

Status of the System, 2010



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Anchorage Metropolitan Area Transportation Solutions

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Executive Summary

This report is the fourth in a series of evaluations focusing on performance of the Anchorage transportation system. Anchorage Metropolitan Area Transportation Solutions (AMATS)—the Metropolitan Planning Organization responsible for transportation planning in the Anchorage Bowl and Chugiak-Eagle River (the Anchorage metropolitan area)—relies on this information for its planning efforts, including identification of future improvements.

Similar assessments of the Anchorage transportation system were made in 1998, 2003, and 2007. The transportation analysis in this report is consistent with the past reports, which focused on roads; public transportation; ride sharing; bicycle and pedestrian systems; the roles of the port, railroad, airport, and trucks in moving freight; and regional connections.

Population and traffic in the Southcentral region of Alaska, encompassing the Anchorage metropolitan area and the Matanuska-Susitna (Mat-Su) Borough have continued to grow. The estimated population growth for the Municipality of Anchorage (MOA) from 2000 to 2009 is 12%. The steeper population growth in the Mat-Su Borough for the same period, 42%, contributes to increasing traffic volumes on the Glenn Highway.

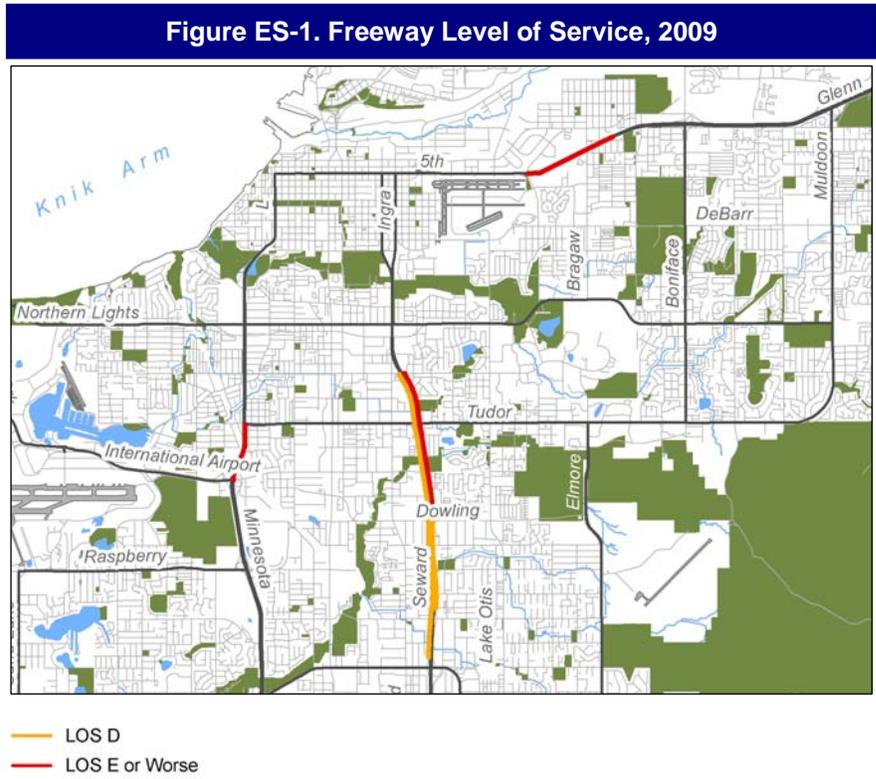
Since the previous transportation performance evaluation in 2007, improvements to roadways have produced measurable positive impacts; public transportation changes to route structures and frequency have contributed to a slight gain in ridership; and additional and improved trail, sidewalk, and bicycle facilities have increased availability to users. In addition, capital improvements at Ted Stevens Anchorage International Airport and in the rail infrastructure have benefited freight movement as well as passenger travel.

Status of the Road System

Indicators used to compare past and current conditions and to assess performance of the road system include freeway traffic flow, intersection delay, travel time, and crash data.

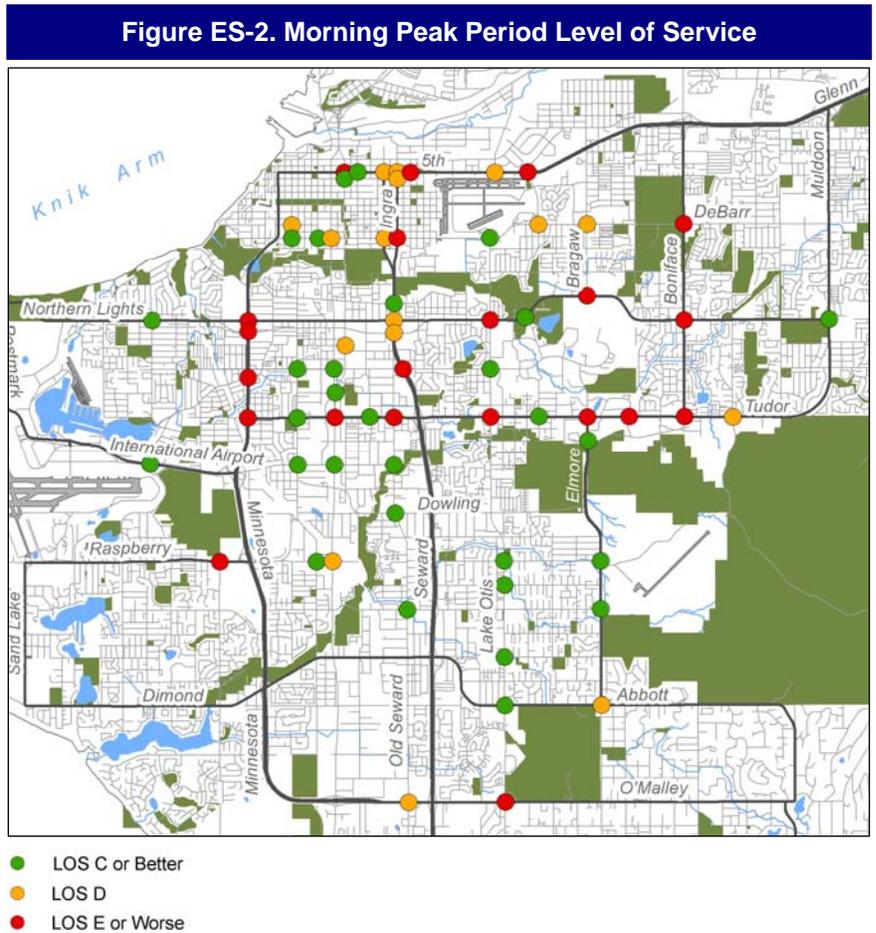
Freeway Traffic Flow

With the exception of the Seward Highway between 36th Avenue and Dimond Boulevard, the freeway system in Anchorage is performing well. A 2009 analysis of freeway level of service (LOS) determined that northbound traffic on the Seward Highway encounters an unacceptably high LOS of D or worse during the morning peak period from the 76th Avenue on-ramp to the terminus of the freeway at 36th Avenue (Figure ES-1). In the afternoon peak period, LOS D prevails in the southbound direction from the Tudor Road on-ramp to the Dimond Boulevard off-ramp. Neither the Glenn Highway nor Minnesota Drive is affected by significant delays on their freeway segments.



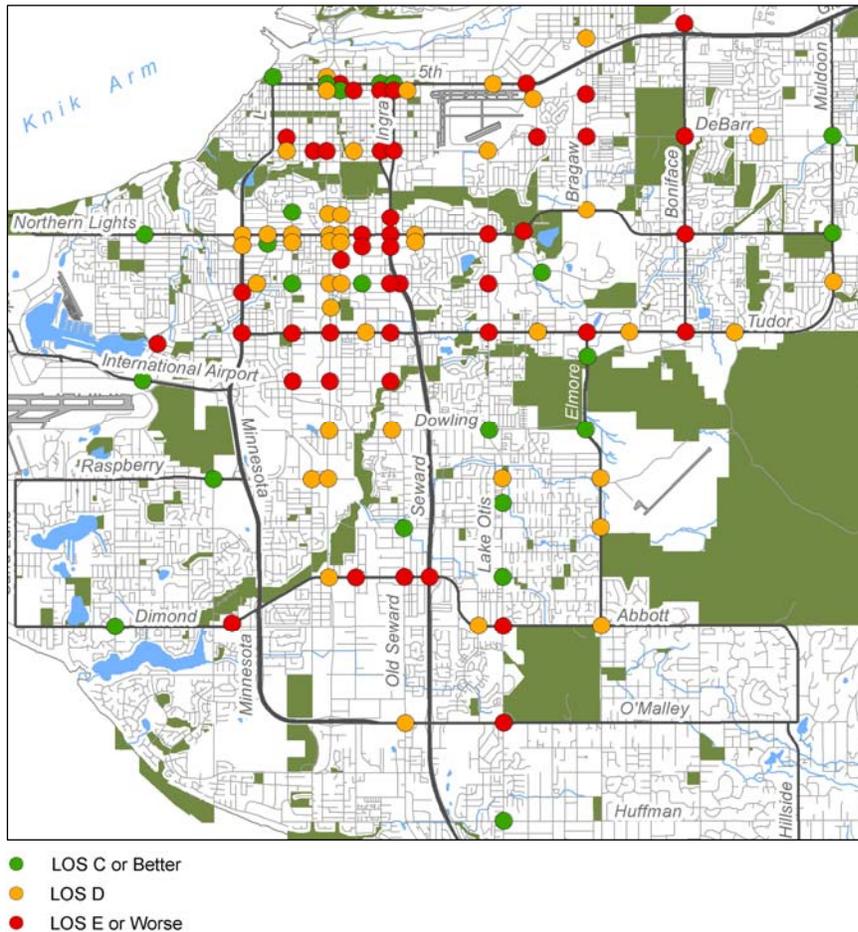
Intersection Delay

The majority of the delay experienced by Anchorage drivers occurs at signalized intersections. The measure of intersection delay—LOS—describes how well traffic flows on a road based on its design and operational characteristics and its traffic volume. Applied to intersections, the LOS scale ranges from LOS A, in which all vehicles move through a traffic light during a single green light cycle with minimal delay, to LOS F, in which drivers experience long delays at traffic lights, potentially waiting through multiple traffic light cycles.



Relying on the LOS measure, Figures ES-2 and ES-3 show the average delay for Anchorage Bowl drivers traversing an intersection in the morning and afternoon peak hours, respectively. No intersections in Chugiak-Eagle River were rated worse than LOS C during the peak travel periods.

Figure ES-3. Afternoon Peak Period Level of Service



For the morning peak period, the most serious delays occurred at 37 intersections rated LOS D or worse. Among the 21 intersections rated LOS E or worse, 12 of the intersections were located along three corridors: Tudor Road, Northern Lights Boulevard, and Minnesota Drive.

For the afternoon peak period, 89 intersections were rated LOS D or worse. The five corridors with the highest afternoon peak-period delays are Tudor Road, Lake Otis Parkway, Seward Highway, Northern Lights/Benson boulevards, and Minnesota Drive.

The intersections with the poorest LOS ratings

generally have high traffic volumes and affect many travelers. Table ES-1 shows the intersections with the highest afternoon peak-period delays. Of special note, the Lake Otis Parkway and Tudor Road intersection has seen a significant decrease in the vehicle hours of delay since the last Status of the System report, published in 2007, which stated that drivers lost more than 500 hours because of congestion at the intersection during an average, weekday, afternoon peak period. Reconstruction of the intersection and additions of new east-west links in the area have helped to reduce delays to just fewer than 100 hours.

Table ES-1. Intersections with Highest Afternoon Peak-Period Delays, 2010

Intersection	Driver Hours of Delay per Weekday in Afternoon Peak Period
Seward Highway and 36th Avenue	250
Lake Otis Parkway and Northern Lights Boulevard	234
Tudor Road and Old Seward Highway	231
C Street and Tudor Road	171
Tudor Road and Elmore Drive	139
Minnesota Drive and Spenard Road	131
Boniface Parkway and Debarr Road	110
Dimond Boulevard and Old Seward Highway	102
Seward Highway and Benson Boulevard	97
15th Avenue and C Street	95
Lake Otis Parkway and Tudor Road	94
Minnesota Drive and Northern Lights Boulevard	93

Travel Time

Another tool for measuring transportation system performance is travel time. Figure ES-4 shows the automobile travel times recorded by instrumented vehicles for morning, midday, and afternoon on nine Anchorage corridors. With few exceptions, commute journeys for the afternoon peak period take the longest, and travel times for the morning peak period are comparable to those at midday.

The Glenn and Seward highways both contain arterial and freeway segments. Severe congestion was observed on several of the arterial segments of these roadways, and some of the slowest travel speeds identified in the entire road network were documented on the Seward Highway between 13th and 15th avenues and between Fireweed Lane and Northern Lights Boulevard.

Travel Time Comparisons. Afternoon peak travel times for 1998, 2006, and 2010 are compared in Figure ES-5. The data show deterioration (slower travel times) in corridors with substantial retail or commercial growth, specifically Dimond Boulevard/Abbott Road and Tudor Road/Muldoon Road.

Figure ES-5 shows a significant reduction in travel time for Lake Otis Parkway from 2006 to 2010. Despite continued development along this corridor, the roadway improvements near Lake Otis Parkway and Tudor Road have restored former travel speeds.

Figure ES-4. Automobile Travel Times by Time of Day, 2010

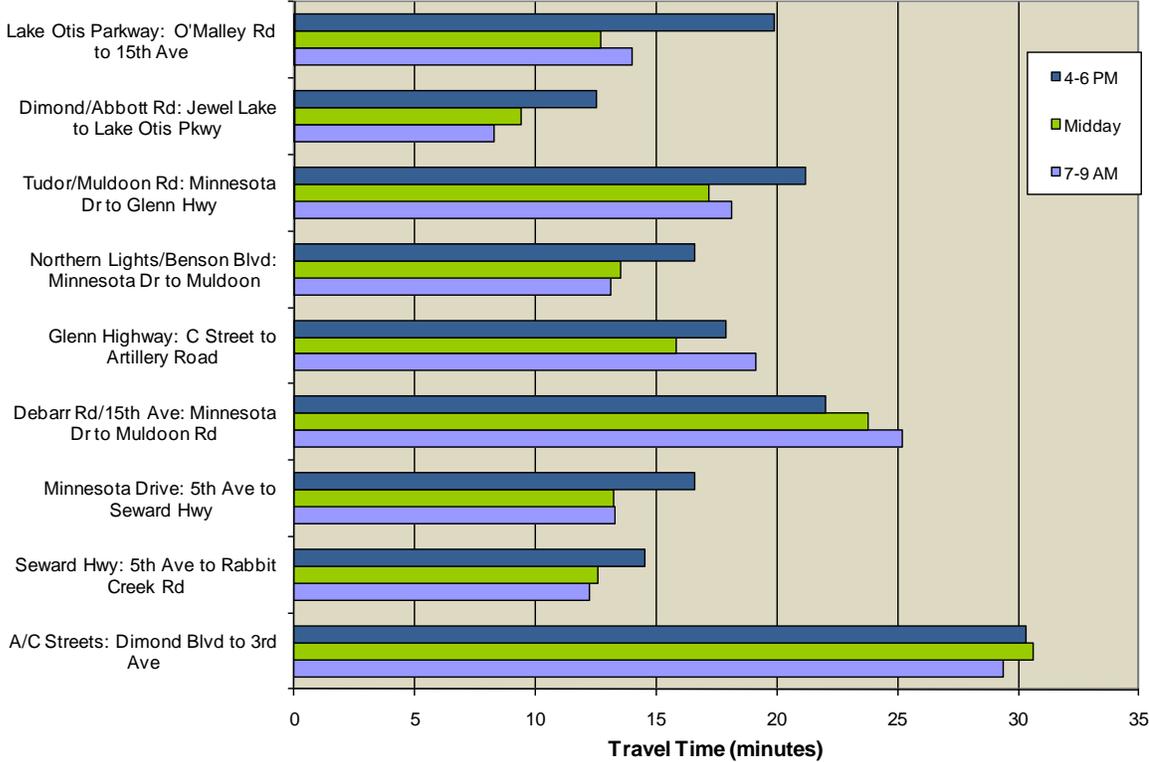
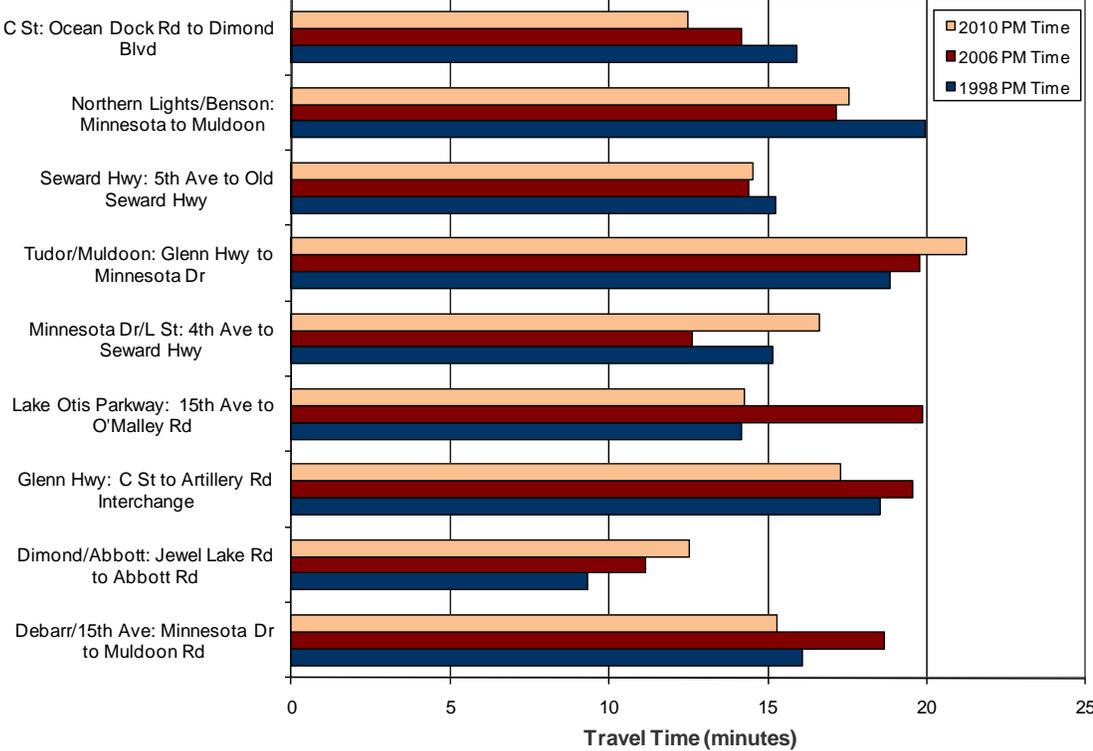


Figure ES-5. Afternoon Peak Travel Times, 1998, 2006, and 2010

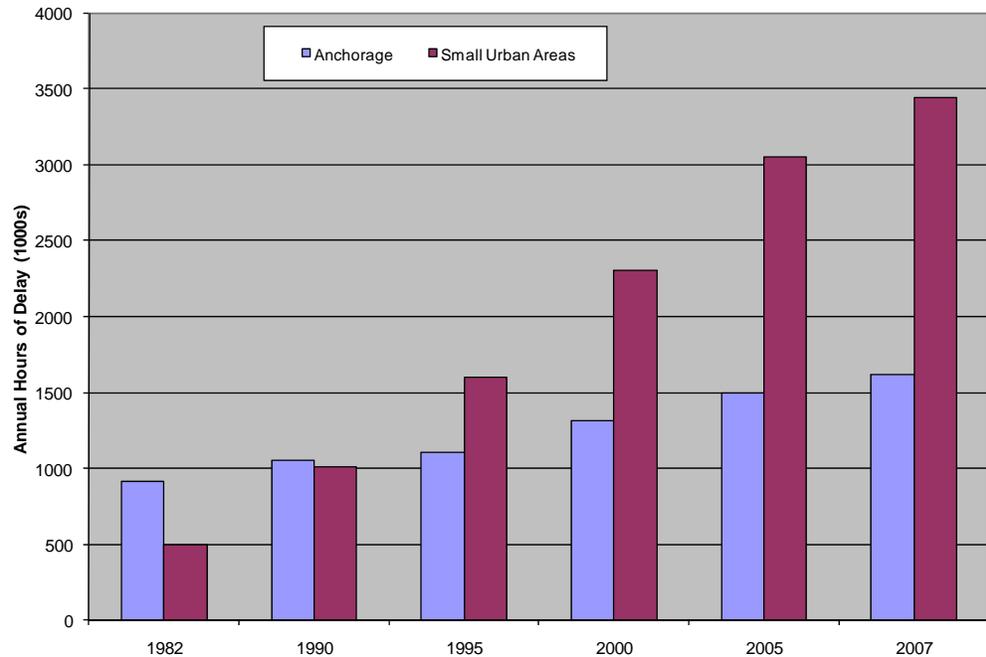


Anchorage Congestion Compared to Urban Area Peers

The Texas Transportation Institute (TTI) at Texas A&M University has been monitoring congestion in urban areas of the United States since 1982. The TTI urban mobility research results are especially useful because they identify multi-year trends and provide a consistent basis for ranking of congestion levels in all urban areas and between urban areas of similar size.

Figure ES-6 compares total annual delay hours for Anchorage and the average of 16 urban areas with populations of fewer than 500,000 from 1982 through 2007. The delay hours through time for other urban areas have increased markedly greater than for Anchorage.

Figure ES-6. Total Annual Delay for Urban Areas with Populations of Fewer than 500,000, 1982–2007



Source: Texas Transportation Institute, *2009 Urban Mobility Report*, “Performance Measure Summary for Anchorage and Small Urban Areas.” Note: The *2010 Urban Mobility Report* did not provide annual hour delay data for small urban areas.

According to the TTI, urban areas where capacity expansion (new roadway construction or transit expansion) matched increased demand saw congestion grow much more slowly than regions where capacity lagged demand. As it turns out, Anchorage is 1 of only 14 cities out of 101 surveyed where transportation demand increased less than 10% faster than roadway capacity. Many of these 14 cities had slow population growth, unlike the Anchorage population growth of a relatively healthy 12% between 2000 and 2009, as discussed above. Roadway capacity improvements may explain why Anchorage congestion ranks much lower than that

for most of its peers, as indicated by the following rankings: total annual excess fuel consumed, 96; annual delay per traveler, 87; annual total delay, 94; travel time indices, 95; and total congestion cost, 95.

