because the largest number of active pilots and registered aircraft in the state are in the Anchorage area (ADOT&PF, 2006).

The *General Aviation Master Plan for Lake Hood Seaplane Base and Anchorage International Airport* (*GA Plan*) (ADOT&PF, 2006) describes that approximately 1,090 GA aircraft are based at ANC and LHD. Floatplanes, skiplanes, and large turbojet business aircraft flown by private or recreational pilots are the kinds of aircraft covered by the *GA Plan*.

The *GA Plan* goals encompass community, TSAIA, and FAA values in order to select the best concept for airport development:

Goal 1: Develop the LHD in a manner that enhances safety.

Goal 2: Develop the LHD in a fiscally responsible manner.

Goal 3: Meet the needs of all LHD users.

General Aviation Operations

GA activity is another important mode of transportation that provides Anchorage area residents and tourists access to isolated areas of the state. To a smaller degree, GA provides rural residents access to the Anchorage area. GA activity reached 200,000 aircraft operations in 1985 with almost 1,200 based aircraft at Lake Hood. Overall GA activity has declined steadily since a peak in 1991, due to a number of factors, including socioeconomic, aircraft utilization, maintenance and purchase costs and pilot trends (ADOT&PF, 2006). Master planning efforts have been adjusted to meet these trends.

Table E-13 is an excerpt from an historical GA activity table in the *GA Plan* that found GA operations at Lake Hood declined about 2.4 percent per year from 1989-2003 and GA operations at ANC declined an average of 1.4% per year over the same period.

Table E-13. Historical General Aviation Operations

Year	Lake Hood Operations	ANC Operations	Total
1989	82,505	85,714	168,219
1992	81,486	71,696	153,182
1995	89,638	57,970	147,608
1997	82,208	60,254	142,462
2001	67,683	68,115	135,798
2003	58,354	70,723	129,077
2005	Data coming from TSAIA		
2007			
Average Annual Growth Rate 1989-2003	-2.4%	-1.4%	-1.9%
Source: 2006 GA Plan (Table 2.4)			