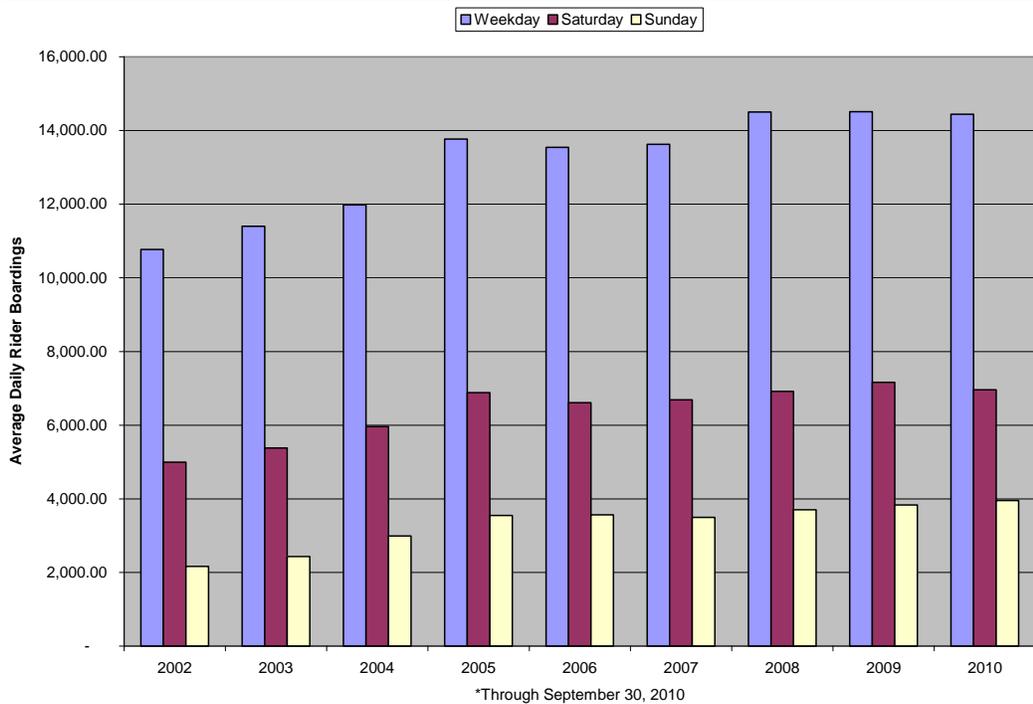
Traffic Safety

The numbers of total vehicle crashes have remained steady overall from 2000 through 2009. Fatal crashes actually declined substantially from 28 in 2000 to 20 in 2009. Considering that the vehicle miles traveled have increased about 2% per year during the last decade, the fact that total accidents have held steady at around 7,000 per year can be seen as a substantial improvement.

Status of the Public Transportation System

The 2010 ridership figure for the People Mover was 33% higher than in 2002. Figure ES-7 shows the daily ridership trend by weekday, Saturday, and Sunday ridership. Passenger boardings from 2002 to 2010 have grown by more than 3,673 per weekday (34%), nearly 1,964 on Saturdays (39%), and 1,785 on Sundays (82%).

Figure ES-7. People Mover Average Daily Riders, 2002-2010*



The increases in ridership have substantially outpaced the expansion in service hours and reflect a rise in the productivity of the People Mover routes. From 2002 to 2010, bus service productivity—the numbers of passenger boardings per hour of bus service—increased 20% for weekdays and 10% for Saturdays; Sunday service productivity remained virtually the same. Despite these productivity gains, the

percentage of persons driving to work alone has actually increased slightly from 74.5% in 2000 to 75.9% in 2009.

One main obstacle to improvement in the transit mode share remains in the relatively long transit travel times. The travel times for People Mover passengers are generally more than two or three times as long as those for automobile travelers on identical trips.

The AnchorRIDES specialized transportation service in Anchorage for senior citizens and individuals with disabilities has provided more than 190,000 passenger trips annually in recent years. In 2009, about 2.3 passengers were carried per hour of service. The number of passengers served rose 8% from 2002 to 2009.

Status of the Ride Share System

Significant growth in active vanpools and vanpoolers has been achieved since 2005 while the numbers of active carpools and carpoolers program participants have been reduced by nearly half, as shown in Table ES-2. Most vanpools carry Mat-Su Valley commuters. With almost 1,000 participants in 2010, vanpool ridesharing has a considerable impact on peak-period commute conditions on the Glenn Highway. It is estimated that vanpools reduce the total number of vehicles on the Glenn Highway by about 609 vehicles during the morning and afternoon peak periods, accounting for about 8.1% and 5.1%, respectively, of total traffic (at the Fort Richardson overpass).

Table ES-2. Anchorage Ride Sharing Statistics, 2005–2010

Individuals Sharing Rides	2005	2006	2007	2008	2009	June 2010
Registered applicants	4,602	4,822	4,946	4,774	4,823	4,772
Active carpools	328	278	181	179	179	178
Active carpoolers	659	557	365	361	361	359
Active vanpools	24	41	42	52	52	55
Active vanpoolers	375	569	637	810	917	985

Source: MOA Public Transportation Department

Status of the Pedestrian and Bicycle Systems

Currently, there are about 474 miles of sidewalks in the Anchorage Bowl (excluding separated multi-use trails). This sidewalk coverage represents roughly 13% of the total miles of roads in the Anchorage Bowl. The roughly 47 miles of sidewalks in Chugiak-Eagle River represent about 7% coverage of the total roadway infrastructure there.

Data on pedestrian use of the transportation system have not been collected since the 2002 Anchorage Household Travel Survey, which indicated that Anchorage

residents made 56,720 walking trips on a typical weekday in spring 2002 (about 5.7% of all trips).

Winter snow removal remains an important concern. In 2010, about 175 miles of sidewalks, or about one-third of the total sidewalks in Anchorage, were included in the snow removal program.

On-street bicycle lanes are designated on 13.2 miles of Anchorage streets. There are no on-street bicycle lanes in Chugiak-Eagle River. The 2002 Anchorage Household Travel Survey found that Anchorage residents made about 11,200 bicycle trips on a typical weekday in spring 2002 (about 1.2% of all trips). Statistical data about bicycle riders gathered annually on Bike to Work Day, held every May since 2007, shows that bicyclist participation increased 43% from 2007 to 2010, when 2,500 bicyclists were counted at 12 locations during the morning commuter period (6:30 to 9:00 a.m.).

Pedestrian and Bicycle Safety

During the 10-year period from 2000 through 2009, 1,074 pedestrian-vehicle crashes and 1,318 bicycle-vehicle collisions occurred. The numbers of pedestrian-vehicle crashes have remained within a relatively narrow range during the past 10 years; the numbers of bicycle-vehicle crashes have varied. Improving safety and reducing crashes are goals of the recently completed plans for pedestrian and bicycle facilities in the Anchorage metropolitan area.

Status of Freight Movement Systems

Ships, planes, trains, and trucks play vital roles in carrying consumable and manufactured goods imported to the State of Alaska, as well as exports and freight required by major military installations. Air transport also moves residents and visitors into and out of the state and supports the tourism sector that contributes significantly to the livelihood of many Alaskans.

Between 2000 and 2009, freight passing through Ted Stevens Anchorage International Airport increased 4% annually and air cargo loaded in Anchorage rose 13%. Air passenger traffic at the airport has risen roughly 2% annually since 2003.

The Port of Anchorage handles more than 90% of all consumer goods sold in Southcentral and Interior Alaska and is a key logistic resource for major military installations. Approximately 1.7 million containers moved through the Port in 2009, an increase of 7% since 2000. If the sharp drop in 2009, which was likely due to the global economic recession, is excluded, the overall increase in container traffic through the Port was about 13%. That change almost exactly reflects growth in the MOA and Mat-Su Borough population during 2000 to 2008.

The Alaska Railroad Corporation gravel and coal rail tonnages have edged upward modestly since 2000, and petroleum volume has trended somewhat lower. In 2009 the railroad transported 5.5 million tons of freight throughout the state, of which 3.9 million tons, or 70%, were gravel and coal. The railroad also carried more than

470,784 passengers in 2009 and 405,135 in 2010, mostly Alaska visitors and cruise ship passengers. The Railroad is continuing its program of infrastructure development.

Trucks deliver nearly all goods designated for Anchorage metropolitan area destinations. Trucks also move a very substantial share of statewide freight movements from the Port of Anchorage and Ted Stevens Anchorage International Airport. Daily truck volumes in 2009 exceeded 3,500 vehicles on the Glenn Highway and 3,000 vehicles near 76th Avenue on the Seward Highway. In most cases, single-unit trucks represent more than 80% of total truck volume.

Introduction

In 1998, Anchorage Metropolitan Area Transportation Solutions (AMATS), the federally designated Metropolitan Planning Organization (MPO) responsible for transportation planning for the Anchorage Bowl, Chugiak, and Eagle River areas, sought an evaluation of how the Anchorage transportation system was performing.¹ The evaluation used 16 performance measures that encompassed all modes of travel, including automobile, public transportation, vanpooling, carpooling, walking, and bicycling. Through extensive efforts, data were collected for each performance measure. A second report evaluating the “status of the system” was prepared in 2003 as part of the Long-Range Transportation Plan for Anchorage and expanded on the original 16 performance measures. A third report was completed in 2007.²

This document again provides a comprehensive examination of the Anchorage transportation system. It serves at least three functions. First, the Status of the System, 2010, report establishes a benchmark for development of the AMATS Transportation Plan Update, providing a snapshot of how well the transportation system is performing at this date in time. Future improvements can then be measured against the existing performance measures to determine effectiveness of the proposed improvements. Second, the report examines historical trends to assess overall progress in the MPO’s effort to reduce congestion as well as its effort to expand travel choices (both goals of the Transportation Plan). Third, individual project implementation measures can be evaluated to assess their effectiveness in reducing congestion. By comparing the performance measure results between the years 2007 and 2010, it is possible to directly examine the effectiveness of projects that were implemented since the last Transportation Plan was adopted.

The Anchorage Transportation System

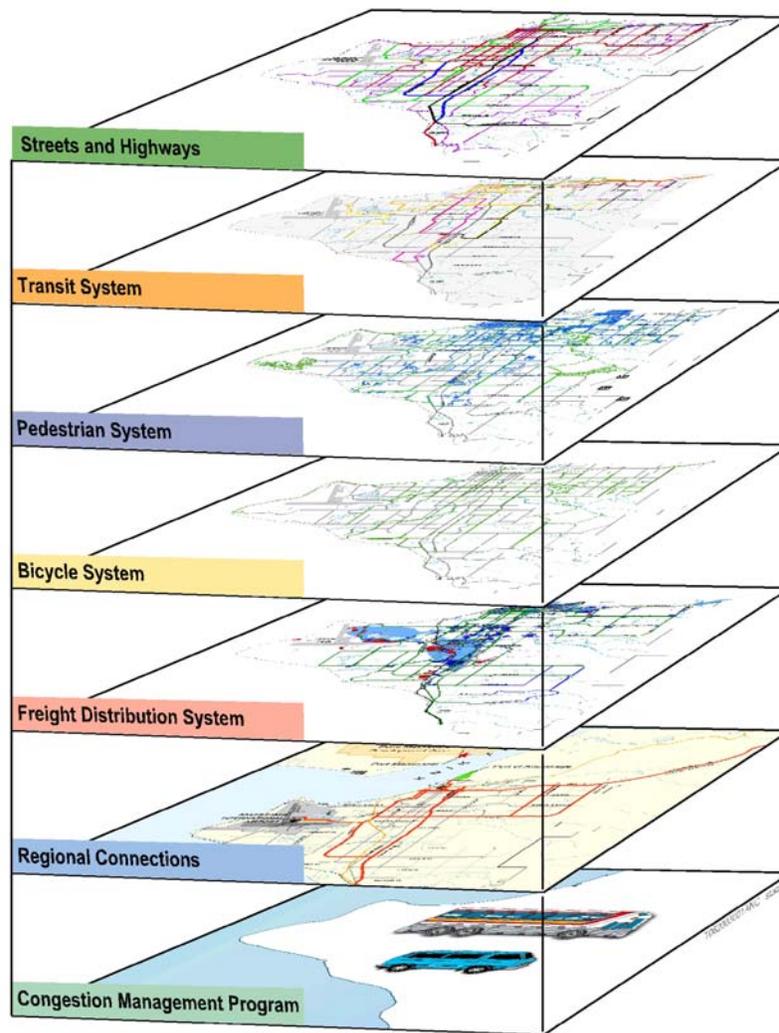
Anchorage’s roadway, airport, port, railroad, transit service, bicycle path, and pedestrian transportation infrastructure is extensive. The transportation system is widely used by Municipality of Anchorage (MOA) citizens and visitors. In 2009, 1.18 million personal and truck trips were made every weekday within the AMATS area.³ The 2004-2005 consumer expenditure surveys from the U.S. Bureau of Labor

¹ Municipality of Anchorage, Transportation Planning Division, *Anchorage Congestion Management System: Status of the System Report*, December 2000; prepared with Cambridge Systematics, Inc., and Rader Econometrics & Engineering.

² In the past, the Status of the System report was updated every 3 years to correspond to the update of the Transportation Plan. Because the Federal Highway Administration metropolitan planning regulations now require that MPOs update their plans every 4 years, it is recommended that future Status of the System reports be updated every 4 years prior to Transportation Plan updates.

³ Source: AMATS travel demand model.

Figure 1. Elements of the Anchorage Transportation System



Statistics indicate the average Anchorage household spends \$12,600 annually on transportation, or 21.2% of total household expenditures. Travel also consumes a significant portion of people's time—in aggregate, about 150,000 person hours every weekday in Anchorage.⁴ Transportation plays an important part in the daily lives of Anchorage residents and the operations of the business community, services organizations and institutions, government agencies, and the military. Rising fuel prices in recent years have significantly increased transportation expense for all users.

Figure 1 illustrates the seven elements of the MOA transportation system. The vast majority of travel uses Anchorage streets and highways, whether by personal vehicle, public transit, truck, or bicycle. The public transit system includes the People Mover fixed-route

bus system, the AnchorRIDES service for seniors and disabled persons, and the school bus system operated by the Anchorage School District.⁵

Freight distribution is handled by trucks throughout the MOA and by truck, rail, and air to more distant communities elsewhere in the state. Air, rail, marine routes, and the National Highway System provide regional connections that link the MOA to the rest of the state and the world. Anchorage is the freight and passenger transportation hub for Alaska. Regional transportation connections are vital for

⁴ Source: 2007 AMATS travel demand model.

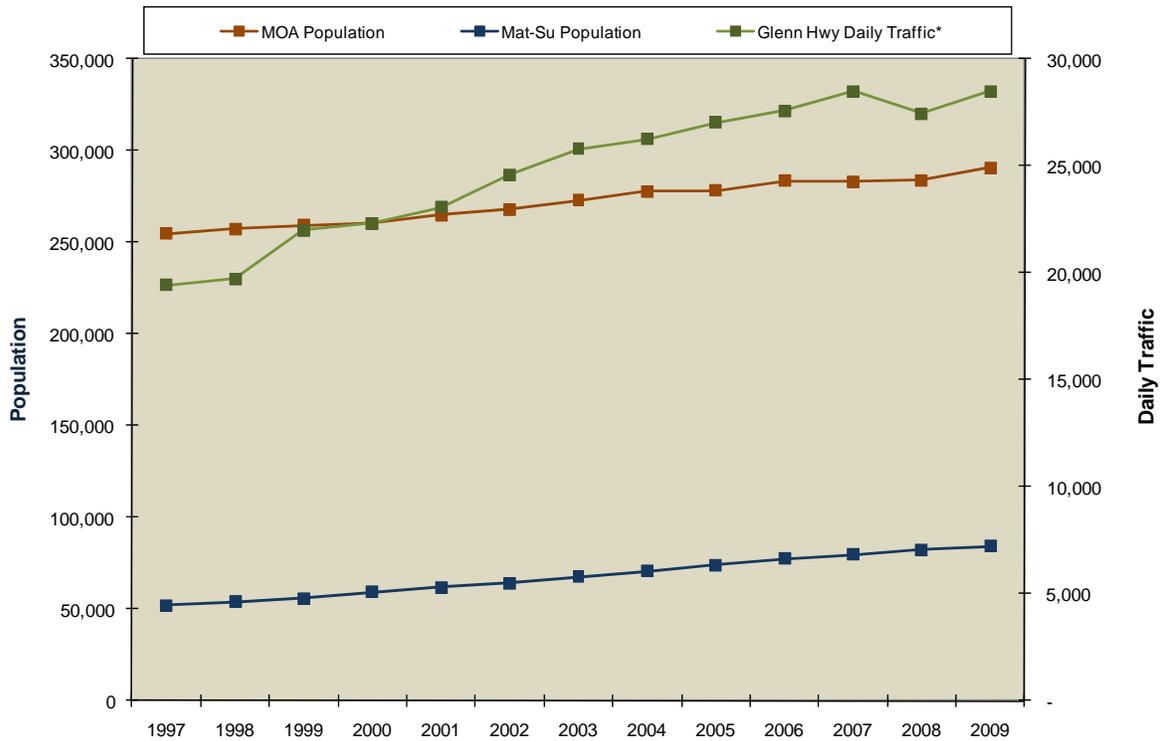
⁵ In addition to these public components, specialized transportation services are operated by other agencies and by social and religious groups. Taxi services and charter bus services are operated by several private businesses, and the Alaska Railroad Corporation, a state-owned enterprise, provides passenger rail service, primarily to visitors.

goods imported and exported from the state and for passenger travel and tourism that contribute significantly to the city and state economies.

Changes in Population and Traffic Growth

The Alaska Department of Labor and Workforce Development estimated the July 2009 MOA population at approximately 290,590 persons. That population reflects a slow but steady incremental growth from the 260,283 residents recorded in the 2000 U.S. Census and 226,340 persons documented in the 1990 U.S. Census. The most rapid growth in the state is occurring in the Matanuska-Susitna (Mat-Su) Borough, where population increased 42% between 2000 and 2009, from 59,300 to 84,314 persons.⁶ Traffic volume on the Glenn Highway continues to increase because of Mat-Su Borough growth (see Figure 2).

Figure 2. Population and Traffic Trends, Anchorage Metropolitan Area and Matanuska-Susitna Borough, 1997–2009



Note: Glenn Highway traffic figures are from the Eklutna Flats permanent recorder.
 Source: Alaska Department of Labor and Workforce Development and Alaska Department of Transportation and Public Facilities.

⁶ Alaska Department of Labor and Workforce Development estimates.

Increases of total travel in the urban area paralleled population growth and the rising commuter travel between Anchorage, Eagle River, and the Mat-Su Valley. Vehicle miles of travel grew at an annual rate of 2.53% from 1998 to 2007.⁷

Transportation Plan Implementation Since 2007

Implementation of the previous 2007 Transportation Plan has been remarkably successful; improvements to roadways, sidewalks, and bicycle facilities produced measurable positive impacts compared to those for other similar periods of time. As discussed later in this report, roadway improvements have substantially affected traffic congestion, especially as measured by travel speeds along certain corridors.

Road System

The most important roadway changes in the Anchorage metropolitan area as of December 2010 are listed below. The roadway projects identified do not include roadway rehabilitations or local street improvements.

- Expansion of the Glenn Highway from four to six lanes, from the start of the 5th/6th avenues couplet to Airport Heights Drive
- Construction of a freeway interchange on Minnesota Drive at C Street
- Construction of a four-lane collector loop, Creekside Parkway, providing access within the Creekside Town Center between Debarr Road and Muldoon Road
- Construction of a new four-lane arterial connection, Elmore Road, between 68th Avenue and the new Dr. Martin Luther King Jr. Boulevard
- Construction of a freeway interchange on the Glenn Highway at Bragaw Street
- Expansion of the Old Seward Highway from two to four lanes between O'Malley Road and Brandon Street
- Extension of Dowling Road as a four-lane arterial from Laurel Street to Elmore Road
- Expansion of 100th Avenue from two to four lanes between C Street and King Street
- Construction of Dr. Martin Luther King Jr. Boulevard from Elmore Road to Boniface Boulevard as a four-lane arterial
- Expansion of the Lake Otis Parkway and Tudor Road intersection to include double left turns and dedicated right-turn lanes at each approach of the intersection

⁷ Computed from AMATS travel model results for 1998, 2003, and 2007.

- Expansion of Oilwell Road between the Glenn Highway interchange at Muldoon Road and the Elmendorf Air Force Base gate from two to four lanes
- Expansion of Eagle River Loop Road from two to three lanes between Eagle River Road and the Old Glenn Highway
- Continued implementation of new signal timing plans for the Anchorage Bowl and Chugiak-Eagle River

Public Transportation

People Mover service levels have remained relatively constant since 2007. Changes to the route structure and frequency through December 2010 included the following:

- July 2008 – Elimination of Routes 65 (Lower Hillside and South Anchorage) and 79 (Muldoon Road to Eagle River)
- July 2008 – Increases of headways (shorter times between buses) for Routes 9 and 15 from 60 to 30 minutes
- July 2008 – Addition of Route 45G, serving North Mountain View and Downtown (MOA budget cuts eliminated this route in early 2011.)
- July 2008 – Separation of Route 77 B/G, in Eagle River, into Routes 77 and 78
- July 2009 – Elimination of Route 78, Eagle River to Downtown
- July 2009 – Addition of Route 76, Birchwood Loop to Downtown
- March 2010 – Elimination of Routes 76 and 77 in Eagle River
- March 1, 2010 – Launch of the Eagle River Connect service to replace the eliminated Eagle River routes. This service combines a fixed route component with dial-a-ride service between Chugiak-Eagle River and the University-Medical (U-Med) area in Anchorage, with drop-offs at designated People Mover stops or paratransit destinations. Destinations beyond the U-Med area require a transfer to People Mover or other AnchorRIDES vehicles.

Despite the lack of significant increases in service hours, People Mover has achieved ridership gains of nearly 5% between 2007 and 2009, with a total ridership of 4,184,141 recorded in 2009.

People Mover has implemented a number of Intelligent Transportation System (ITS) improvements, intended to help improve the reliability of the system, during the past 3 years. Real-time electronic message boards have been located at the transit centers at Downtown, Dimond Center, and Eagle River. Additional message boards have been located at the transfer center on Muldoon Road and the bus stop for the University of Alaska Anchorage (UAA) Consortium Library on Providence

Drive. In May 2009, a new real-time bus tracker application was initiated on the MOA webpage. This tool allows passengers to track buses along their route and estimate the arrival time. The newest ITS system initiated by the MOA Public Transportation Department involves transit signal priority, which allows buses to delay signal changes upon the approach of a bus at an intersection. The transit signal priority is being operated as a test, and information gathering will run through June 2011. The system is being tested on Routes 7 and 9 at a total of 16 intersections.

Significant gains have been achieved in development of the MOA Share-A-Ride program, particularly the vanpool component. The number of active vans in the vanpool program has increased from 42 in 2007 to 55 in 2010. The vanpool program recorded a total of 985 participants last year (through July 2010), most of whom are commuting from the Mat-Su Valley into Anchorage along the Glenn Highway. The MOA entered into a Memorandum of Understanding with the Mat-Su Borough in December 2009 to coordinate a regional vanpool program. The Mat-Su Borough purchased four vans for \$39,616 each and pays \$3,000 per year per vehicle for maintenance for a 5-year useful life.

The MOA also now offers a guaranteed ride home for all vanpool participants. This guarantee provides commuters who regularly vanpool with a reliable ride home when one of life's unexpected emergencies arises.

Pedestrian and Bicycle Systems

Notable pedestrian, bicycle, and trail improvements also have been made to the MOA bicycle and pedestrian path and trail network. Trail improvements since 2007 intended to promote a trail network and connections to the existing key, off-street, multi-use trail system include the following:

- Chester Creek Trail connection from the Tudor Road crossing (Cambell Creek Trail) to Northern Lights Boulevard
- UAA Trail connection from Elmore Road to Providence Drive and the UAA campus
- Ship Creek Trail from Chugach Electric Association dam to Tyson Elementary School
- Kincaid/Raspberry Road Trail from the Kincaid Park entrance to the park chalet

In addition to the improvements to the greenbelt trail system, a substantial number of sidewalk and bicycle facility improvements have been completed. According to a 2010 MOA sidewalk field survey, approximately 34.5 miles of new sidewalks and 31.4 miles of new bicycle facilities have been constructed since 2007. Of the bicycle facility improvements, 10.8 miles are bicycle lanes and 20.4 miles are multi-use paths (not including the greenbelt trail improvements mentioned above).

Freight Distribution and Regional Connection Elements

The Ted Stevens Anchorage International Airport (TSAIA) has also seen major improvement projects since 2007. Anchorage Rental Car Center opened in 2007. This facility provides an all on-airport location for car rental concessionaires. The single building is immediately east of the airport terminal, and passenger access is provided through a tunnel from the arrival hall of the terminal.

Another TSAIA enhancement was the Concourse A & B Improvement Project. The \$196 million project brought the two terminal concourses up to standards for seismic and other codes as well as created consistency with the previous upgrades of Concourse C. The improved facilities were opened to the public November 1, 2009.

The Port of Anchorage received permit approval from the U.S. Army Corps of Engineers for Phase II of the Port expansion project. Because intermodal shipments through the Port of Anchorage bring nearly all consumer goods to Alaska, the Port enhancements, which would improve efficiency of user operations, offer ways to counter the effects of rising fuel and transport costs. The expansion project will accommodate larger vessels and increase Port operating efficiency.

The Alaska Railroad Corporation (ARRC) has continued to expand its passenger service since 2007. In August 2007, the ARRC and U.S. Forest Service introduced a new whistle stop service to the Chugach National Forest. The ARRC received a new commuter-style self-propelled railcar in April 2009 for use on the summertime service. The 120-seat diesel multiple unit (DMU) railcar could be used in a future wintertime commuter service between the Mat-Su Borough and Anchorage. Full commuter rail service in Southcentral Alaska would require a minimum of four DMUs. The railroad is also collaborating with the Dimond Center on plans to develop an intermodal center there and is upgrading facilities at its Ship Creek headquarters complex.

Road System

Level of Service Performance

Level of service, or LOS, measures roadway traffic flow conditions and the degree of delay encountered by motorists on streets and highways. Procedures to calculate LOS performance for freeway segment are different from those to calculate LOS for arterial streets, where intersections are the controlling factor. The LOS reflects how well the traffic demand is accommodated by the available roadway capacity and the relative ease of traffic flow on a scale of A to H, depending on the level of congestion. In general, an LOS of C or better is considered to be an acceptable level of service and an LOS of D is approaching the capacity of the roadway or intersection. An LOS of E or worse represents operating conditions that are at or above capacity.

Freeway Segment Level of Service

The LOS for access-controlled freeways is determined from the traffic density (passenger cars per mile per lane), using procedures delineated in the *Highway Capacity Manual*.⁸ Density is calculated by considering the freeway geometry and peak 15-minute traffic volume. LOS is reported on a scale for which LOS A

Table 1. Highway Capacity Manual LOS Criteria for Basic Freeway Segments

Level of Service	Density (pcpmpl)	Speed ^a (mph)	Traffic Volume ^b (pcphpl)
A	0-11	65	0-410
B	11-26	65	710-1170
C	18-26	65	1170-1680
D	26-35	60-65	1680-2090
E	35-45	52-60	2090-2350
F	45+	<52	2350+

Notes:

^a Speed for a facility with a free-flow speed of 65 mph.

^b Hourly volume per lane for the 15-minute peak period; LOS F values represent demand exceeding capacity.

mph = miles per hour

pcphpl = passenger cars per hour per lane

pcpmpl = passenger cars per mile per lane

Source: *Highway Capacity Manual*, 2000, Exhibit 23-2.

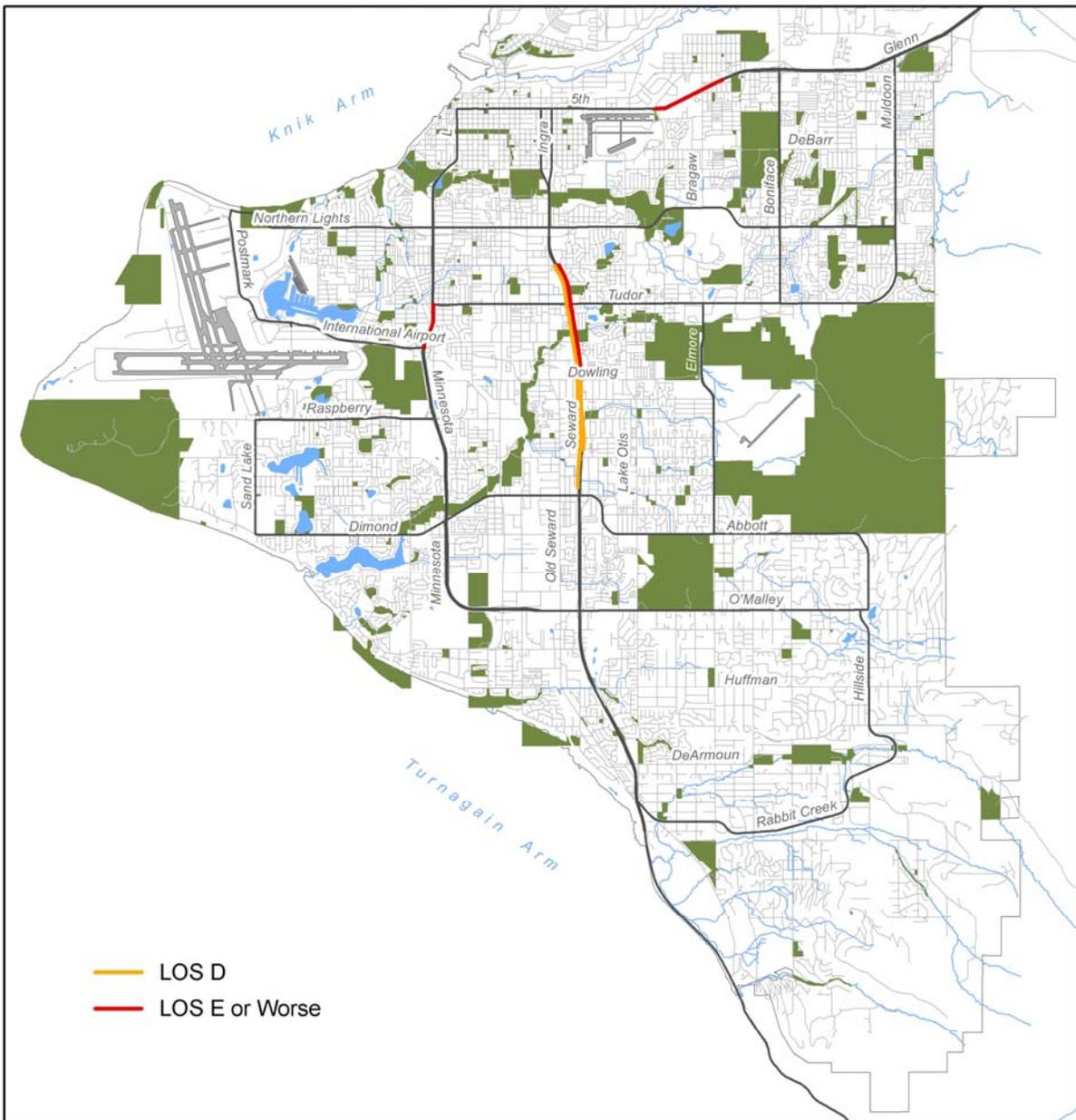
represents free-flow conditions, high speeds, and freedom to maneuver easily. LOS F represents conditions in which traffic flow has broken down, speeds are low, and traffic queues are common. Table 1 illustrates the density, speed, and volume criteria for LOS grading of freeways.

Freeway segments on Minnesota Drive (south of Tudor Road), Seward Highway, and the Glenn Highway were analyzed for morning peak-period and afternoon peak-period LOS using 2009 traffic volumes. The results are depicted in Figure 3.⁹

⁸ Transportation Research Board, National Research Council, *Highway Capacity Manual*, 2000.

⁹ These LOS calculations are for normal conditions without traffic incidents; they do not incorporate impacts or effects of crashes, bad weather, vehicle breakdowns, or other situations.

Figure 3. Freeway Level of Service, 2009



Only a few segments of the freeway facilities in Figure 3 show LOS of D or worse. The inbound freeway segment of the Glenn Highway terminus, at the Airport Heights Road traffic light, exhibits significant morning delay, LOS E. The remainder of the Glenn Highway from Eklutna through the Bragaw Road interchange shows LOS C or better.

Travelers on the Seward Highway experience the most extensive delay. Northbound traffic on the Seward Highway encounters an LOS of D or worse during the morning peak period from the 76th Avenue on-ramp to the terminus of the freeway at 36th Avenue. In the afternoon peak period, LOS D prevails in the

southbound direction from the Tudor Road on-ramp to the Dimond Boulevard off-ramp. Minnesota Drive shows LOS C or better on all segments in both the morning and afternoon peak periods, with the exception of the morning delay at the Tudor Road traffic light, where the freeway terminates.

Intersection Level of Service

The 2000 *Highway Capacity Manual* defines intersection LOS based on the delay for drivers traversing the intersection. Delay is measured in average seconds per vehicle. LOS A represents the best traffic conditions, with minor delay per vehicle (less than 10 seconds on average) and capability for handling up to 40% more traffic, and LOS F represents the worst conditions, with volume exceeding capacity for some intersection movements, most vehicles experiencing significant delay, and many drivers unable to pass through the intersection in a single green light cycle. Table 2 summarizes the LOS criteria from the *Highway Capacity Manual* applied to assess performance of Anchorage signalized intersections.

Table 2. Highway Capacity Manual LOS Criteria for Signalized Intersections

Level of Service	Control Delay (seconds/vehicle) ^a	Intersection Capacity Utilization ^b
A	10 or less	0-60
B	10-20	60-70
C	20-35	70-80
D	35-55	80-90
E	55-80	90-100
F	80 or more	>100

^a Average seconds of delay per vehicle.
^b Utilization is volume to capacity ratio in percentage.
 Source: *Highway Capacity Manual, 2000*

The intersection LOS was computed by using “intersection capacity utilization” procedures that relate the ratio of traffic volume demand on all intersection approaches to the capacity of the intersection.

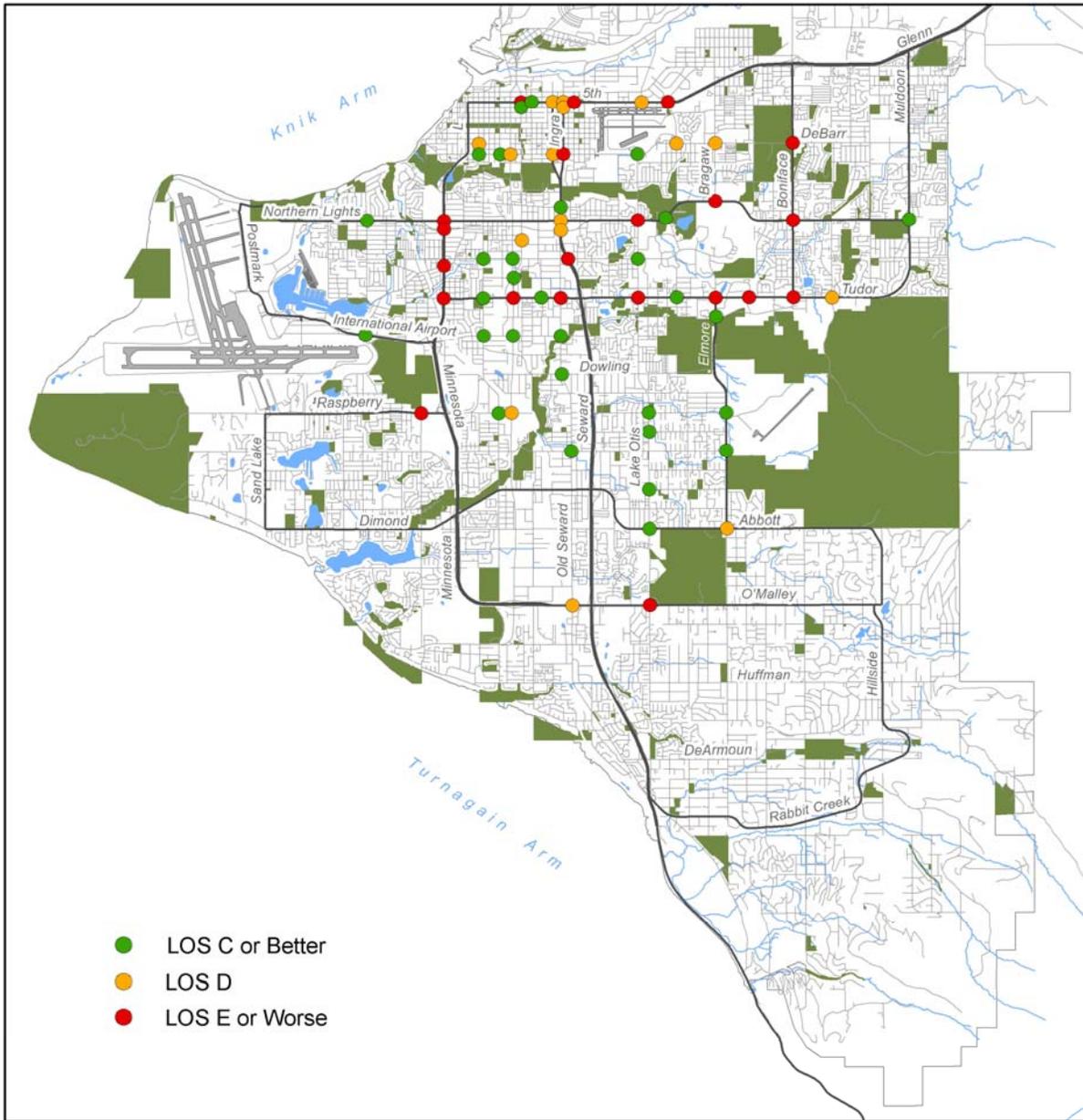
The MOA Traffic Department collected data on traffic volumes, vehicle turning movements, signal timing, and the geometry and lane configurations of intersections during 2007 to 2010.¹⁰ These data then were used to calculate the LOS for all signalized intersections

in the Anchorage Bowl and Chugiak-Eagle River during the morning, midday, and afternoon peak periods.

Morning Peak-Period Results. The LOS analysis results for the morning peak period are displayed in Figure 4. A total of 37 intersections operated at LOS D or worse during the morning peak period. Of these intersections, 16 operated at LOS D, 16 at LOS E, and 5 at LOS F or worse. The majority (12 out of 21) of the intersections with an LOS of E or worse occurred along three corridors—Tudor

¹⁰ A special effort was made to provide up-to-date traffic counts for intersections that were expected to be affected by the recent opening of new roadway links or intersection improvements. For example, new counts were conducted for the intersection of Elmore Road and Tudor Road to account for changes in travel patterns created by the opening of Elmore Road and the extension of Dowling Road.

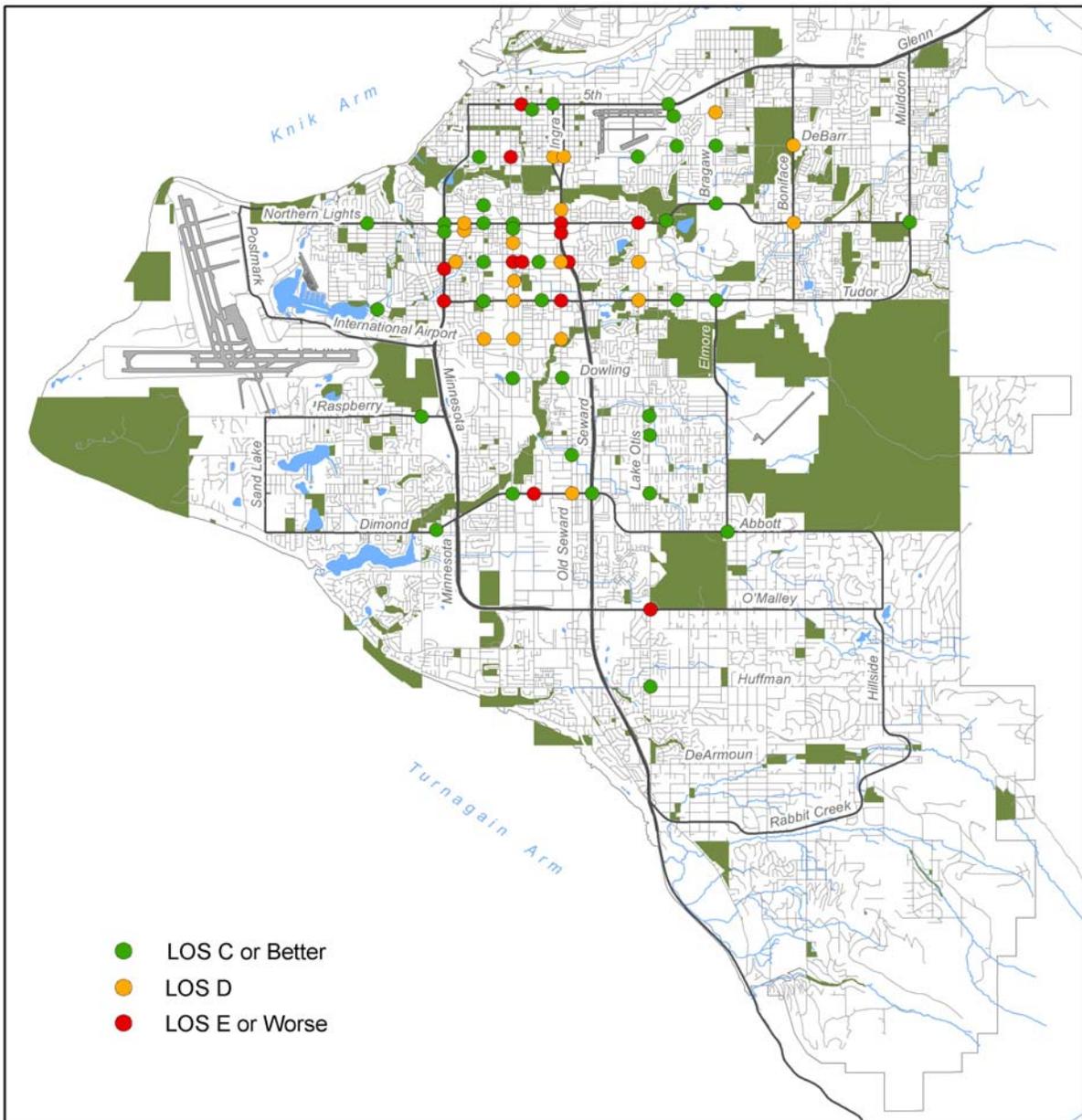
Figure 4. Morning Peak Period Level of Service



Road, Northern Lights Boulevard, and Minnesota Drive. All intersections within Chugiak-Eagle River were found to be operating at LOS C or better during the morning peak period. South Anchorage was also relatively free of congestion; only the intersections of O'Malley Road and Lake Otis Parkway and of Raspberry Road and Northwood Drive exhibited LOS E or worse.