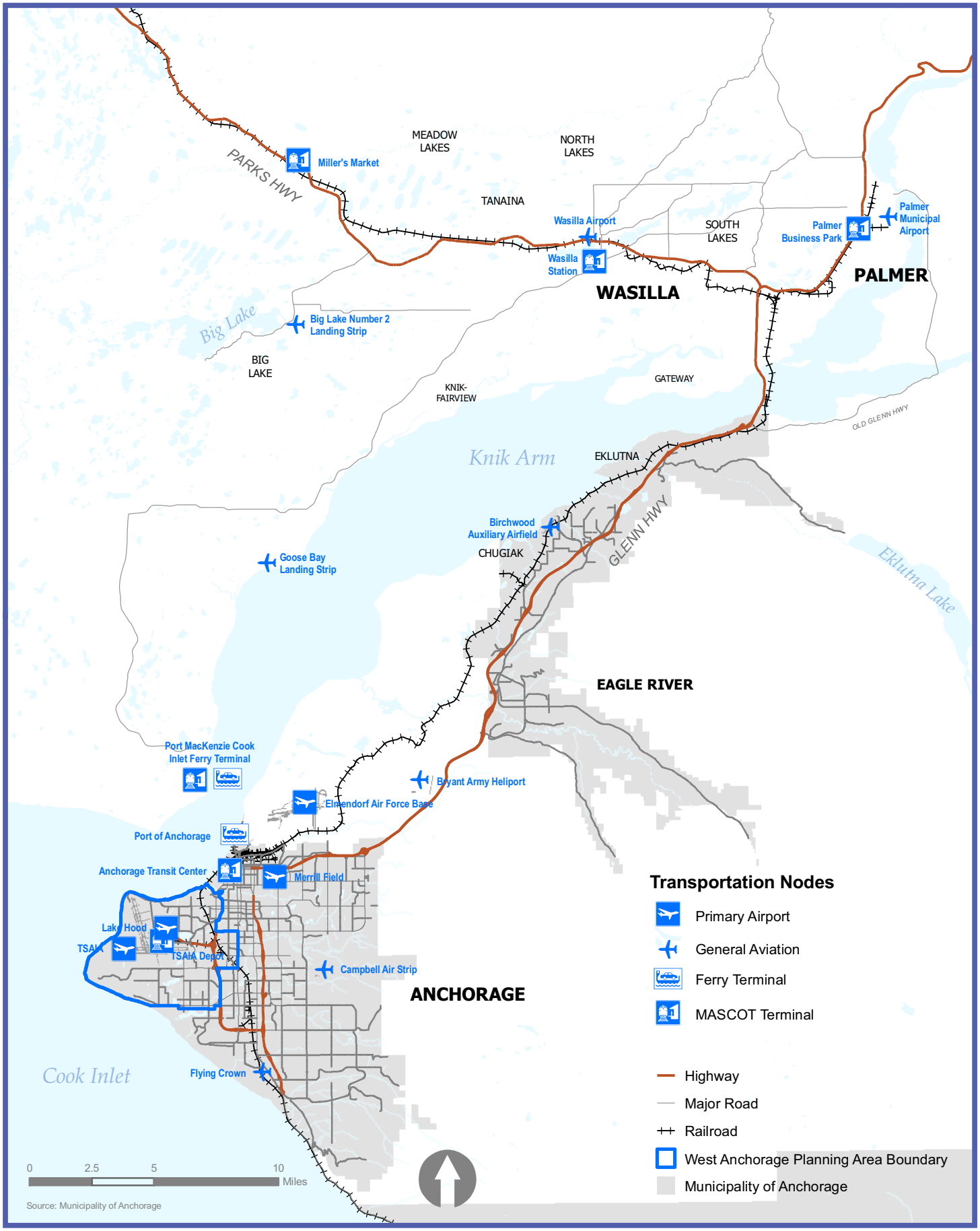
Regional Connections and Constraints

West Anchorage is connected to Anchorage and the rest of the state and the world by its regional transportation hubs and corridors. Figure E-8 illustrates the intermodal transportation system (including airports, train depots, and the National Highway System) around Anchorage. There are 15 neighboring airports within 50 nautical miles of ANC, including two military runways, many which are identified in Figure E-8. Figure E-8 also contains the proposed Knik Arm Crossing and the proposed Cook Inlet Ferry projects connecting downtown to Port MacKenzie.

There are constraints to freight distribution in West Anchorage due to numerous features of our surface road network including: road delays, congestion at intersections, poor signal timing, road restrictions, and intersection geometry. For example, the length of trucks can make the execution of turns at busy intersections very difficult. An AMATS *2001 Freight Mobility Study* identified constraints to freight distribution in Anchorage. Outside the study area, several constraints were related to the POA and train operations near POA.

Noise

There are several predominant sources of human-made noise in West Anchorage: aircraft, surface transportation, construction and industrial activity, and recreational activity (sports games, remote control toys, motorized bikes). Sources of natural noise include wind/storm, moving water, and wildlife.



West Anchorage District Plan

Exhibit E-8: Regional Connections

Aircraft Noise

Aircraft are a significant source of noise in the Anchorage area. Within a 6-mile radius in the Anchorage Bowl, there are four airports with overlapping departure and arrival routes (e.g. TSAIA, Lake Hood Seaplane Base, Joint Base Elmendorf – Fort Richardson, and Merrill Field Municipal Airport). Specifically, as TSAIA cargo operations have grown, the surrounding residential and recreational areas have experienced an increase in aircraft noise exposure. The airports operate a diverse fleet of aircraft, ranging from high speed fighter jets, Boeing 747 cargo jets, to small float planes. A special section of Title 14 of the U. S. Code of Federal Regulations (FAR) establishes how air traffic is segregated among these airports, and the controlled airspace, which is complex and non-standard.

Title 14 CFR Part 150 is the federal regulation that guides Airport Noise Compatibility Planning. The regulations provide a balanced approach for reducing aircraft-generated noise impacts on neighboring residential communities, as well as protecting airport access and maintaining the efficiency of the national aviation system. The Part 150 study is based on a weighted average of aircraft noise throughout the year and does not address noise caused by ground based airport operations (such as start-of-takeoff, thrust reversers, aircraft taxiing _and idling, use of auxiliary power units [APU], aircraft maintenance ground run-ups, and airfield maintenance activities) or from a single individual aircraft flight (any given flight can generate noise that is louder or softer than the annual average). Airports are not required to complete Part 150 studies, but many airports choose to participate because Part 150 provides a mechanism in which to receive federal funds to implement measures approved in the noise compatibility plan.