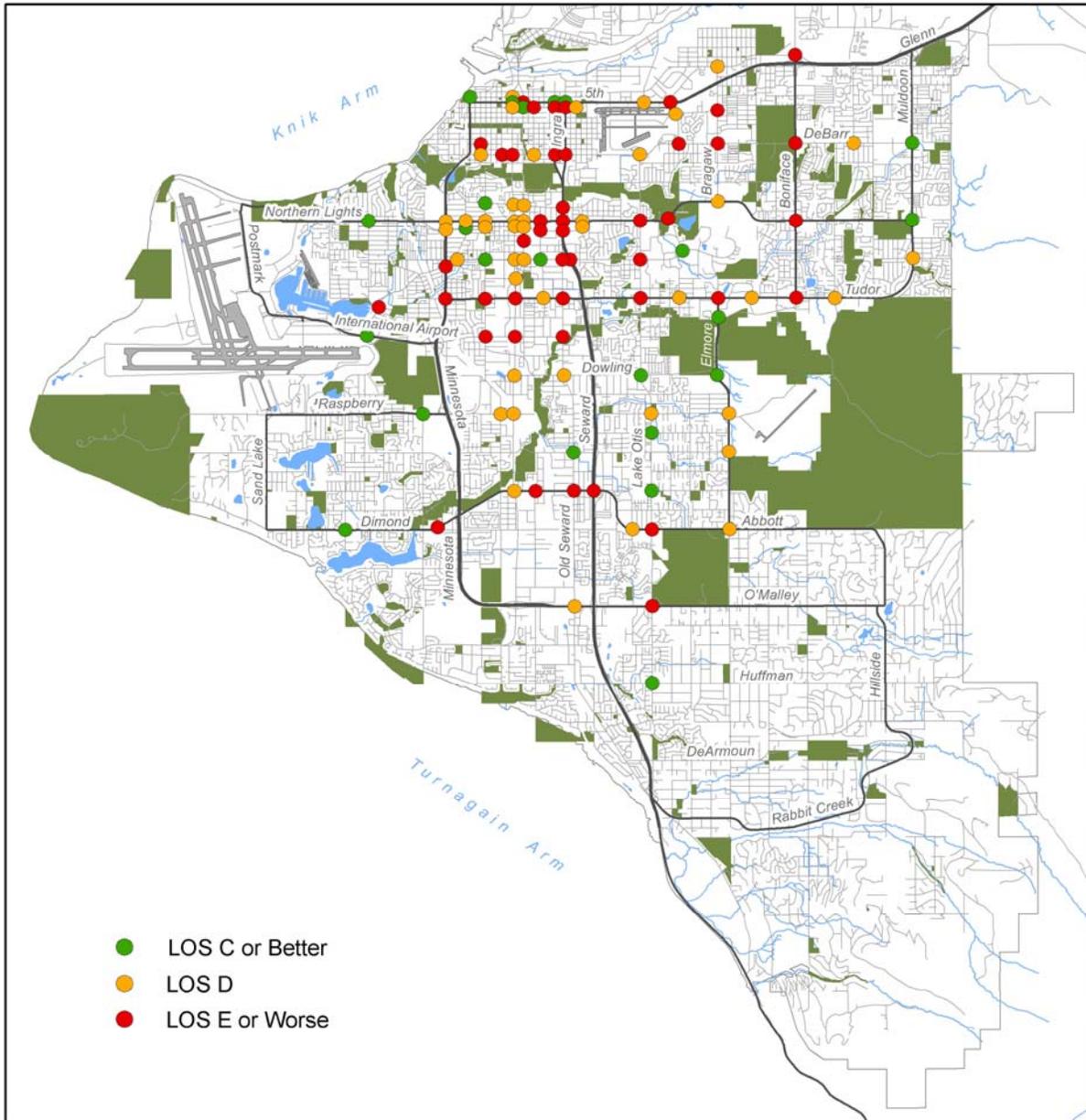
Midday Results. The congestion of the afternoon peak period is only slightly worse, in terms of the extent of the congestion problem, than that of the morning peak period, with a total of 32 intersections operating at LOS D or worse (see Figure 5). The intensity of the congestion problem is much lower midday, with only 13 intersections operating at LOS E or worse, compared with 21 in the morning peak period. The location of the congestion also shifts during the midday period. Instead of being concentrated along the major commuter corridors, the midday congestion occurs more often around the Midtown area (19 out of 32 intersections with LOS D or worse).

Figure 5. Midday Level of Service



Afternoon Peak-Period Results. The afternoon peak-period results of the LOS analysis are illustrated in Figure 6. The LOS performance of the afternoon peak period is significantly worse than for the morning peak and midday periods, and the level of congestion delay is markedly more severe and extensive. Ratings for the afternoon peak period were LOS D or worse for 89 intersections. Among those intersections, 29 were identified as LOS E and 16 as LOS F or worse.

Figure 6. Afternoon Peak Period Level of Service



Almost all major arterials serving as commuter routes within the Anchorage Bowl experience congestion (LOS E or worse) at multiple intersections during the afternoon peak period, including the following:

- Minnesota Drive, two intersections
- The arterial portion of the Seward Highway, five intersections
- Lake Otis Parkway, five intersections
- Tudor Road, seven intersections
- The 5th/6th avenues couplet, four intersections
- C Street, three intersections
- Northern Lights Boulevard east of the Seward Highway, three intersections
- Debarr Road, three intersections

Travelers along Dimond Boulevard, which primarily serves a commercial retail district, also experience significant intersection congestion in the afternoon peak period, with four intersections at LOS E or worse.

The results of the intersection LOS analysis showed that all signalized intersections in Chugiak-Eagle River currently operate at LOS C or better during the afternoon peak period.

Intersections with Maximum Afternoon Peak-Period Delays. The intersections with poorest LOS generally have high traffic volumes. Consequently, the longer

delay associated with LOS E or worse affects many drivers and vehicles. Table 3 shows the 12 intersections with the highest afternoon peak-period delays.

Table 3. Intersections with Highest Afternoon Peak-Period Delays, 2010

Intersection	Driver Hours of Delay per Weekday in Afternoon Peak Period
Seward Highway and 36th Avenue	250
Lake Otis Parkway and Northern Lights Blvd.	234
Tudor Road and Old Seward Highway	231
C Street and Tudor Road	171
Tudor Road and Elmore Drive	139
Minnesota Drive and Spenard Road	131
Boniface Parkway and Debarr Road	110
Dimond Boulevard and Old Seward Hwy.	102
Seward Highway and Benson Boulevard	97
15th Avenue and C Street	95
Lake Otis Parkway and Tudor Road	94
Minnesota Drive and Northern Lights Blvd.	93

The three intersections exhibiting the largest delays on weekday afternoons were the Seward Highway and 36th Avenue intersection, the Lake Otis and Northern Lights Boulevard intersection, and the Tudor Road and Old Seward Highway intersection, with 250, 234, and 231 hours of driver delay per weekday, respectively.

Vehicle hours of delay at the Lake Otis Parkway and Tudor Road intersection decreased

significantly because of the reconstruction of the intersection as well as the addition of new east-west links. Those roads—Elmore Road, Dowling Road, and Dr. Martin Luther King Jr. Boulevard—have taken some of the regional traffic burden from the intersection. In the *Status of the System Report, 2007*, the intersection delay at Lake Otis Boulevard and Tudor Road was reported as more than 500 vehicle hours. In 2010, reported delay was reduced to fewer than 100 vehicle hours.

The cumulative annual delay for the top three intersections is about 182,000 hours in the afternoon peak period. The monetary cost of lost time valued at hourly earnings for the Anchorage median worker is more than \$3.1 million per year.¹¹

Five corridors are prominent among the intersections with the highest afternoon peak-period delays: Tudor Road, Lake Otis Parkway, Seward Highway, Northern Lights/Benson boulevards, and Minnesota Drive.

Comparison of 2006 and 2010 Intersection LOS Results

Table 4 compares afternoon peak-period LOS in 2006 and 2010 for 28 intersections. The 2010 LOS results are the same as 2006 results for 13 intersections (50%), better for 11 (36%), and worse for 4 (14%). Many improvements to the intersection LOS between 2006 and 2010 appear to be due to new road construction, specifically the Elmore Road extension, Dowling Road extension, and newly created Dr. Martin Luther King Jr. Boulevard.

The most significant LOS improvement during the afternoon peak period occurred at the Lake Otis Parkway and Tudor Road intersection, which improved from LOS H in 2006 to LOS E in 2010. As noted previously, this intersection benefited from major reconstruction. Congestion levels improved at other intersections along Lake Otis Parkway, including 36th Avenue (from LOS F in 2006 to LOS E in 2010), and Dowling Road (from LOS E in 2006 to LOS C in 2010).

At the intersection of Abbott Road and Elmore Road, afternoon peak-period congestion worsened because of impacts from the new travel patterns created by the additional roadway connections. The LOS dropped from C in 2006 to F in 2010.

¹¹ The U.S. Census Bureau, 2005-2009 American Community Survey, 5-year estimate reports median worker earnings were \$35,123 or \$17.11 per hour for full-time workers.

Table 4. Comparison of 2006 and 2010 Intersection LOS for Afternoon Peak Period

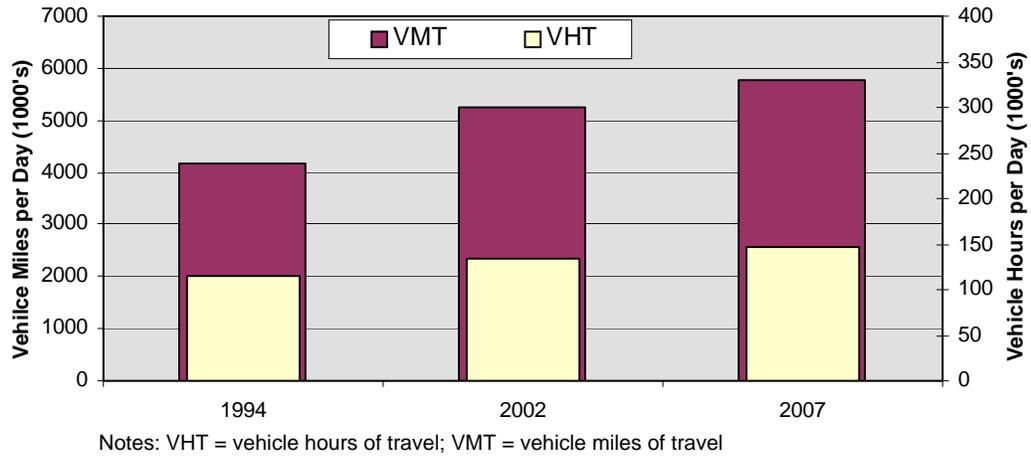
Intersection	Change	2006 LOS	2010 LOS
Lake Otis Parkway and Northern Lights Boulevard	Same	H	H
Lake Otis Parkway and 36th Avenue	Better	F	E
Lake Otis Parkway and Tudor Road	Better	H	E
Lake Otis Parkway and O'Malley Road	Better	F	E
Seward Highway and Fireweed Lane	Better	F	E
Seward Highway and Northern Lights Boulevard	Better	G	F
Seward Highway and Benson Boulevard	Better	G	F
Seward Highway and 36th Avenue	Same	H	H
Old Seward Highway and Tudor Road	Worse	E	H
Abbott Road and Elmore Road	Worse	C	F
Northern Lights Boulevard and UAA Drive	Same	F	F
5th Avenue and Airport Heights Road	Same	E	E
15th Avenue and C Street	Same	G	G
Dowling Road and Lake Otis Parkway	Better	E	C
Boniface Parkway and Northern Lights Boulevard	Worse	E	F
Boniface Parkway and Debarr Road	Same	F	F
Boniface Parkway and Tudor Road	Same	E	E
Minnesota Drive and Spenard Road	Better	H	F
Minnesota Street and Tudor Road	Same	F	F
Bragaw Road and Debarr Road	Better	G	E
Muldoon Road and Debarr Road	Same	C	C
Muldoon Road and Northern Lights Boulevard	Better	C	B
Muldoon Road and 36th Avenue	Same	D	D
Arctic Boulevard and Tudor Road	Worse	E	F
International Airport Road and Spenard Road	Same	C	C
Elmore Road and Tudor Road	Better	G	F
Tudor Road and Dr. Martin Luther King Jr. Boulevard	Same	E	E
C Street and Tudor Road	Same	F	F

Vehicle Miles and Hours of Travel

Vehicle miles of travel (VMT) is a measure of aggregate vehicle travel demand. VMT also directly affects the amount of carbon monoxide emitted from vehicles and resultant air quality impacts. For 2007, this performance measure of the transportation system was derived by using the AMATS travel demand model estimate of traffic volume by roadway segment. Similar VMT estimates for 2002

and 1994 are available from earlier transportation modeling analyses. Figure 7 shows the estimated VMTs for 1994, 2002, and 2007. The VMT increased an average of 2.0% per year between 2002 and 2007; the annual increase from 1994 to 2007 averaged 2.55%.

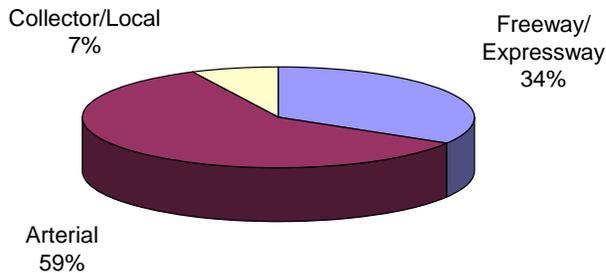
Figure 7. Estimated Daily Vehicle Miles and Hours of Travel, 1994–2007



Vehicle Miles of Travel per Capita

Population growth contributes to the increase in miles of travel. The performance measure “VMT per capita” determines the per person change in traffic growth. VMT per capita in 2007 was estimated by dividing the total daily VMT (5,772,900) by the total MOA population (estimated 284,000), or 20.3 daily vehicle miles per person. The 2007 figure was up slightly from the estimated 19.6 daily vehicle miles per person in 2002. For comparison, national results from the 2001 National Household Travel Survey show an average 15.2 daily VMT per person.

Figure 8. Vehicle Hours of Travel by Roadway Class, 2007



Source: AMATS transportation demand model

Vehicle Hours of Travel

In 2007, 145,800 vehicle hours of travel (VHT) occurred each weekday in personal vehicles and trucks. Personal vehicles accounted for 93% of total VHT, and trucks made up 7%. About one-third of all VHT was on freeways; 59% was on arterial roads; and the remainder was on other collector and local streets. Figure 8 shows the percentage of all VHT by roadway class. During 2007, 43% of all daily travel took place within the 5 hours composed of morning and afternoon peak periods (7 to 9 a.m. and 3 to 6 p.m.).

Travel Time

Travel time is a straightforward measure of transportation system performance and congestion. Travel time measurement is applicable to all modes of travel, including automobiles, trucks, transit, carpools, vanpools, and bicycles. Consequently, travel time comparisons can be made across various modes of travel as well as within modes. In addition, travel time measurements enable trend comparisons through time to judge changes in system conditions. A sufficient number of travel time measurements must be conducted to provide suitable statistical confidence.

Roadway travel times and speeds were measured in fall 2010 for the nine Anchorage roadway corridors listed below.

- Seward Highway (5th Avenue to Rabbit Creek Road)
- Glenn Highway (C Street to Birchwood Spur Road at the North Birchwood interchange)
- Minnesota Drive (5th Avenue to Seward Highway interchange)
- Northern Lights Boulevard (Minnesota Drive to Muldoon Road)
- Tudor Road/Muldoon Road (Minnesota Drive to Glenn Highway)
- Lake Otis Parkway (15th Avenue to O'Malley Road)
- A/C streets (Ocean Dock Road at Port of Anchorage entrance to Minnesota Drive)
- Debarr Road/15th Avenue (I Street to Muldoon Road)
- Dimond Boulevard/Abbott Road (Jewel Lake Road to Lake Otis Parkway)

Drivers in instrumented vehicles made multiple trips during the months of September, October, and early November 2010 on each corridor in the 7 to 9 a.m. (morning) commute period, during midday hours between 11 a.m. and 1 p.m., and again in the 4 to 6 p.m. (afternoon) commute hours. They drove at the same speed as other motorists and recorded their locations and clock times at major intersections along the way. Travel time measurement runs were made in each direction of travel for each corridor. Table 5 lists the average corridor travel minutes by time of day and direction for each corridor. The overall corridor speeds for the morning and afternoon peak periods also are shown for each direction of travel.

Table 5. Automobile Travel Time, 2010

Corridor	Direction	Length (miles)	Average Travel Time (minutes)			Average Speed (mph)	
			7-9 a.m.	Midday	4-6 p.m.	7-9 a.m.	4-6 p.m.
Seward Highway	north	9.2	12.2	12.0	12.5	45.5	44.3
	south	9.2	11.5	12.6	14.5	48.1	38.2
Glenn Highway	north/east	14.0	15.2	13.5	17.9	56.0	46.9
	south/west	14.0	19.1	15.8	16.7	44.4	48.9
Minnesota Drive	north	8.2	13.3	13.2	13.0	38.5	39.1
	south	8.2	13.2	11.8	16.6	37.6	29.8
Northern Lights Boulevard	east	6.2	12.2	12.3	17.6	29.1	21.4
	west	6.2	11.5	13.5	13.7	28.5	27.1
Tudor Rd/Muldoon Road	north/east	8.8	18.1	15.5	19.2	29.4	27.1
	south/west	8.8	17.5	17.2	21.2	30.3	24.9
Lake Otis Parkway	north	5.9	12.8	12.7	14.6	27.6	24.3
	south	5.9	14.0	12.0	14.3	25.2	24.8
A/C streets	north	7.3	14.8	14.4	14.6	30.0	30.3
	south	7.3	14.9	14.4	14.4	29.4	30.4
Debarr Road/15th Avenue	east	5.6	13.1	14.2	15.3	25.6	21.4
	west	5.6	13.3	12.8	13.1	25.2	25.6
Dimond Blvd/Abbott Road	east	5.3	8.3	8.9	12.5	31.7	20.8
	west	5.3	7.6	9.4	9.9	34.3	26.6

Note: mph = miles per hour

Comparisons of the corridor travel times for the morning peak period, midday, and afternoon peak period are displayed in Figure 9. The length of each bar shows the minutes of travel time required to traverse the full corridor. With few exceptions, commute journeys for the afternoon peak period take the longest. Commute times for the morning peak period are approximately comparable to midday times for seven of the nine corridors.

The travel time ratios presented in Figure 9 do not tell the whole story for the Glenn Highway and Seward Highway, both of which contain both arterial segments and freeway segments. As expected, speeds are significantly slower on the arterial segments compared to the freeway segments. During the morning commute (see Figure 10), the travel speeds on the northbound Seward Highway are above 50 mph until Tudor Road, where speeds quickly drop to about 25 mph as the highway approaches the arterial segments and is slowed by the traffic lights in the midtown district.

Figure 9. Automobile Travel Times by Time of Day, 2010

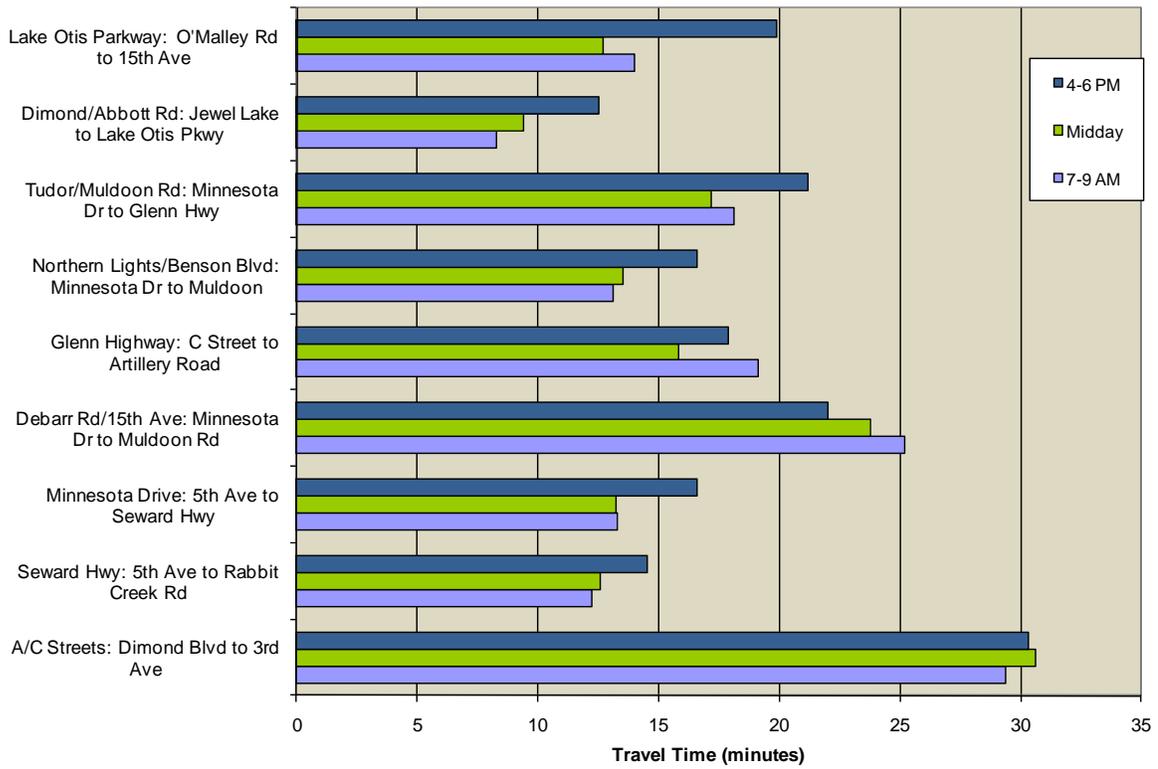
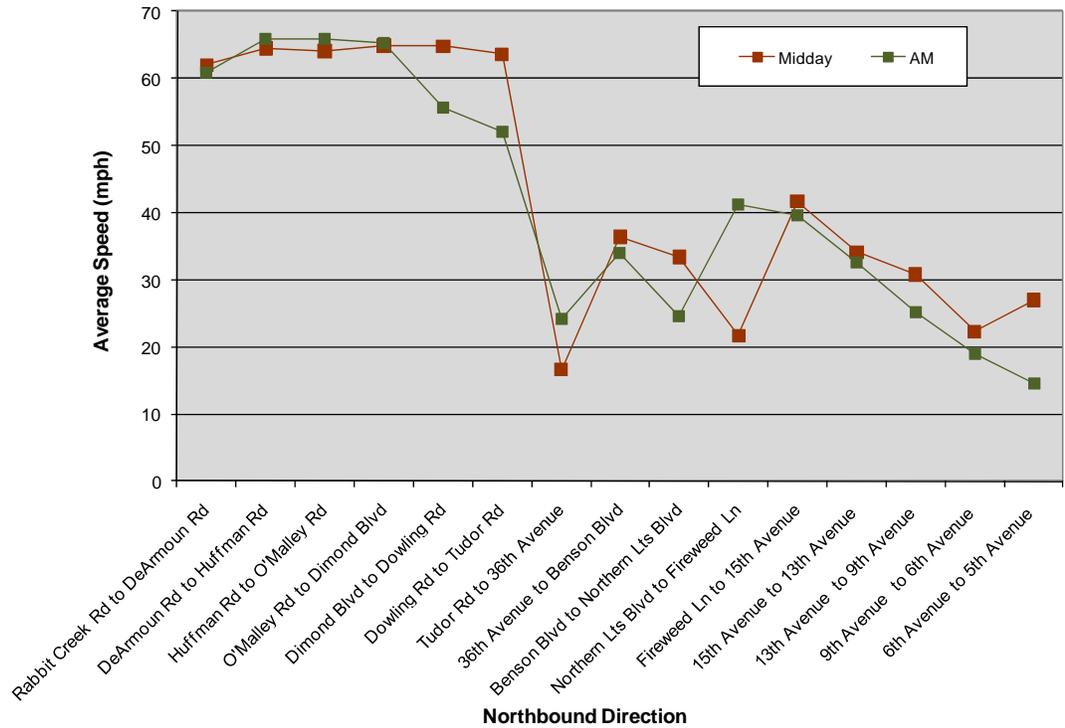
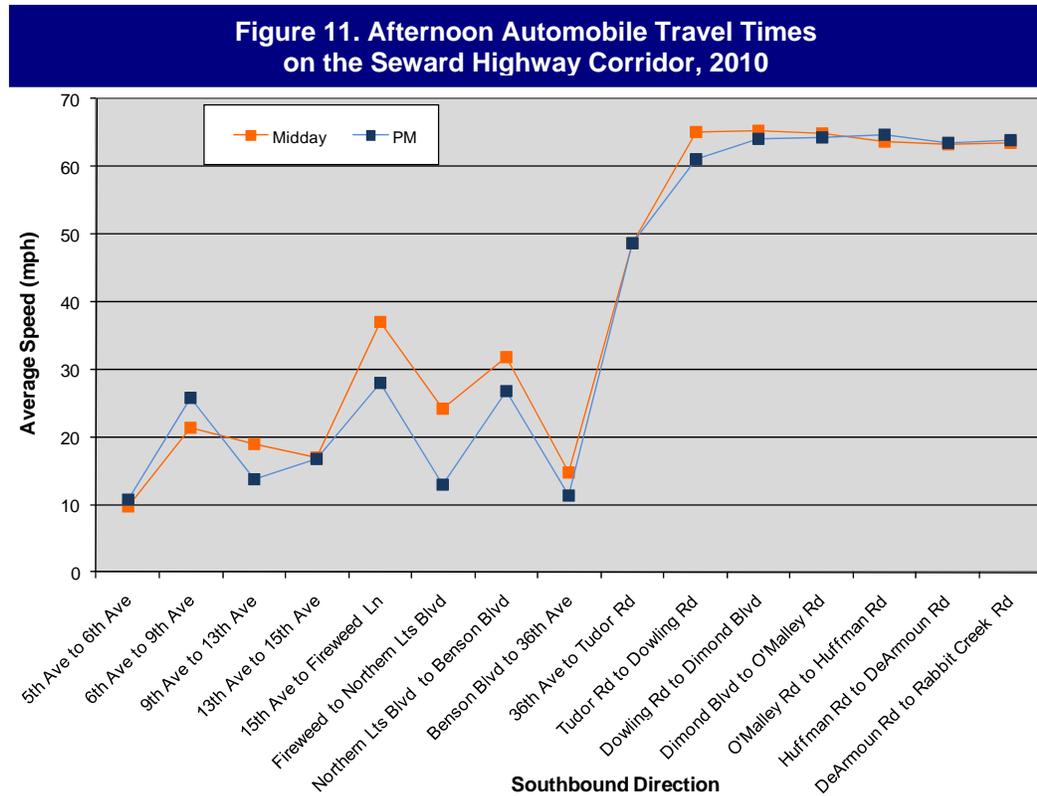


Figure 10. Morning Automobile Travel Times on the Seward Highway Corridor, 2010



This effect is even more pronounced during the afternoon commute. Figure 11 shows that the average travel speeds on the southbound Seward Highway increase substantially after traffic reaches the last traffic light at 36th Avenue. Several segments along the arterial portion of the Seward Highway are among the slowest streets in the entire road network. In 2010, the segment between 13th and 15th avenues had an average travel speed of only 6.2 mph, and the segment between Fireweed Lane and Northern Lights Boulevard has an average travel speed of 7.5 mph.



Similar conditions exist on the Glenn Highway; traffic moves at nearly free-flow speeds into town during the morning commute until it reaches the first traffic light at Airport Heights Road and then proceeds to slow down substantially, dropping to less than 15 mph between Concrete Street and Ingra Street (see Figure 12). The reverse is true in the afternoon commute, when traffic on the Glenn Highway speeds up after passing the last traffic light at Airport Heights Road (see Figure 13). The most severe congestion occurs between Concrete Street and Airport Heights Road, where the average speed is about 15 mph.

Figure 12. Automobile Travel Times during the Morning Peak Period on the Glenn Highway Corridor, 2010

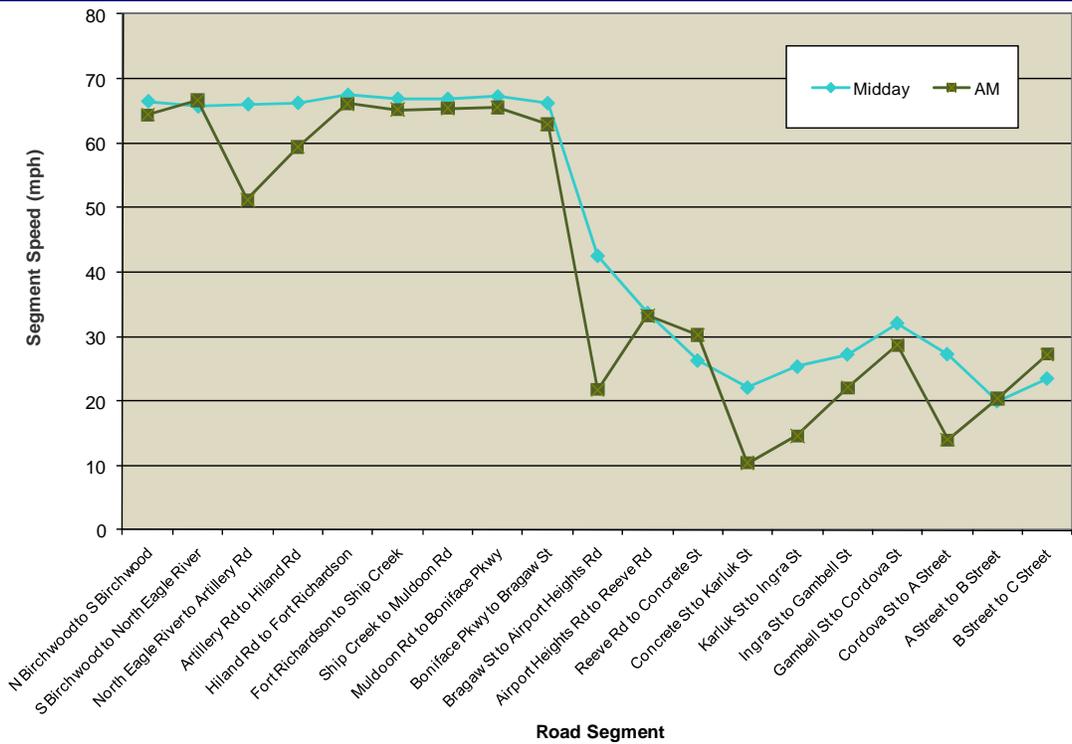
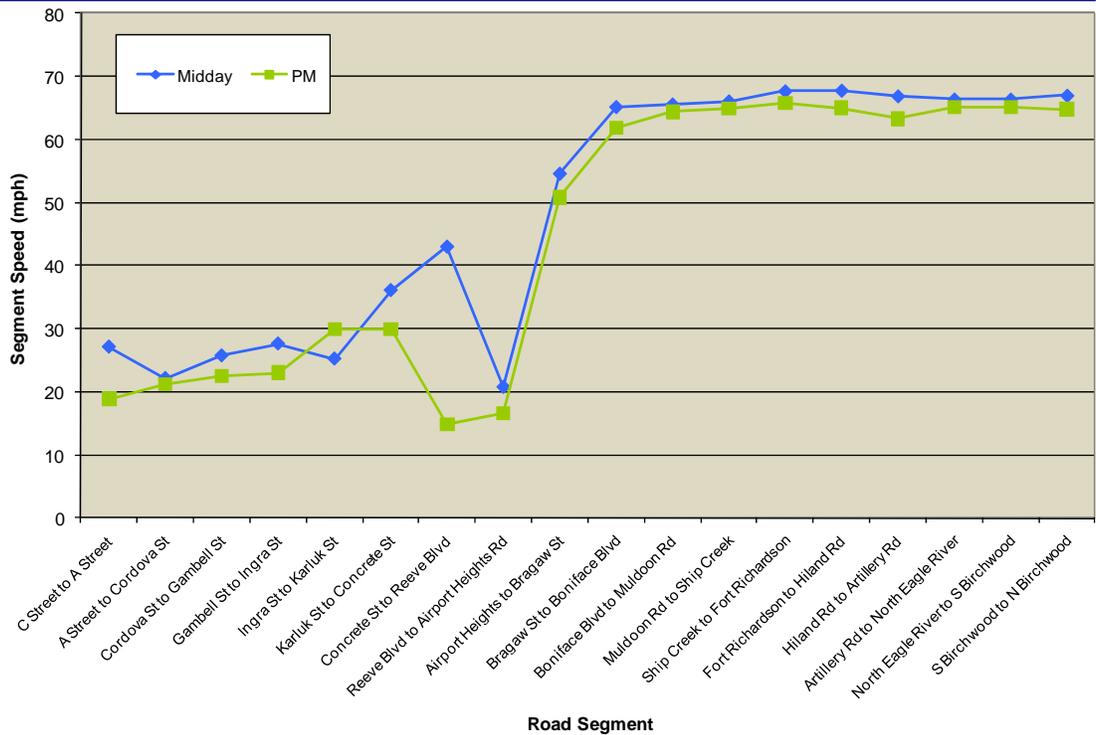


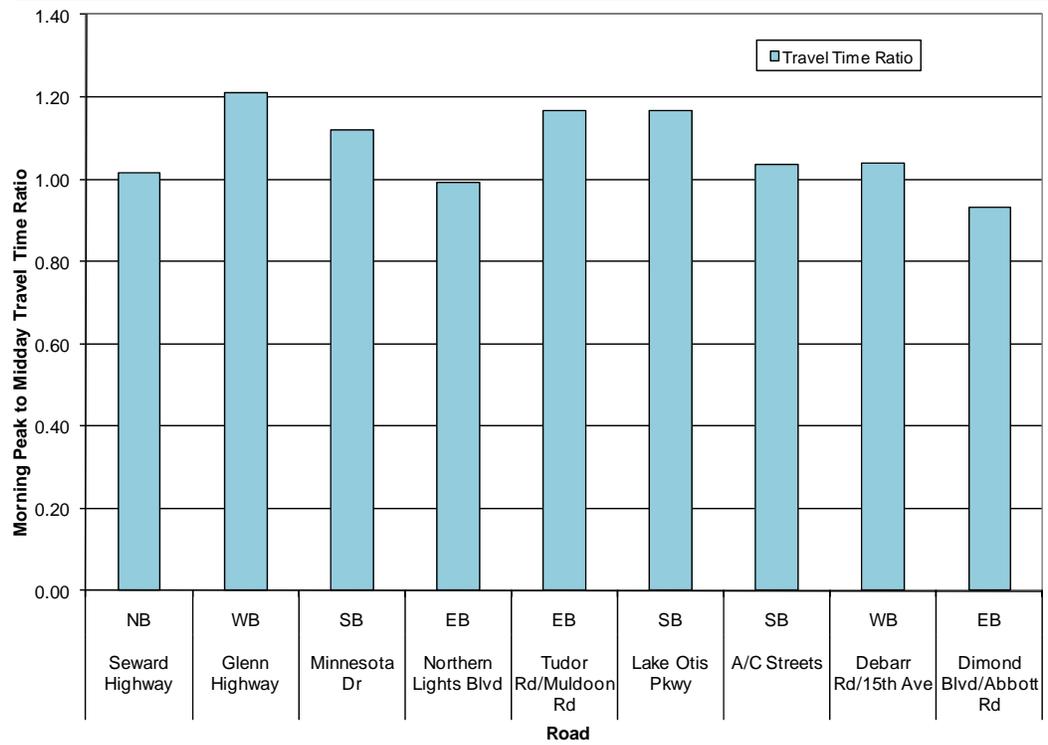
Figure 13. Automobile Travel Times during the Afternoon Peak Period on the Glenn Highway Corridor, 2010



Commute Congestion Delays

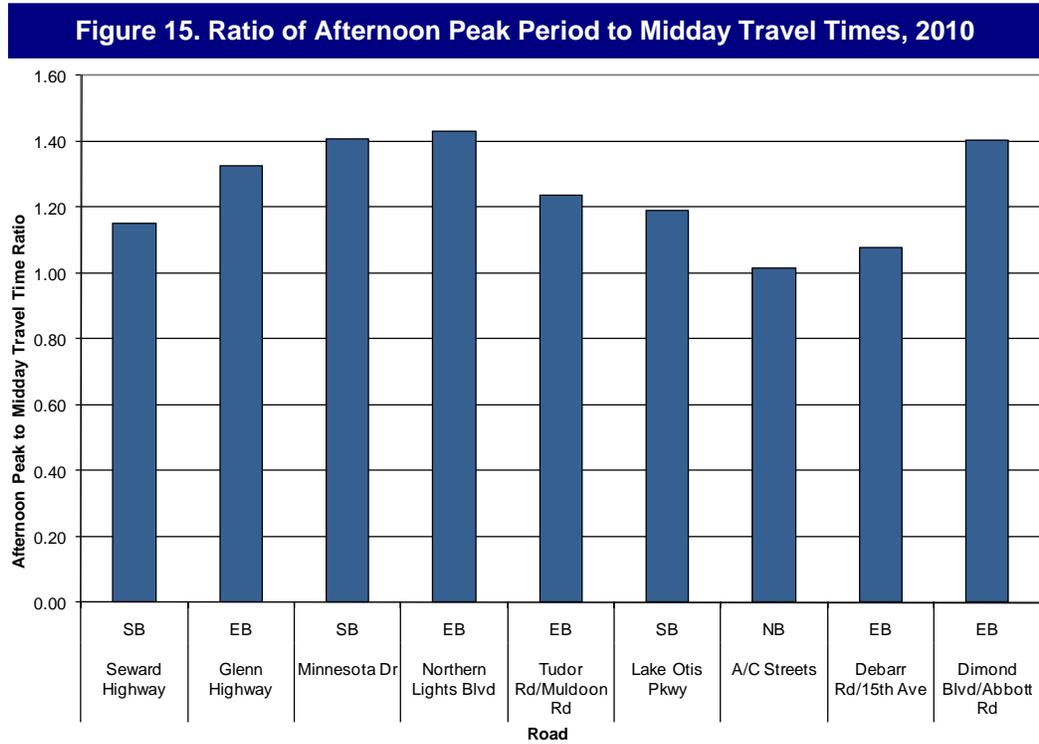
The difference between travel times at midday and commute peak periods generally reflects delays caused by congestion.¹² Figures 14 and 15 illustrate the ratios of morning peak period to midday travel times and afternoon peak period to midday travel times, respectively. The designated direction of travel shown for each corridor in the respective morning and afternoon figure has the largest ratio, or highest indication of congestion.

Figure 14. Ratio of Morning Peak Period to Midday Travel Times, 2010



Note: Ratio shown for most congested direction of travel.
 EB = Eastbound, NB = Northbound, SB = Southbound, WB = Westbound

¹² As noted in the LOS discussion of this report, midday congestion is increasing for Anchorage intersections; therefore, delays are occurring in commuting peak periods as well as during midday hours. In some locations, such as shopping centers and commercial areas, midday travel may be slower than during commute hours.



Note: Ratio shown for most congested direction of travel.
 EB = Eastbound, NB = Northbound, SB = Southbound, WB = Westbound

For the morning commute period (Figure 14), the inbound Glenn Highway (westbound) has a congestion ratio of 1.2, indicating that travel in the morning commute takes 20% longer than corresponding travel in midday. Only two other corridors have a congestion ratio significantly greater than 1.0, Lake Otis Parkway (southbound) and Tudor Road/Muldoon Road (eastbound). The Dimond Boulevard/Abbott Road corridor actually has lower travel times for the morning commute than for midday, reflecting the commercial and retail nature of land use for the corridor and the corresponding traffic generated by midday shopping trips.

Congestion ratios are generally much higher for the afternoon commute period (Figure 15). All but one of the corridors studied have congestion ratios significantly higher than 1.0. Three corridors—Minnesota Drive, Northern Lights Boulevard, and Dimond Boulevard/Abbott Road—have congestion ratios of 1.4, or 40% longer travel times during the afternoon peak period than during midday. The outbound Glenn Highway also has a high congestion ratio of 1.3. The A/C streets corridor appears to function fairly well, with travel speeds during midday almost the same as for the afternoon peak.

Figure 16. Duration of Morning Congested Conditions on the Glenn Highway, Bragaw Street Overpass to C Street, as Measured by Average Speed, 2010

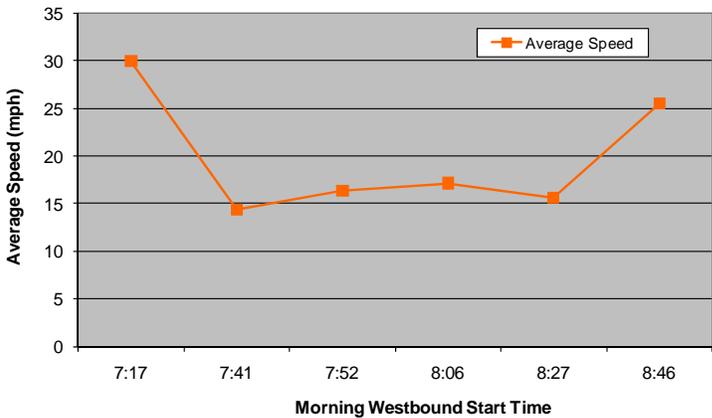
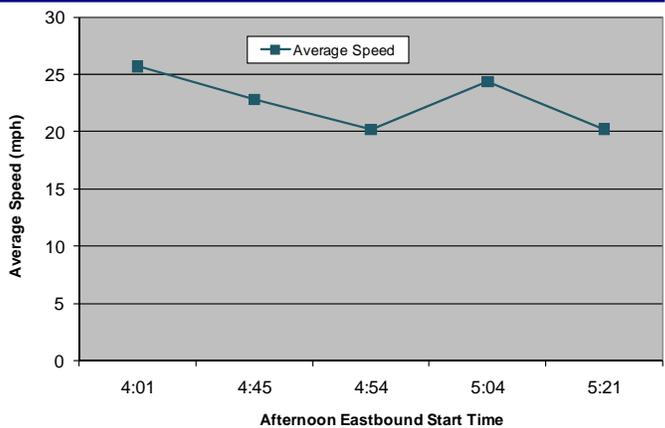


Figure 17. Duration of Afternoon Congested Conditions on the Glenn Highway, C Street to Bragaw Street Overpass, as Measured by Average Speed, 2010



Another aspect of traffic congestion that is important to consider is the duration of congested conditions.

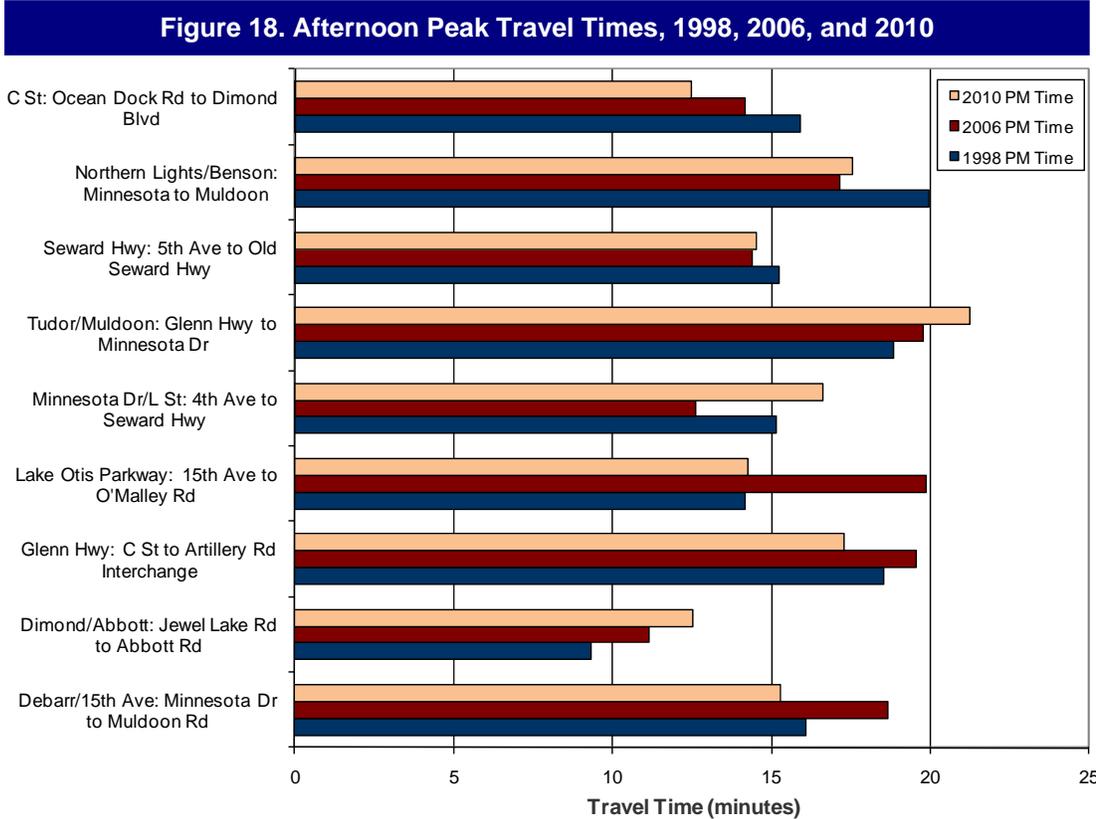
Congestion may not be regarded as too disruptive to travel if it only occurs for a short time (say, 15 minutes). Additional travel time runs were conducted on the Glenn Highway to determine the length of the afternoon peak-period delay.

Figure 16 shows that the morning peak-period delay lasts for approximately 50 minutes between the hours of 7:40 and 8:30 am.

Figure 17 indicates that the afternoon peak period delay appears to be less intense but lasts longer, with average speeds of less than 25 mph from shortly after 4:00 p.m. until at least 5:20 p.m.

Travel Time Comparisons

The MOA has been conducting travel time surveys for the same nine corridors since 1998. For 1998, 2006, and 2010 travel time data were collected in the fall; and in 2003, travel time studies were performed in the spring. Because travel behavior and volume may differ between spring and fall, only the fall travel time runs were considered to be suitable for comparison purposes. The three sets of measurements (1998, 2006, and 2010) permit a comparison of how travel times have changed during the 12-year period. Figure 18 shows the results for travel in the most congested direction during the afternoon peak period.



The travel times for the majority of the corridors studied showed only modest change—generally less than 3 minutes—from 1998 to 2010. Travel times for the Dimond Boulevard/Abbott Road corridor deteriorated, with each new data set showing slower speeds than the previous one. The longer travel times reflect the rapid retail growth of the area during the past 12 years. The travel time pattern for the Tudor Road/Muldoon Road corridor is similar, and may have resulted from high growth rates in the midtown employment/office district.