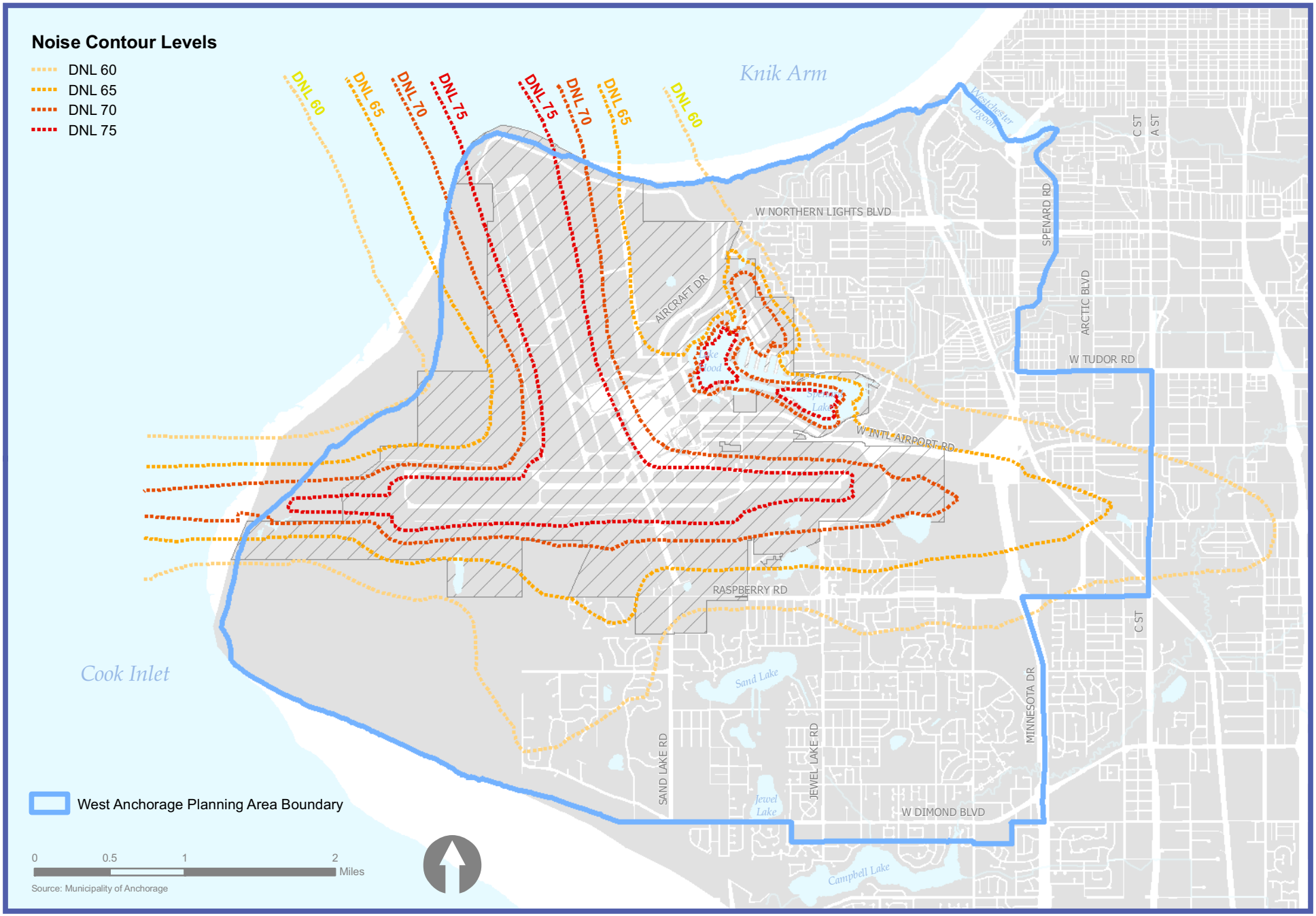
The Part 150 process has two steps. The first step requires the development of Noise Exposure Maps (NEMs) to depict noise levels generated by aircraft (i.e., takeoffs, landings) in areas around airports. The FAA has identified the annual Day-Night Sound Level (DNL) as the approved metric for evaluating impacts of aircraft noise. DNL is the energy average A-weighted sound level (in decibels [dB]) during a 24-hour period, obtained after addition of 10 dB to levels measured during nighttime hours (10:00 p.m. to 7:00 a.m.) to account for sensitivity of people sleeping. The FAA's Integrated Noise Model (INM) is the standard computer-based noise modeling methodology used to estimate the annual DNL associated with airport noise. The annual DNL contours represent annual average conditions and take into account times when aircraft noise events are occurring as well as the periods when no noise events are occurring (referred to as ambient noise). The DNL metric has been found to closely correlate with community annoyance from noise sources (see the Federal Interagency Committee on Aviation Noise (FICAN) website for more information on community annoyance (http://www.fican.org/).

The second step includes the development of a Noise Compatibility Program (NCP) designed to reduce the population and non-compatible land uses within an airport's noise contours. TSAIA has developed an NCP based on the 1999 Part 150 study.

TSAIA's latest official Noise Exposure Map was accepted by the FAA in 1999 (Figure E-6) and illustrates noise contours at 60 dB DNL and above. Non-compatible land use, within 65 dB DNL contour and above, generally includes residential and educational use. There are almost 700 estimated residential *units* (not buildings) within the 65 dB DNL contour (MOA, 2009f). In addition to residential uses, schools, churches, health care facilities, and park/historical sites located within 75 dB DNL or higher are considered to be non-compatible land uses.

General Aviation Noise

Although general aviation (GA) aircraft operate throughout Anchorage, many of these aircraft operate at the Lake Hood Seaplane Base. This base is one of the busiest seaplane bases in the nation with significant variations between summer and winter flight activity. TSAIA's 1999 Part 150 Study Update included Lake Hood. A seasonally adjusted DNL map (Figure E-10) was created for Lake Hood at that time. An update is expected soon. The Lake Hood GA Master Plan Study finds that there are residences within the 65 dB DNL contour, but additional modeling is required to determine potential impacts under various development scenarios.



West Anchorage District Plan

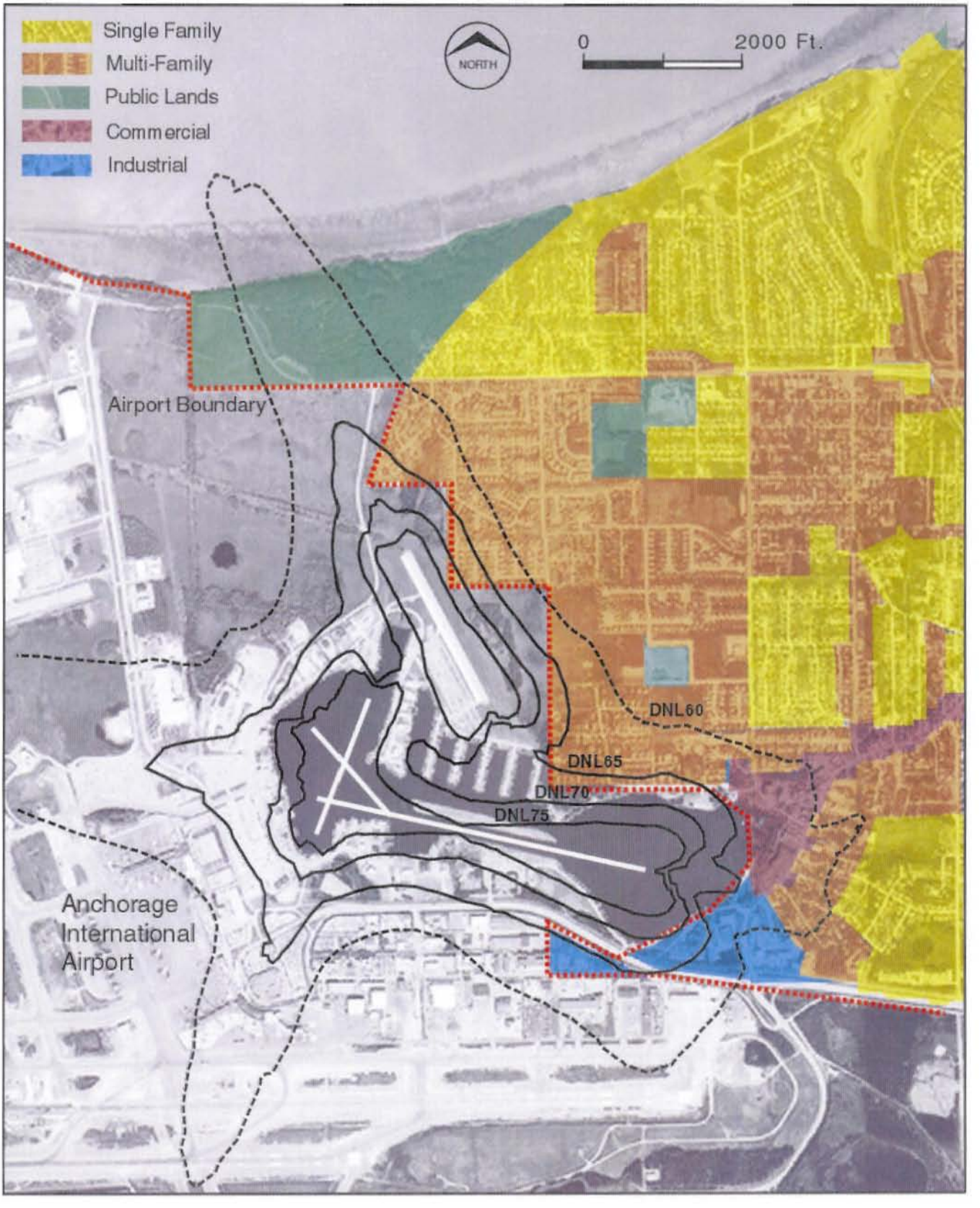
Exhibit E-9: TSAIA Noise Contours

Figure 5.7

Anchorage International Airport

Lake Hood Float Plane Base 1997 Seasonally Adjusted DNL Contours

HNTB



TSAIA Noise Compatibility Program