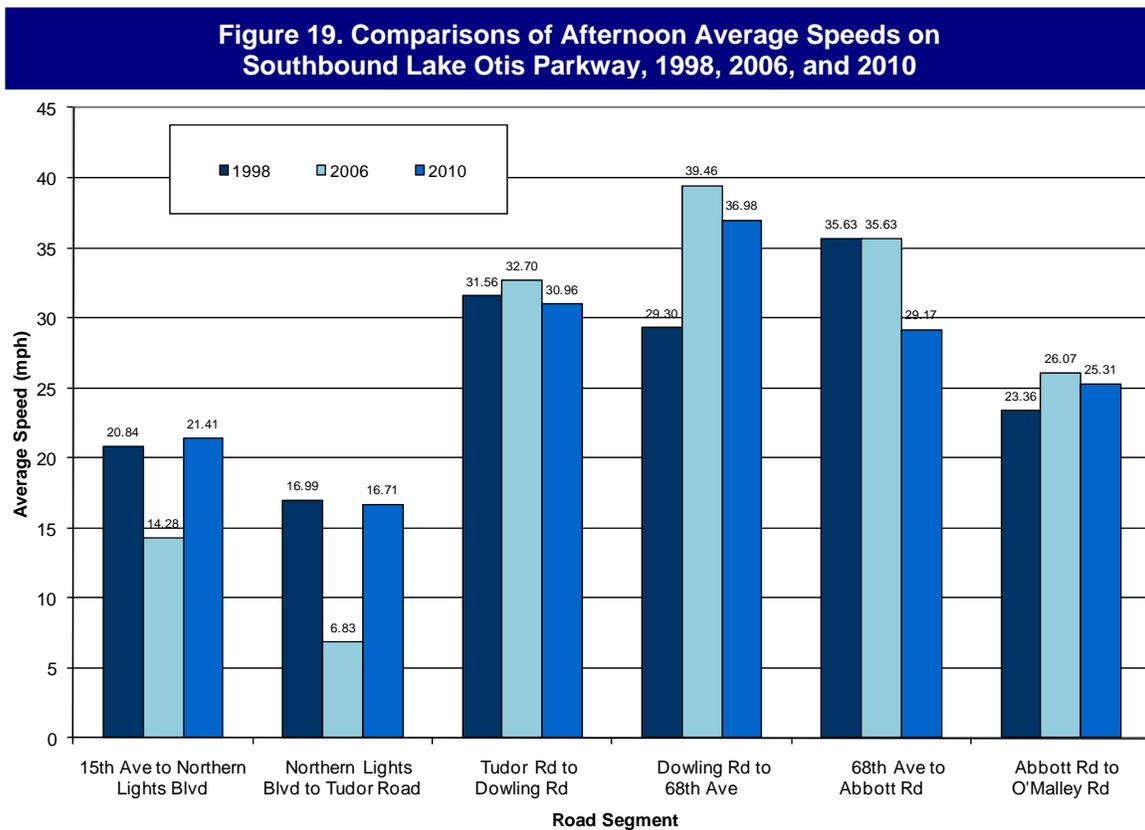
None of the high-volume freeway corridors—Seward Highway, Glenn Highway, or Minnesota Drive—exhibits much difference in travel time between the 1998 and 2010 studies. The Glenn Highway travel times actually improved slightly, possibly because of recent capacity improvements, including the Bragaw Road interchange and the expansion from four lanes to six lanes between Airport Heights Road and the beginning of the 5th/6th avenues couplet.

Effect of Recent Transportation Improvements on Travel Times

Of particular interest in Figure 18 is the beneficial change in travel time along the Lake Otis Parkway corridor. As previously discussed, significant roadway improvements have been made near the Lake Otis Parkway and Tudor Road intersection during the past 3 years that may have a major impact on travel times along Lake Otis Parkway. The afternoon peak travel times for northbound traffic on Lake Otis Parkway improved substantially between 2006 and 2010 and are now

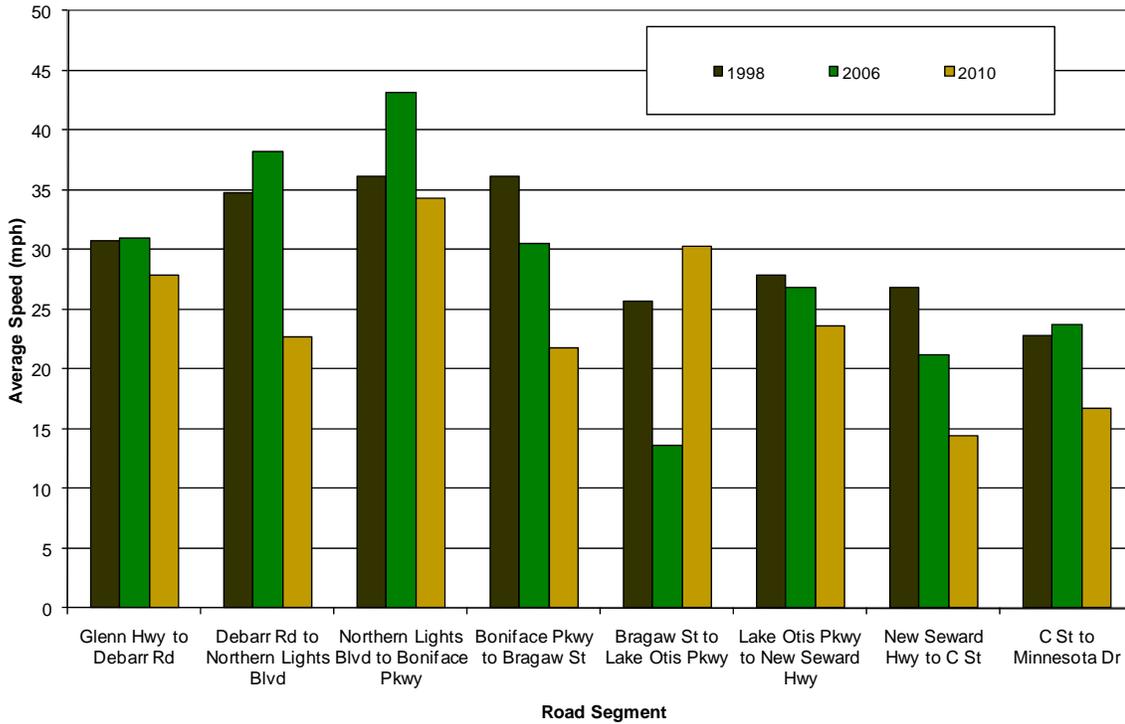
about the same as the travel times recorded 12 years ago in 1998, despite the increased number of office and institutional facilities in the area.

The effect of the roadway improvements along the Lake Otis Parkway corridor is even more striking when examining travel time changes by segment (see Figure 19). The segment between Northern Lights Boulevard and Tudor Road was one of the most congested roadway segments in the entire Anchorage metropolitan area in 2006, with an average speed of only 6.8 mph. In 2010 the average speed along the segment increased almost 2½ times to 16.7 mph in the afternoon peak period. One segment of Lake Otis Parkway between 68th Avenue and Abbott Road actually experienced a decrease in travel speeds from 36.5 to 29.2 mph from 2006 to 2010. The slower speeds may be due to the installation of additional traffic lights at the intersections of 72nd Avenue and 63th Avenue in 2008.



The roadway improvements on the east side of the Anchorage Bowl also affected travel times along the Tudor Road corridor, although much less pronounced than along Lake Otis Parkway. Figure 20 shows that all westbound segments of the Tudor Road/Muldoon Road corridor, except one, experienced a travel speed reduction between 2006 and 2010 during the afternoon peak period. On the segment between Bragaw Street and Lake Otis Parkway, travel speeds more than doubled from 13.6 to 30.3 mph from 2006 to 2010.

Figure 20. Comparisons of Speeds for the Afternoon Peak Period along Westbound Tudor Road, 1998, 2006, and 2010



Comparison of Congestion for Anchorage and Other Urban Areas

The Texas Transportation Institute (TTI) at Texas A&M University has been monitoring congestion in urban areas of the United States since 1982. Its latest publication, *2010 Urban Mobility Report*, provides congestion estimates for all 439 urban areas and specific congestion estimates calculated for 101 individual urban areas. TTI uses four primary measures to assess the magnitude and intensity of congestion:

- Travel time index**—the ratio of peak-period travel time to free-flow travel time. The travel time index expresses the average amount of extra time it takes to travel in the peak period relative to free-flow travel. A travel time index of 1.3, for example, indicates a 20-minute free-flow trip will take 26 minutes during the peak travel periods, which results in a 6-minute (30%) travel time penalty. Free-flow travel speeds are used because they are an easy and familiar comparison standard, not because they should be the goal for urban transportation system improvements.
- Delay per traveler**—the hours of extra travel time divided by the number of urban area peak-period travelers. This annual measure indicates the sum of all the extra travel time that would occur during the year for the average traveler. All urban travelers are used as the comparison device to better relate the delay statistics to those affected on the roadways.

- **Cost of congestion**—the value of the extra time and fuel that are consumed during congested travel. The value of time is estimated for passenger vehicles and trucks, and the fuel costs are the per gallon average price for each state. The value of a person’s time is derived from the perspective of the individual’s value of his or her time, rather than being based on the wage rate. Only the value of truck operating time is included; the value of the commodities is not. The value of time is the same for all urban areas.
- **Change in congestion**—rather than being specific, this measure is a concept used in many analyses. The trends in congestion are often more important than the absolute mobility levels, because they indicate whether the right amount of improvement is being funded.

The TTI results from its urban mobility research are especially useful because they identify multi-year trends and provide a consistent basis for ranking of congestion levels in all urban areas and between urban areas of similar size. The latest TTI data for 2009 reveals that although 2008 had been the best year for commuters in at least a decade, traffic congestion nationwide again began to grow in 2009.

The TTI research highlights the following effects of the nation’s traffic problems:

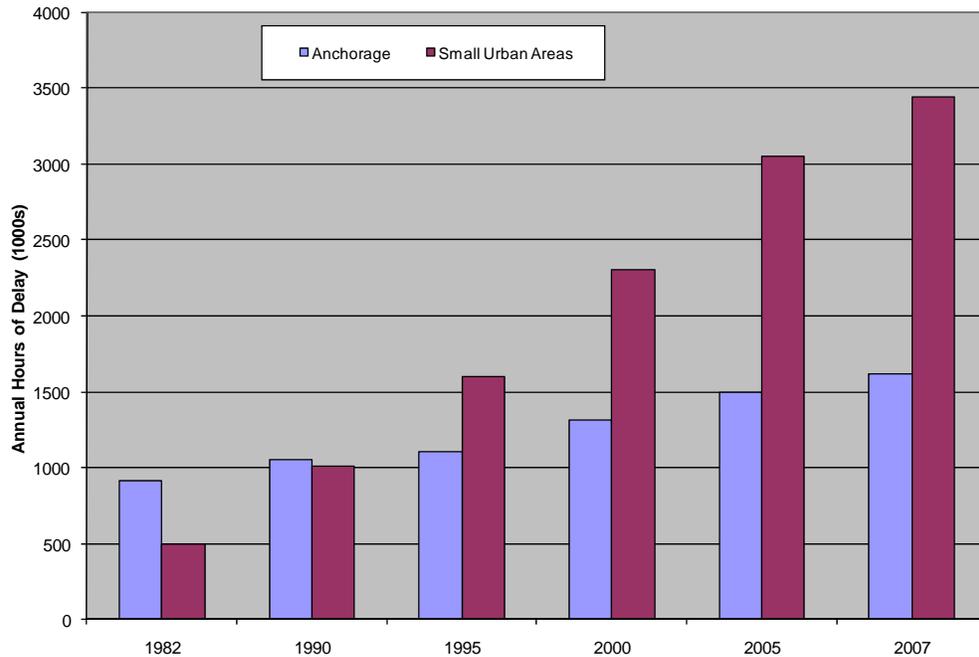
- Congestion costs continue to rise. Measured in constant 2009 dollars, the cost of congestion rose from \$24 billion in 1982 to \$115 billion in 2009.
- The total amount of wasted fuel in 2009 topped 3.9 billion gallons—equal to 130 days of flow in the trans-Alaska oil pipeline.
- The cost of congestion to the average commuter was \$808 in 2009, compared with an inflation-adjusted \$351 in 1982.
- Yearly peak delay for the average commuter was 34 hours in 2009, up from 14 hours in 1982.

How Anchorage Ranks Among Urban Area of Similar Size

Figure 21 compares total annual delay hours for Anchorage and the average of 16 urban areas with populations of fewer than 500,000 from 1982 through 2007. The delay hours through time for other urban areas have increased markedly greater than for Anchorage.

According to the TTI, urban areas where capacity expansion (new roadway construction or transit expansion) matched increased demand saw congestion grow much more slowly than regions where capacity lagged demand. As it turns out, Anchorage is 1 of only 14 cities (out of 101 surveyed) where transportation demand increased less than 10% faster than roadway capacity. Many of these 14 cities had

Figure 21. Total Annual Delay for Urban Areas with Populations of Fewer than 500,000, 1982–2007



Source: Texas Transportation Institute, *2009 Urban Mobility Report*, “Performance Measure Summary for Anchorage and Small Urban Areas.” Note: The *2010 Urban Mobility Report* did not provide annual hour delay data for small urban areas.

slow population growth, such as New Orleans, Louisiana, and Dayton, Ohio.¹³ The population of Anchorage, on the other hand, grew a relatively healthy 12% between 2000 and 2009.¹⁴ Roadway capacity improvements may explain why Anchorage

Table 6. Congestion Measures Ranking for Anchorage among 101 Urban Areas, 2009

Measure	2009
Total annual excess fuel consumed	96
Excess fuel consumed per automobile commuter	86
Annual total delay	94
Annual delay per automobile commuter	87
Travel time index (peak/free-flow travel time)	95
Total congestion cost	95

Note: The higher the ranking, the worse the congestion. A ranking of 101 represents the least congested urban area.

Source: Texas Transportation Institute, *2010 Urban Mobility Report*, “Performance Measure Summary for Anchorage.”

congestion, as indicated by total annual excess fuel consumed, delay per traveler, total delay, travel time indices, and total congestion cost, ranks much lower than that for most of its peers (see Table 6).

¹³ Texas Transportation Institute, *2010 Urban Mobility Report*, December 2010.

¹⁴ Source: Alaska Department of Labor

Traffic Safety

Table 7 summarizes traffic crashes from 2000 to 2009 by severity. The numbers of total vehicle crashes have remained steady overall during that time period. Fatal crashes actually declined substantially from 28 in 2000 to 20 in 2009.¹⁵ Considering that the vehicle miles traveled have increased about 2% per year during the last decade, the fact that total accidents have held steady at around 7,000 per year can be seen as a substantial improvement.

Table 7. Vehicle Crashes by Type, 2000–2009

Year	Accident Total	Non-injury	Injury	Fatality
2000	6,922	4,933	1,961	28
2001	8,515	6,034	2,454	27
2002	7,874	5,558	2,282	34
2003	7,969	5,580	2,364	25
2004	7,410	5,124	2,259	27
2005	6,767	4,538	2,214	15
2006	6,115	4,191	1,909	15
2007	7,454	5,204	2,226	24
2008	7,533	5,426	2,091	16
2009	7,109	4,970	2,119	20

Source: MOA Traffic Department annual reports.

Effect of Crashes on Non-recurring Congestion

Peak period (rush-hour) congestion is predictable, but not all congestion occurs on a regular basis. Irregular events such as crashes, stalled vehicles, work zones, weather problems, and special events, sometimes cause unreliable travel times and contribute significantly to the overall congestion problem. Worsening congestion because of irregular events is reflected in several ways:

- Trips take longer.
- Congestion affects more of the day.
- Congestion affects weekend travel and rural areas.
- Congestion affects more personal trips and freight shipments.
- Trip travel times increasingly are unreliable.

Traffic accidents are responsible for most of the peak-hour congestion arising from incidents of all types, except for road blockages because of construction or repairs.

¹⁵ See *2009 Annual Traffic Report* prepared by the MOA Traffic Department for more detail on analysis, trends, types, locations, and related characteristics of crashes.

Neither the MOA nor the Alaska Department of Transportation and Public Facilities maintains data on the duration or impact of non-recurring events. Anecdotally, however, it appears that vehicular crashes may have a substantial effect on highway travel speeds, especially in areas where there are no alternative routes around the accident, such as the Glenn Highway.

Table 8 shows the number of vehicular crashes on the Glenn Highway between Airport Heights Drive and the Parks Highway interchange between 1999 and 2008. In every year, except 2007, more than one crash per day occurred on average on this highway stretch. The frequency of vehicular crashes is highly correlated to traffic volume. Although the travel time speeds recorded for 2010 show almost free-flow travel speeds on the freeway section of the Glenn Highway during normal operating conditions (see Figures 12 and 13), Table 8 data indicate that these speeds may be frequently reduced as a result of accidents.

Table 8. Severity of Glenn Highway Crashes Between Airport Heights Drive and Parks Highway Interchange, 1999–2008

Year	Fatality	Incapacitating Injury	Non-incapacitating or Possible Injury	Property Damage Only	Total
2000	1	22	143	298	464
2001	4	10	175	268	457
2002	4	9	168	366	547
2003	5	31	133	259	428
2004	5	33	132	289	459
2005	7	28	167	320	522
2006	1	35	146	300	482
2007	1	21	136	247	405
2008	3	13	78	196	290
2009	1	15	101	271	388

Source: MOA Traffic Department annual reports.

Public Transportation

In 2008, People Mover surpassed the 4 million annual ridership level for the first time in its history (see Table 9), carrying a total of 4,220,667 passengers.¹⁶ The 2010 ridership figure also exceeded this mark and was 33% higher than in 2002.

Table 9. People Mover Operating and Passenger Statistics, 1996–2010

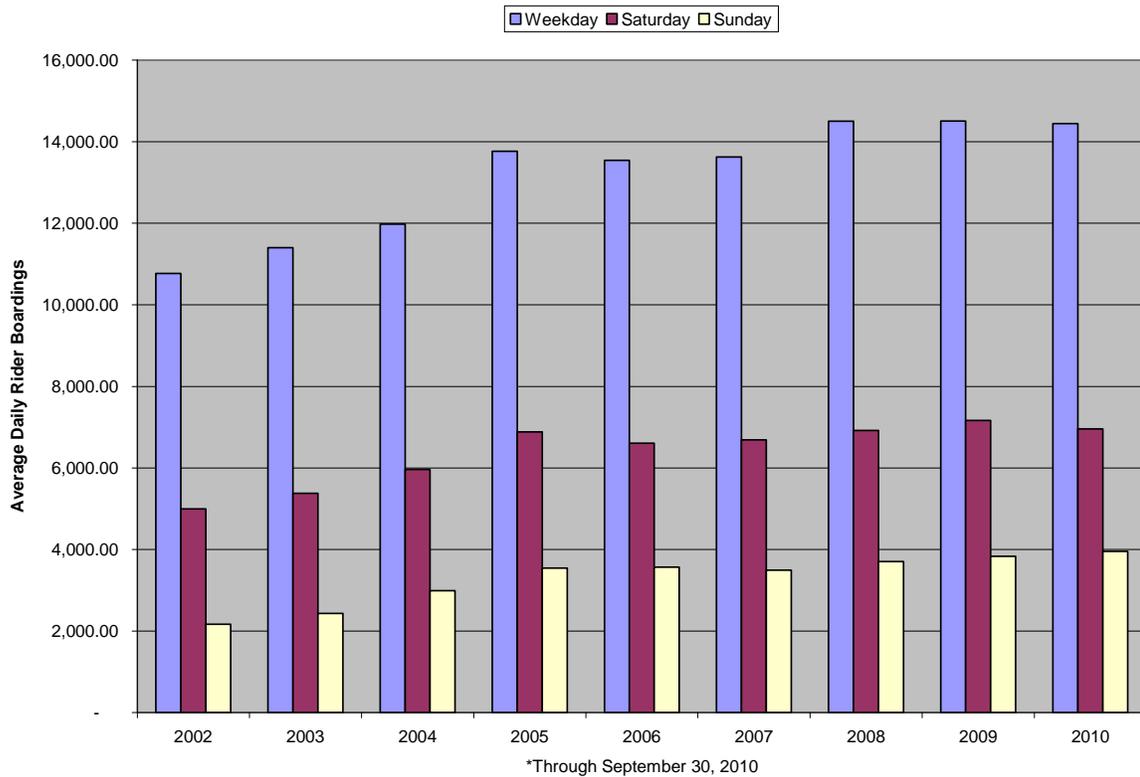
Year	Peak Period Buses	Timetable Hours	Passenger Boardings
1996	38	105,569	3,052,690
1997	42	107,315	3,161,658
1998	42	108,666	3,220,524
1999	39	107,414	3,316,060
2000	40	104,506	3,356,982
2001	40	109,255	3,339,940
2002	41	110,449	3,120,567
2003	43	114,614	3,339,451
2004	46	124,734	3,536,059
2005	46	131,037	3,975,074
2006	46	130,324	3,948,228
2007	46	130,184	3,989,137
2008	46	132,120	4,220,667
2009	45	131,125	4,184,141
2010	43	126,655	4,145,569

Source: MOA Public Transportation Department

The annual ridership data can be further broken down by average daily ridership. Figure 22 shows the daily ridership trends for weekday, Saturday, and Sunday ridership. Passenger boardings from 2002 to 2010 have grown by more than 3,673 per weekday (34%), nearly 1,964 on Saturdays (39%), and 1,785 on Sundays (82%).

¹⁶ Passengers are calculated as the total number of on-off trips. Thus, a trip with one transfer would be calculated as two passenger trips.

Figure 22. People Mover Average Daily Riders, 2002-2010*



Service Hours and Service Productivity Changes

People Mover weekday and weekend service frequencies operating as of February 2010 are tallied in Table 10. The route structure has changed little since 2007 (as discussed in the Introduction chapter) when many of the recommendations of the 2002 People Mover Blueprint 17 were implemented. (Note: A new route study completed in 2010 recommends additional route changes.)

Figure 23 shows the corresponding number of bus service hours operated for 2002 through 2010. The increases in service hours of operation for 2002 to 2010 are approximately 11% for weekdays, 27% for Saturdays, and 85% for Sundays. The service hours in 2010 were reduced from the levels of 2009.

¹⁷ RLS and Associates, *People Mover Blueprint: A Plan to Restructure the Anchorage Transit System*, 2002.