There are two main types of measures that reduce noise impacts within the 65 dB DNL noise contour and higher: operational noise abatement measures (designed to reduce noise) and land use measures (designed to reduce the number of people affected). Operational measures are generally implemented by TSAIA, FAA or airlines to change flight paths and times, runway use patterns, or ground operations. Land use measures are generally implemented by the MOA or builders and include changes in land use or land use zoning to reduce or minimize future construction of non-compatible land uses within high level noise contours. Examples of land use measures include zoning restrictions, sound insulation of buildings (pre- or post-construction), and disclosure of noise levels to home buyers and builders. Often, the most effective approach is a combination of techniques, such as enacting both zoning and building code requirements.

Post-construction sound insulation (funded by the FAA and the TSAIA) is currently being applied to residences previously identified in the 1999 Part 150 study as being within the 65 dB DNL noise contour. FAA noise compatibility regulations restrict use of federal funds for noise mitigation purposes for non-compatible development permitted after October 1, 1998. As a result of this rule, it is important to include requirements that incorporate sound attenuation measures during construction of residential dwellings and schools located in noise-sensitive areas.

TSAIA has also installed a Flight Track and Noise Monitoring System as part of the Noise Compatibility Program. The Flight Track component of the system allows TSAIA to monitor the flight path, altitude, and speed of aircraft that arrive, depart, or transfer through the airspace over Anchorage and match them to dB levels captured by the Noise Monitoring portion of the system. TSAIA currently uses eight permanently noise monitors in the surrounding community to measure aircraft noise exposure 24 hours a day.

386 homes have received RSIP to date with 148 apartments and 20 homes planned in 2008 (TSAIA, 2009). Since 1998, approximately 37 new parcels have been constructed within the 65 DNL contour that do not qualify for FAA sound attenuation funding.

Aircraft Operational Ground Noise

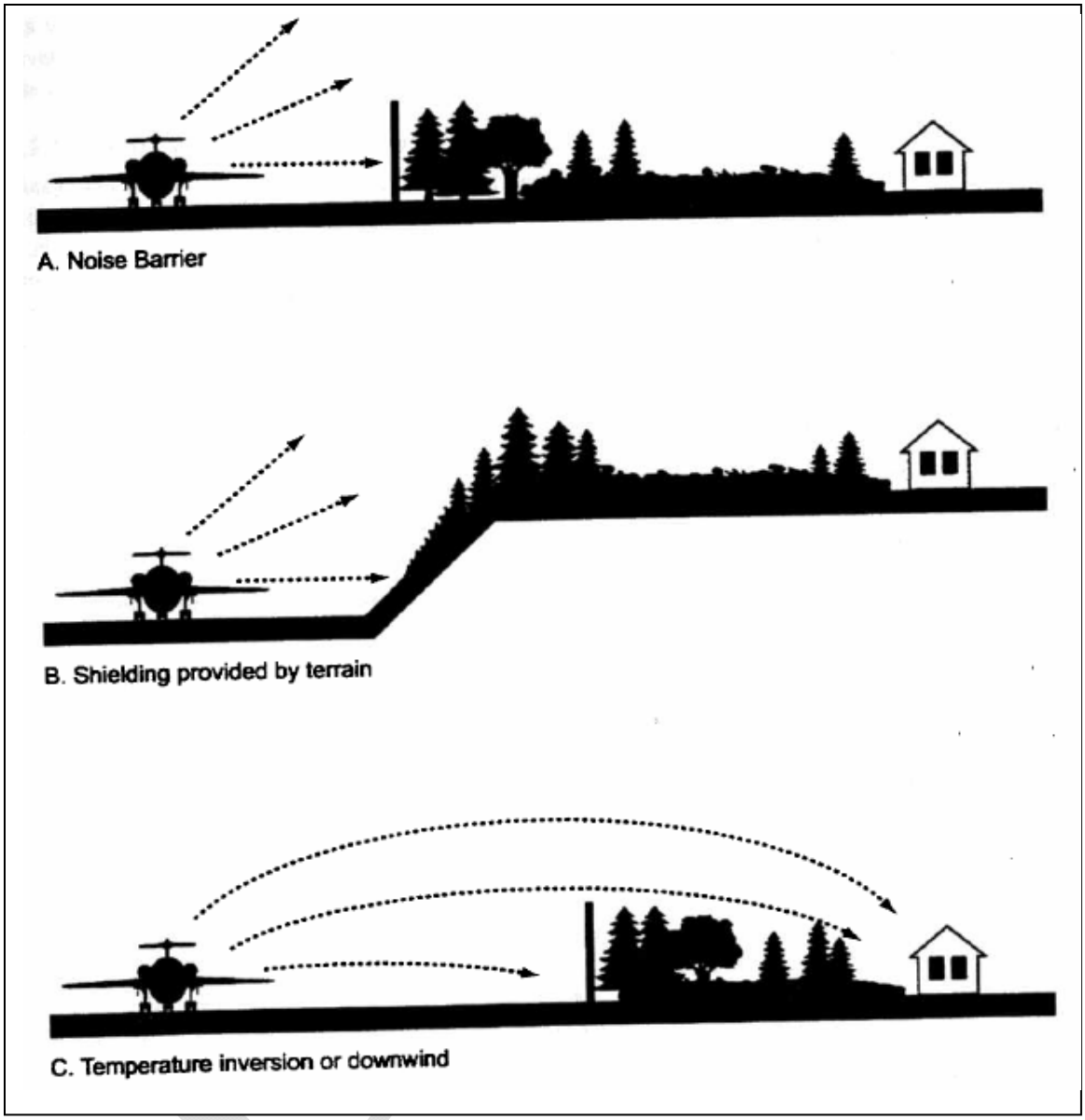
Noise from ground operations at TSAIA also contributes to overall noise levels in the community. Different ground activities have different noise characteristics in terms of loudness, duration, frequency (low frequency rumble or high frequency whine), time of occurrence, and proximity to residential neighborhoods. Short duration, loud events include start-of-takeoff roll, use of thrust reversers, GA aircraft startup procedures. Longer duration, relatively quieter events include aircraft taxiing and idling, use of APUs (used to provide electrical power and heat to aircraft when they are on the ground), airfield maintenance equipment, and snow removal equipment. These operations are not included the Noise Exposure Maps generated during the Part 150 process. TSAIA conducted a ground noise study in 2002 to estimate noise levels from these operations. The results of this study recommended various noise reduction measures for the

airport, some of which have been implemented. It is important to note that not all noise reduction measures are feasible because they must also meet Part 150 requirements. Furthermore, commonly used means of mitigating noise (such as berms or noise barriers shown in Figure E-11) may not be effective for attenuating ground operations at more than the first row of residential homes (TSAIA, 2002).