Table 10. People Mover Routes and Schedules, February 2010

Route	Weekday			Weekend	
	Service Span (hours)	Service Frequency (minutes)		Service Frequency (minutes)	
		Peak Periods	Midday	Saturday	Sunday
1 – Lake Otis Pkwy and Muldoon Rd	16:06	60	60	60	60
2 – Lake Otis Pkwy–Downtown	16:43	30,60	60	60	60
3 – Northern Lights	17:32	30	30	60	60
7 – Spenard Rd/Jewel Lake Rd	17:24	30	30	60	60
8 – Northway Mall	15:54	30,60	60	60	60
9 – Arctic Boulevard	15:45	30	30	60	60
13 – 15th Ave, UAA, and Muldoon Rd	17:24	30,60	60	60	60
14 – Government Hill	15:23	60	60	60	60
15 – 15th Avenue	16:24	30	30	60	60
36 – 36th Avenue	17:19	30,60	60	60	60
45 – Mountain View	17:34	30	30	60	60
60 – Old Seward Highway	15:51	30,60	60	60	60
75 – Tudor Road	16:32	30,60	60	60	60
102 – Eagle River–Downtown	13:17	15,20	no service	no service	no service

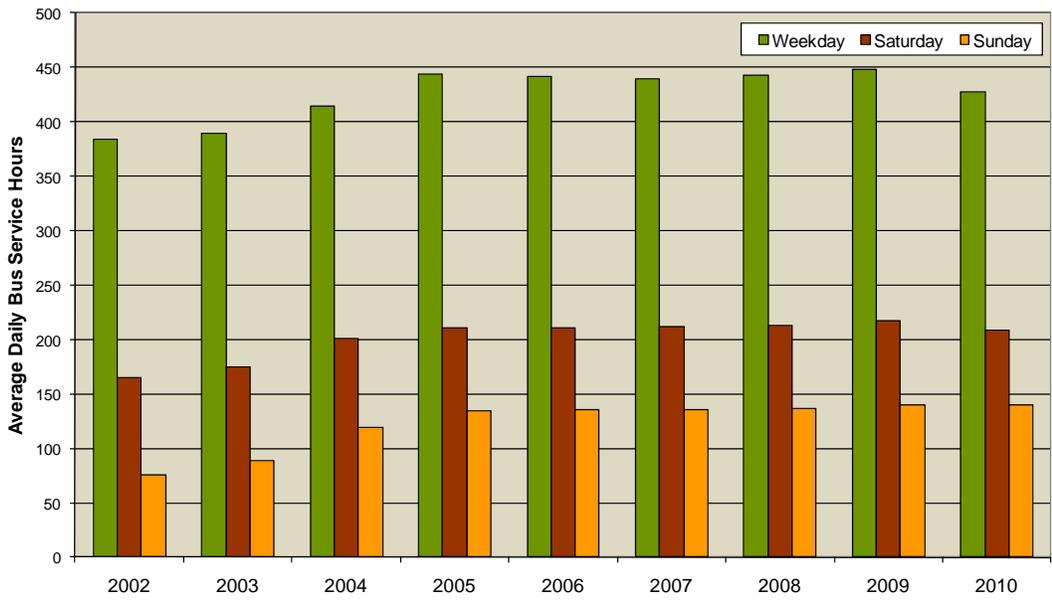
Note: UAA = University of Alaska Anchorage

Source: MOA Public Transportation Department, People Mover Route Schedule Guide, Feb. 2010.

Figure 24 displays bus service productivity—the numbers of passenger boardings per hour of bus service for weekdays, Saturdays, and Sundays. Weekday and Saturday service productivity has increased since 2002, and Sunday service productivity has remained virtually the same. Weekday service has seen the largest productivity gain, with an increase of more than 20%. Saturday service productivity increased by 10% from 2002 to 2010.

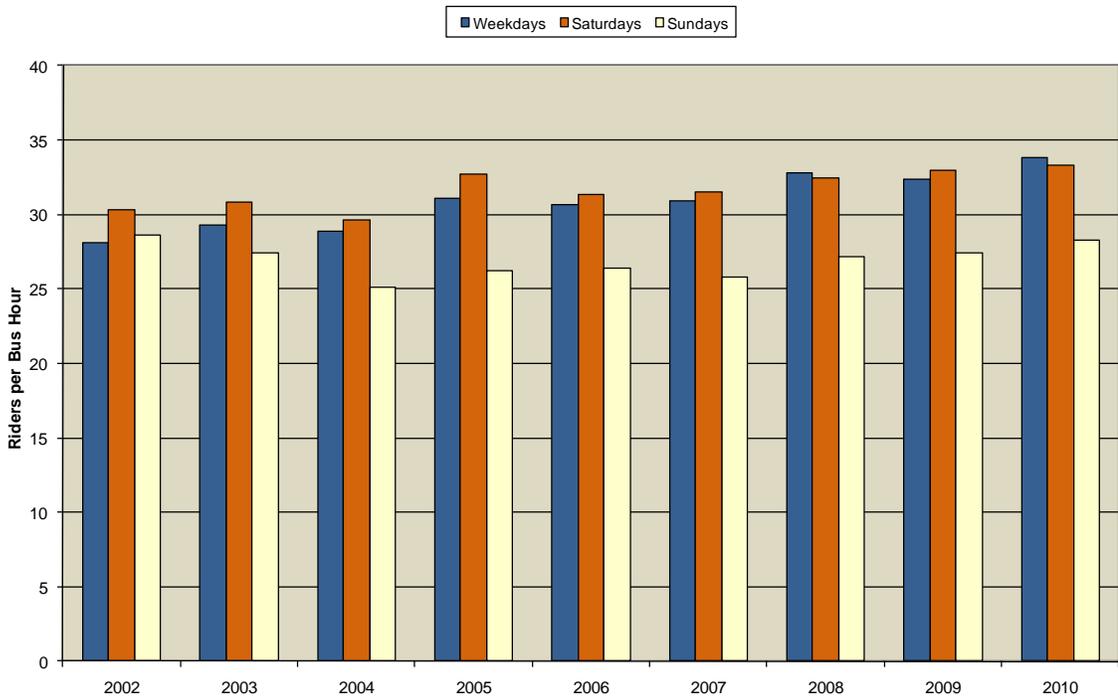
The productivity figures for weekday and Saturday indicate that ridership has increased significantly faster than the increase in service hours. From 2002 to 2010, weekday bus ridership rose 34% with an 11% increase in service hours and Saturday bus ridership rose 39% with a 27% increase in service hours. The jump in Sunday ridership for the same period, 82%, was almost directly proportional to the service hour increase, 84%. It appears that the improvements initiated under the 2002 People Mover Blueprint plan, which improved the frequency of service and consequently improved service convenience, had a multiplier effect on transit ridership.

Figure 23. Daily Bus Hours of Service, 2002–2010*



* Through September 2010

Figure 24. People Mover Productivity, 2002–2010*



* Through September 2010

Transit Mode Share for Journeys to Work

The share of trips that use public transportation is estimated in the U.S. Census reports on mode of travel for journey-to-work trips. Census journey-to-work data are available for 2000 and 2009.

Table 11 shows the modes used for travel to employment by Anchorage metropolitan area residents for those years. The modes used in the MOA changed slightly from 2000 to 2009; the percentage of persons who drove alone to work increased at the expense of carpoolers and transit riders. This finding is consistent with national trends, which show an increase in drive-alone commuters from 73.2% in 1990 to 75.9% in 2009.¹⁸

Table 11. U.S. Census Mode Shares and Travel Time for Journeys to Work by Anchorage Residents, 2000 and 2009

Mode of Travel to Work	Percentage of All Travel to Work	
	2000	2009
Automobile, truck, or van – drove alone	74.4	75.9
Automobile, truck, or van – carpooled	14.6	13.0
Public transportation (including taxicab) ^a	2.0	1.4
Walked	2.7	2.8
Other means	2.6	3.0
Worked at home	3.7	3.9
Travel Time	2000 (minutes)	2009 (minutes)
Mean travel time to work (minutes)	18.7	18.0

^a Public transportation excluded taxicabs in 2009 survey.

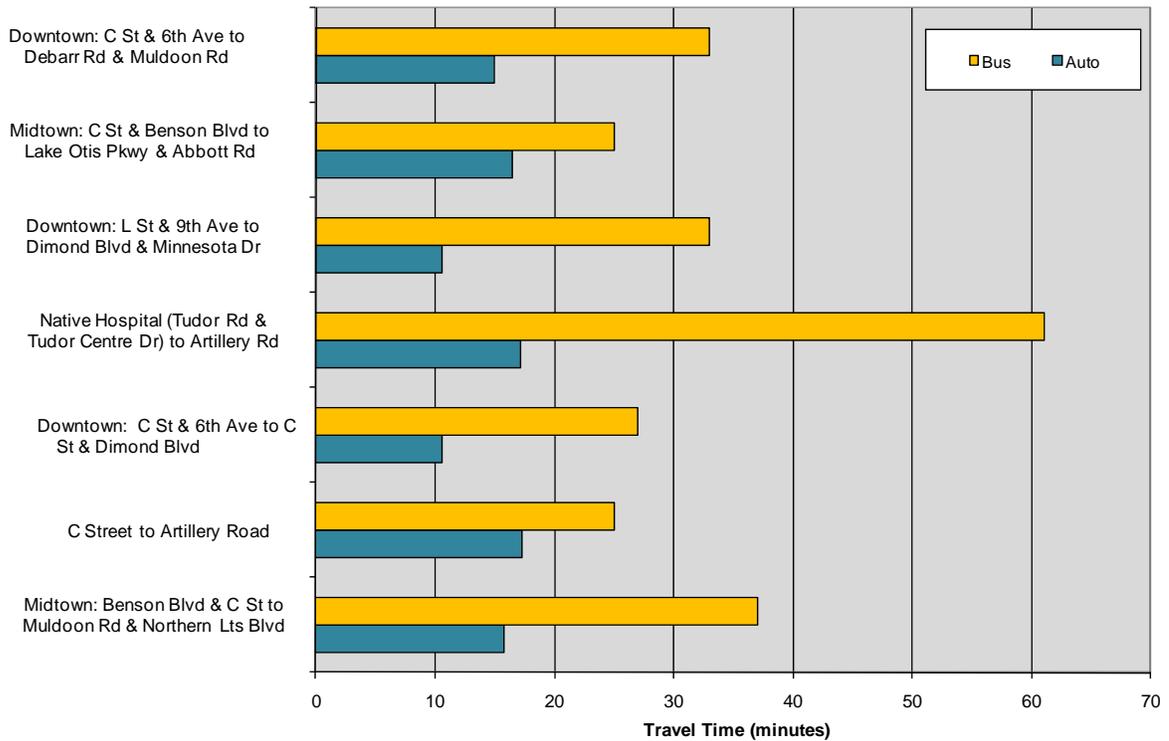
Source: 2000 U.S. Census and 2005–2009 American Community Survey.

People Mover Travel Times

Figure 25 compares the travel times for People Mover passengers and automobile travelers. It shows that transit journey times are generally more than two or three times as long as those for automobile travel on identical trips. One exception is the route from Downtown to Eagle River, which is largely an express service because of the relatively few stops. In general, the longer times for journeys by transit deter bus use by more travelers. Strategies such as the signal preemption (discussed in the Introduction chapter) are designed to improve the bus travel times and decrease the disparity with automobile travel times.

¹⁸ U.S. Census, 2005-2009 American Community Survey.

Figure 25. Travel Time Comparison for Automobile and Transit during Afternoon Peak Period, 2010

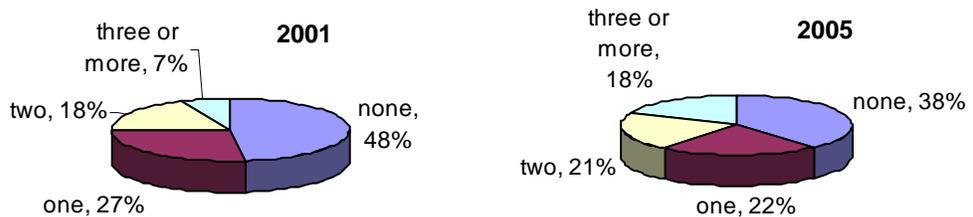


Bus Transfers in 2001 and 2005

Direct service from origin to destination is important to most travelers. Changing buses or modes en route is a significant deterrent to use of public transportation and typically is not favorably viewed.

A 2001 People Mover rider survey queried passengers about transfers. A second People Mover rider survey in 2005 also asked passengers whether they had to transfer to complete their bus trips. Figure 26 shows the results. According to the 2001 survey, 48% of People Mover riders did not transfer buses to reach their destinations; in the 2005 survey, 38% of riders reported reaching their destinations without transferring to another bus. The percentage of riders making two or more bus transfers to reach destinations was higher in 2005 than in 2001.

Figure 26. Transit Rider Transfers to Reach Destinations, 2001 and 2005



Note: Values show number of transfers, percentage of riders.

AnchorRIDES Paratransit Services

AnchorRIDES is a specialized transportation service in Anchorage for senior citizens and individuals with disabilities. It was created in 1992 by combining two services—the senior transportation service (OATS) and transportation for people with disabilities (Muni-Lift)—into a single system operating as a brokerage that uses multiple funding sources. From its inception, the AnchorRIDES paratransit service has been operated under a contract arrangement with a private-service provider.

AnchorRIDES has grown incrementally during the past 15 years because of general population growth in the MOA, increased numbers of elderly citizens, and requirements of the Americans with Disabilities Act (ADA) of 1990. The transportation programs covered include services for people whose disabilities prevent them from taking a regular bus, seniors, and individuals with Medicaid Waivers. Table 12 presents operating statistics for AnchorRIDES that illustrate trends from 2001 through 2009.

Table 12. Operating Data for AnchorRIDES, 2001–2009

Year	Revenue Hours	Fleet Miles	Passenger Trips	Passenger/ Revenue Hours
2001	58,039	1,070,935	172,972	2.73
2002	66,271	1,168,943	180,663	2.82
2003	68,313	1,241,080	192,884	2.79
2004	70,143	1,252,168	196,021	2.73
2005	68,534	1,279,421	190,875	2.29
2006	63,002	1,131,333	183,055	2.23
2007	86,419	1,172,992	180,451	2.09
2008	84,428	1,135,879	191,606	2.27
2009	83,517	1,131,220	194,875	2.33

Source: MOA Public Transportation Department

In recent years, AnchorRIDES has provided more than 190,000 passenger trips annually. In 2009, about 2.3 passengers were carried per hour of service.

Ride Share Participation

Carpooling and vanpooling are supported by the MOA Share-a-Ride Program in the Public Transportation Department. These activities, which reduce the number of vehicles on Anchorage roadways, are key components of the MOA congestion management efforts. Table 13 summarizes statistics for carpooling and vanpooling activities from 2005 to June 2010.

Table 13. Anchorage Ride Sharing Statistics, 2005–2010

Individuals Sharing Rides	2005	2006	2007	2008	2009	June 2010
Registered applicants	4,602	4,822	4,946	4,774	4,823	4,772
Active carpools	328	278	181	179	179	178
Active carpoolers	659	557	365	361	361	359
Active vanpools	24	41	42	52	52	55
Active vanpoolers	375	569	637	810	917	985

Source: MOA Public Transportation Department

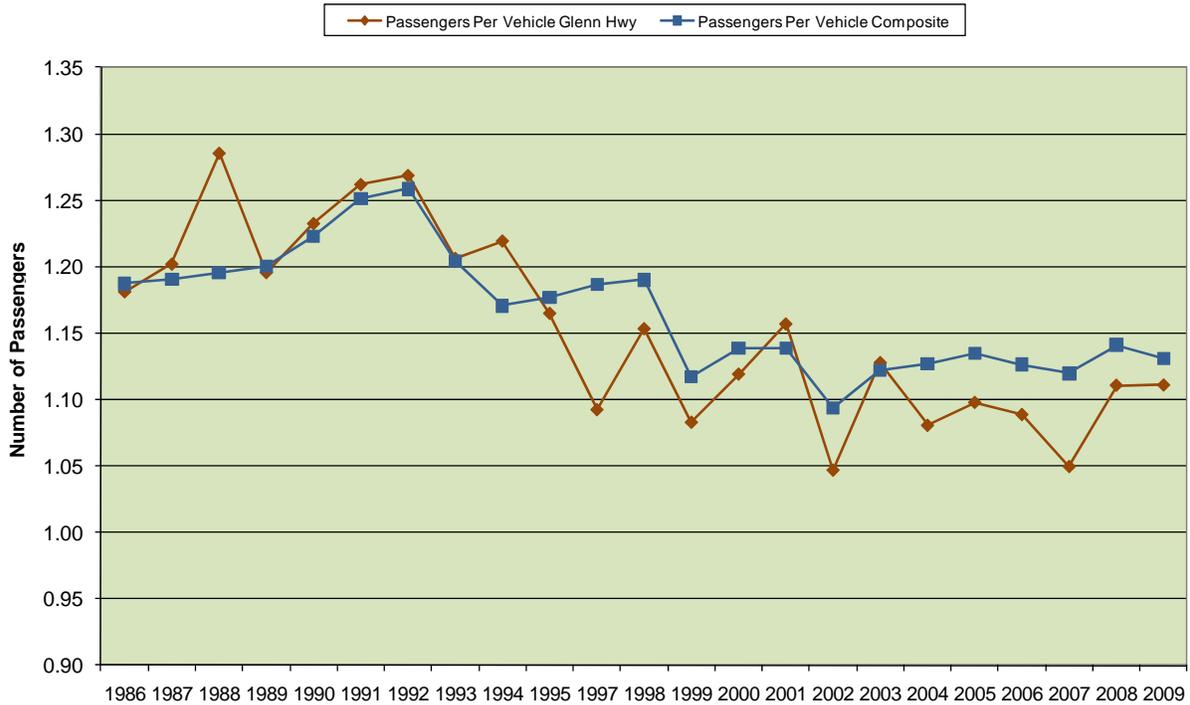
Significant growth in active vanpools and vanpoolers has been achieved since 2005 while the numbers of active carpools and carpoolers program participants have been reduced by nearly half. Most vanpools carry Mat-Su Valley commuters.¹⁹ With almost 1,000 participants in 2010, vanpool ride sharing has a considerable impact on peak-period commute conditions on the Glenn Highway. It is estimated that vanpools reduce the total number of vehicles on the Glenn Highway by about 609 vehicles during each peak period. This number of vehicles represents about 8.1% of the total morning peak-period traffic and about 5.1% of the total afternoon peak-period traffic (at the Fort Richardson overpass). Given its growth rate (162% in 5 years), the vanpool program is expected to have an even greater future impact.

Monitoring Commuter Vehicle Occupancy

The MOA Public Transportation Department has monitored vehicle occupancy at various locations throughout the Anchorage Bowl since 1986. At one time, a total of 26 locations were tracked. The vehicle occupancy monitoring program was substantially scaled back in 2009 when occupancy counts were taken at only six locations during the morning peak period. The Vehicle Occupancy Survey data displayed in Figure 27 show the occupancy rates on the Glenn Highway as well as a composite of the six sites that were consistently monitored from 1986 to 2009.

¹⁹ According to the MOA Public Transportation Department, 52 out of 55 vanpools originate from the Mat-Su Borough.

Figure 27. Average Persons per Vehicle during the Morning Peak Period, 1986–2009



Of particular interest are the automobile occupancy rates along the Glenn Highway during the morning commute. Ride sharing, like vanpooling, has the potential to substantially reduce traffic congestion on the Glenn Highway. The automobile occupancy rates along the Glenn Highway have been dropping, however; the number of passengers per automobile dropped from 1.18 in 1986 to 1.11 in 2009. If the 1986 automobile occupancy rate of 1.18 passengers per automobile existed today, the number of automobiles on the Glenn Highway during the morning commute (7 to 9 a.m.) would be reduced by about 400 vehicles out of 6,300. The decline in ride sharing appears to have bottomed out around 2004. Higher fuel costs may partially explain the 2005 increase in passengers per automobile.²⁰

²⁰ After declining the first part of the decade, national commute-to-work ride sharing participation began rising in 2005 as gas prices ramped up. Carpoolers and vanpoolers made up 11.5% of all workers nationally in 2006.

Pedestrian and Bicycle Elements

Currently, there are about 474 miles of sidewalks in the Anchorage Bowl (excluding separated multi-use trails). This sidewalk coverage represents roughly 13% of the total miles of roads in the Anchorage Bowl. The roughly 47 miles of sidewalks in Chugiak-Eagle River represent about 7% coverage of the total roadway infrastructure there. (One hundred percent would mean that all existing roadways have sidewalks on both sides of the road.)

In general, complete sidewalk networks are more likely to be found in older Anchorage Bowl neighborhoods such as Downtown, Fairview, Mountain View, Airport Heights, College Village, and South Addition. In most areas outside these neighborhoods, sidewalks are discontinuous or often missing entirely. Anchorage sidewalks are shown in Figure 28, and Chugiak-Eagle River sidewalks are shown in Figure 29.

Pedestrian Environment

The *Anchorage Pedestrian Plan* was adopted in 2007. The overall goal of the plan is to “double the number of pedestrian trips made by Anchorage residents while simultaneously reducing the number of injuries from pedestrian-vehicle crashes.”

Tracking the number of pedestrian trips made by Anchorage residents presents a challenge. Surveys provide the most accurate means of collecting this type of information. Results of the 2002 Anchorage Household Travel Survey indicate that Anchorage residents made 56,720 walking trips on a typical weekday in spring 2002 (about 5.7% of all trips). No new household travel survey has been conducted since that time; therefore, it is not known how pedestrian activity has changed in the last 8 years. An updated historical comparison of walking trips will be possible when a new household travel survey is completed.

Winter sidewalk maintenance is a major issue affecting use of pedestrian infrastructure. It doesn't matter whether sidewalks are available in the winter if the snow is not regularly plowed. Figure 30 shows the extent of sidewalk snow removal currently included in the MOA sidewalk and trail snow removal program. In 2010, about 175 miles of sidewalks, or about one-third of the total sidewalks in Anchorage, were included in the snow removal program.²¹

²¹ Source: MOA Street Maintenance.