Some of the measures implemented include:

- Preferential runway use whenever feasible to reduce start of takeoff, reverse thrusters, etc.
- Implement voluntary reduced-engine taxi procedures
- Provide ground power outlets at some terminals and cargo facilities to reduce use of APUs or use of APUs where exhaust directed away from residential areas
- Limit some nighttime ground activities when feasible

Figure E-11. Noise Barrier Concepts



Source: TSAIA Comprehensive Ground Noise Study Final Report, 2002 (Figure 7-1.2)

Surface Transportation Noise

Another significant source of noise in the West Anchorage area is surface transportation. For new projects funded by the Federal Highway Administration (FHWA) or the State of Alaska, a study to determine potential noise impacts on residential areas is required. As part of these studies, existing noise levels from surface transportation are measured and future noise levels based on forecasted traffic on roadways are predicted. Mitigation measures to minimize impacts include noise barrier systems, including berms or walls. For example, noise walls were incorporated into the C Street corridor from International Airport Road to West Dimond Boulevard (just outside study area).

During summer months, several trains per day can run from the airport spur and a total of 20 trains per day can run from Milepost 110 (near International and

Minnesota) to Milepost 114 in Ship Creek (ARRC, 2008). Track vibration and noise can affect sensitive receptors with variation in season, train speed, and car weight. Residents in close proximity to the tracks have complained about noise and vibration impacts.

Construction Noise

Construction noise during the summer months is a major source of noise in the Anchorage area, particularly on large arterials. The MOA noise ordinance (GAAB 16.85.010; AO No. 78-48) limits noise levels at noise-sensitive areas. However, the MOA also allows certain activities (construction, explosives, public events, snow removal, and motor vehicle racing) to apply for a noise permit to allow a temporary increase in allowable noise levels or allow an event to occur at a time that it normally would not be allowed.

Industrial Noise

Industrial noise sources in the Anchorage area consist of truck yards, asphalt plants, shipping yards, waste water treatment plant, and others. Persistent generators are those that operate 24 hours a day. Some industrial noise sources are outside the planning area, but affect residents within the boundary. Some buffers are in place to mitigate noise, but not all noise sources are buffered.

Recreational Activities in Parks and Open Space Noise

Motorbikes, remote control planes and cars operating in parks and open spaces also contribute to the existing noise environment in the study area. The only motorized race track in the Anchorage Bowl is in Kincaid Park off of Jodhpur Road. Float plane use in residential areas could be characterized as sporadic with peak operation occurring during summer months.

Safety

Height Restrictions

FAA conducts aeronautical studies on obstructions to aircraft operational capabilities, electronic and procedural requirements, and aircraft hazard standards to determine if obstructions (e.g. buildings, towers) are a hazard to air navigation. Objects affecting navigable airspace are regulated by FAR Part 77 which describe various imaginary surfaces defining the airspace. Airport sponsors must comply with the requirements in Part 77 subpart C.

TSAIA complied with FAR Part 77 subpart C by providing a map to MOA in 1984 that was adopted into a Height Zoning Ordinance. It is shown on the zoning booklet maps by elevation contours which regulate the permissible height of structures within the height district. The heights vary throughout the district depending on location and surface elevation of the site.

In general, no structures over 35 feet can be built within the district. Any structure exceeding 200 feet, within three nautical miles of the airport, require FAA

approval. Note that height limitations do not in themselves ensure compatible land use surrounding the airport.

Restricted Access

The TSAIA Aircraft Operations Area is surrounded by an eight foot security fence and requires an Airport-issued identification badge for access as per Transportation Security Administration regulation, and therefore is not accessible or available for other uses by the general public.

As described in the Natural Environment Chapter G, there is abundant wildlife on the TSAIA property. It is observed that wildlife on airport property walk the fence perimeter. Vacant wooded property along the western boundary of the airport property is pinched at the Coastal Trail; this has caused some human/wildlife interactions.

Lake Hood is a popular attraction for both residents and visitors. There is an established walkway route around Lake Hood and a picnic area on the northern shoreline of Spenard Lake. The airport has worked with the community councils to educate the public as to where they can enjoy this area safely. Unfortunately, the popularity of the area also leads to dangerous recreational use of taxiways for jogging, dog walking, and sightseeing.