Figure 28. Existing Sidewalks in the Anchorage Bowl, 2010

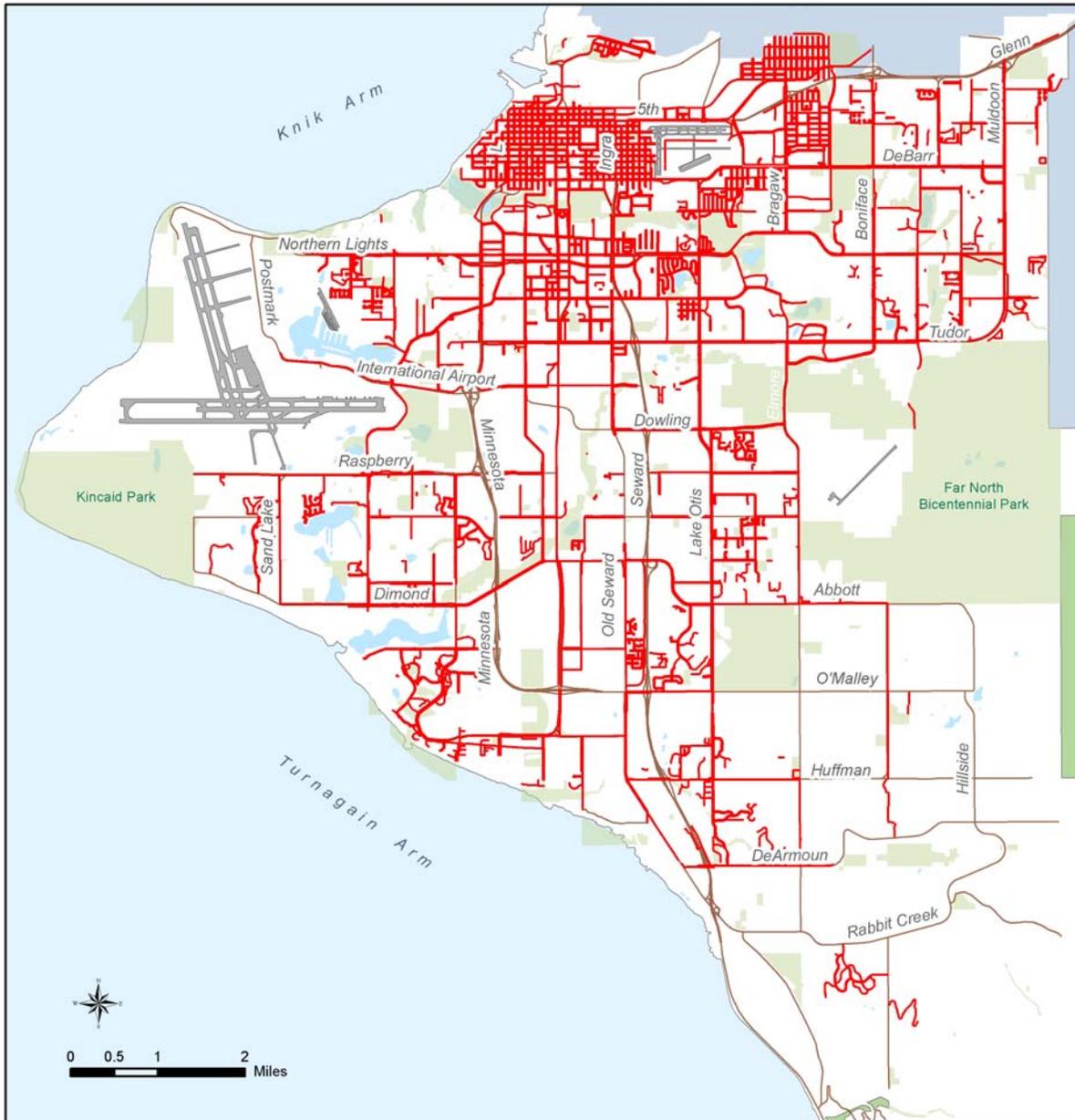
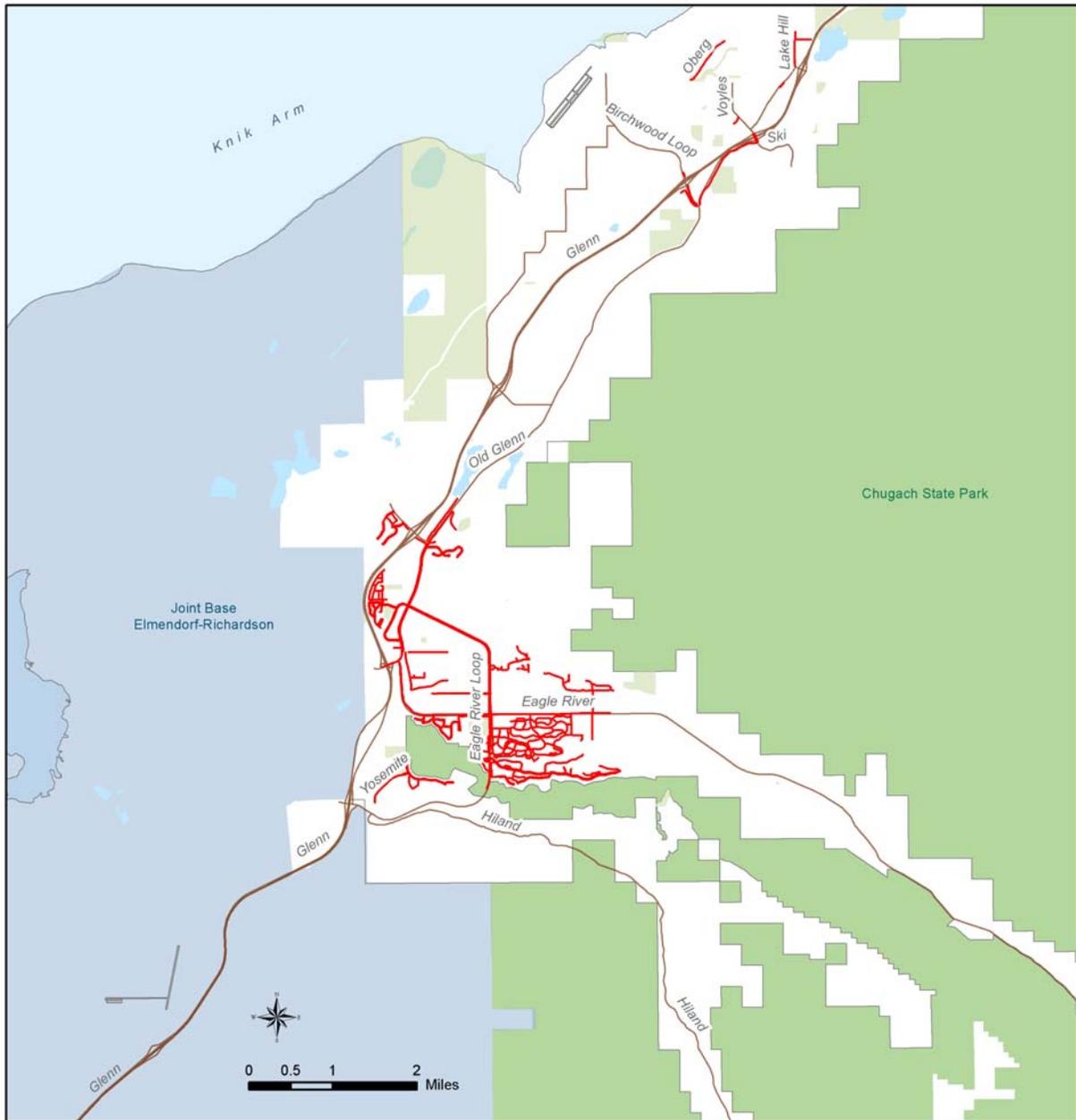
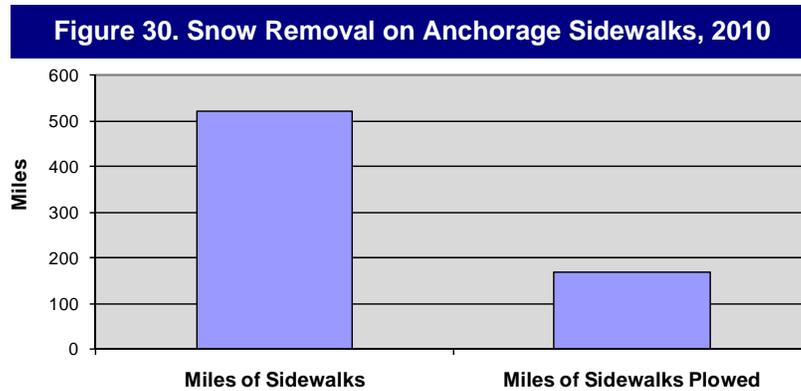


Figure 29. Existing Sidewalks in Chugiak-Eagle River, 2010





Bicycle Environment

The *Anchorage Bicycle Plan* was adopted in March 2010. The overall goal of the plan is to “double the amount of utility bicycling while reducing the number of bicycle crashes by one-third.”

Counting the number of bicycle riders entails the same challenges as does counting pedestrians. The 2002 Anchorage Household Travel Survey found that Anchorage residents made about 11,200 bicycle trips on a typical weekday in spring 2002 (about 1.2% of all trips).

Statistical data about bicycle riders have been gathered annually on Bike to Work Day, held every May since 2007. Volunteers at 12 locations counted the numbers of bicyclists between the hours of 6:30 and 9:00 a.m. As reported in Table 14, the total of bicycle riders counted at the 12 locations was more than 2,500 in 2010, an increase of 81% since 2007. The numbers of bicycle riders are undoubtedly higher than for an average day because of the promotion for Bike to Work Day; however, the data do show clear trends of increasing bicycle riders in the Anchorage Bowl.

Figures 31 and 32 show the existing bicycle facilities for the Anchorage Bowl and Chugiak-Eagle River. A total of 243 miles of separated multi-use trails and bicycle lanes are currently available in the Anchorage Bowl and Chugiak-Eagle River area. On-street bicycle lanes are designated on 13.2 miles of Anchorage streets. There are no on-street bicycle lanes in Chugiak-Eagle River.

Table 14. Bike to Work Day Counts, 2007–2010

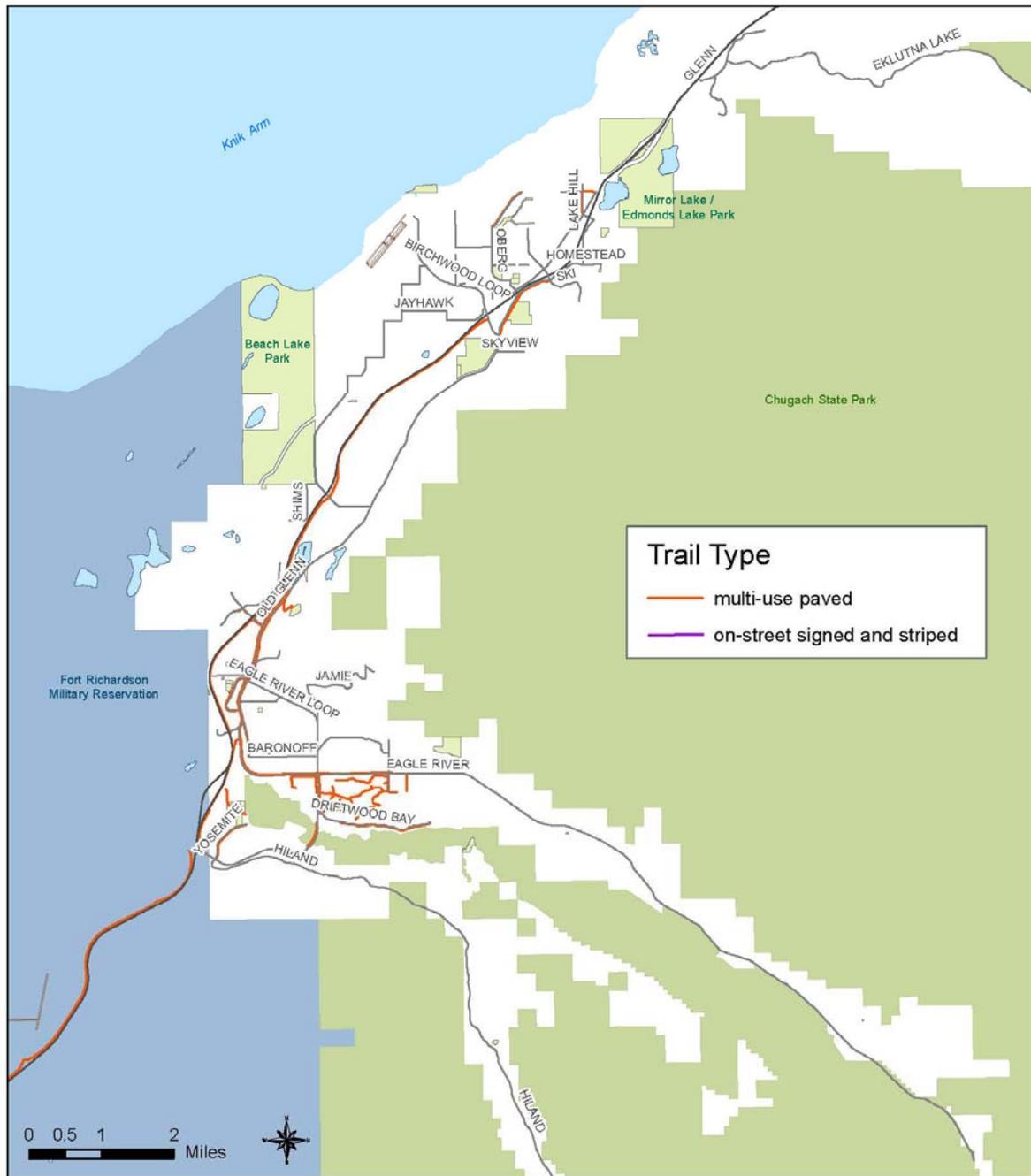
Location	2007	2008	2009	2010	Change, 2007 to 2010
Seward Highway and Chester Trail – trail and road bicycle traffic	238	316	301	436	83%
A Street and Chester Trail – trail and road bicycle traffic	225	308	274	258	15%
Chester Trail – Northern Lights Boulevard overpass at Goose Lake	159	242	231	336	111%
Tudor and C Street – north-south and east-west	170	171	209	303	78%
Tudor Road and Elmore Road – north-south and east-west trail and road bicycle traffic	94	160	179	341	263%
Coastal/Chester Trail link, west end of Westchester Lagoon	124	188	170	259	109%
15th Avenue and Arctic Boulevard/E Street	115	122	93	138	2%
Lake Otis Parkway and 36th Avenue	91	103	99	128	41%
10th Avenue and N Street	63	101	72	109	73%
Campbell Trail at Bittner House – south of Dowling Road	67	71	81	120	80%
Lake Otis Parkway and Abbott Road	55	71	51	87	58%
Benson Boulevard and Minnesota Drive	21	31	37	52	148%
Totals	1,422	1,884	1,797	2,567	81%

Source: MOA, Project Management and Engineering

Figure 31. Anchorage Bowl Bicycle Facilities, 2010



Figure 32. Chugiak-Eagle River Bicycle Facilities, 2010



Pedestrian and Bicyclist Safety

During the 10-year period from 2000 through 2009, 1,074 pedestrian-vehicle crashes and 1,318 bicycle-vehicle collisions occurred. Table 15 shows the annual crash data, and Figures 33 and 34 illustrate the crashes involving pedestrians and bicyclists, respectively, by severity.

Table 15. Bicycle and Pedestrian Crash Statistics, 2000–2009

Year	Bicycle-Vehicle		Pedestrian-Vehicle	
	Accidents	Fatalities	Accidents	Fatalities
2000	107	1	88	6
2001	110	0	109	5
2002	143	0	108	11
2003	168	1	122	6
2004	134	1	117	9
2005	127	0	97	4
2006	100	0	90	4
2007	158	0	110	9
2008	128	1	107	1
2009	143	2	126	6

Source: MOA Traffic Engineering Department

The numbers of pedestrian-vehicle crashes have remained within a relatively narrow range during the past 10 years. The trend suggests that considerable effort will be necessary to achieve the 2007 Pedestrian Plan goal to reduce pedestrian injuries from vehicular crashes.

Bicycle activity tends to spike in warmer weather during the summer months. Collisions also are dramatically higher in the summer; 60% of all bicycle-vehicle collisions occur in June, July, and August. The numbers of bicycle-vehicle crashes have fluctuated a bit more than those for pedestrian crashes between 2000 and 2009.

Although no distinct downward or upward trend is apparent, the absence of an upward trend may be encouraging, given the increasing number of bicyclists suggested by the annual Bike to Work counts (see Table 14). Nevertheless, considerable effort will also be necessary to meet the 2010 Bicycle Plan goal of reducing bicycle-vehicular crashes by one-third.

Figure 33. Pedestrian-Vehicle Crashes, 2000–2009

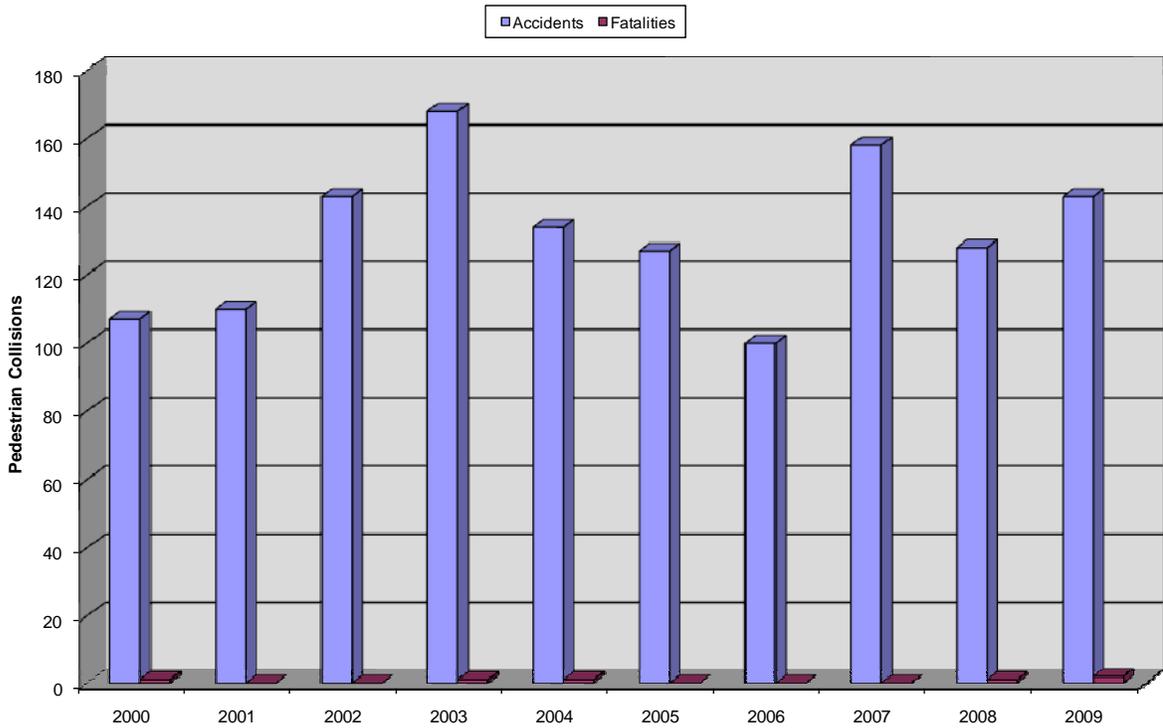
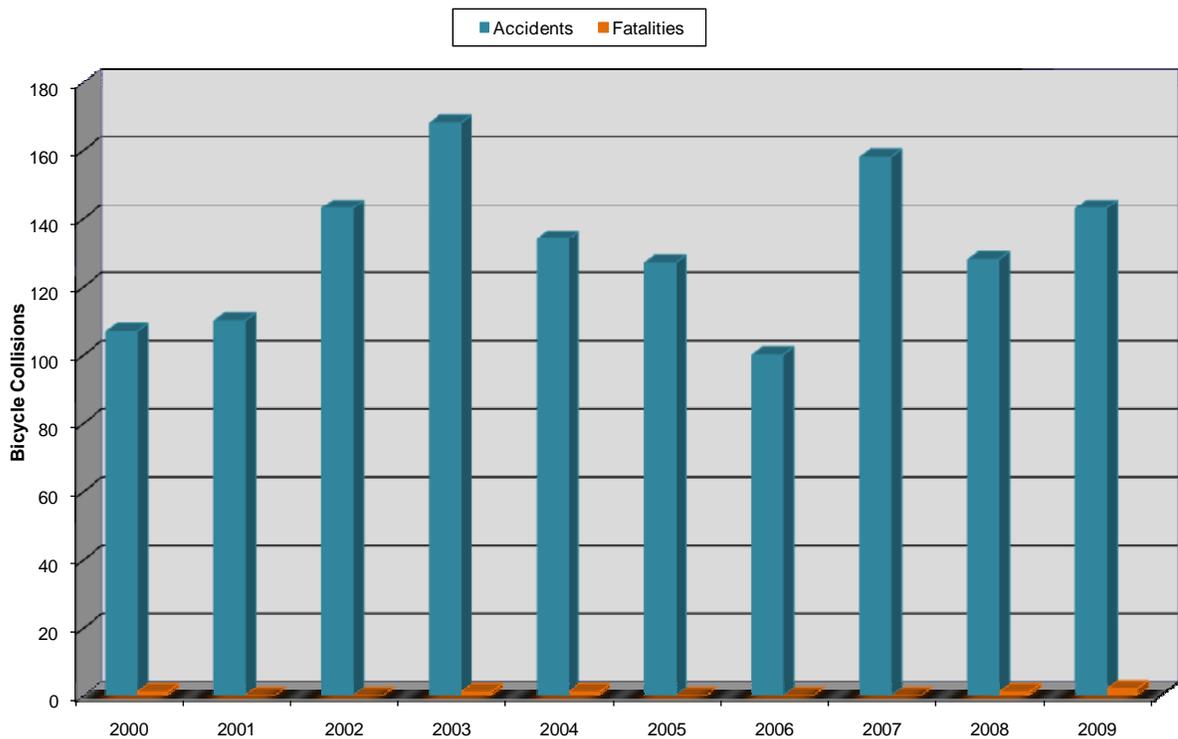


Figure 34. Bicycle-Vehicle Crashes, 2000–2009



Intermodal Goods Movement and Regional Connections

Ships, planes, trains, and trucks play vital roles in carrying imported consumable and manufactured goods to the State of Alaska, as well as exports and freight required by major military installations. In addition, air transport moves residents and visitors into and out of the state and supports the tourism sector that contributes significantly to the livelihood of many Alaskans. Anchorage serves as the gateway for the majority of cargo and persons entering Alaska.

International Airport

Air passengers and cargo tonnage continue to rise annually at TSAIA. Passenger numbers were relatively flat during the early part of the decade (possibly because of the events of September 11, 2001) but have shown a steady increase of about 2% annually from 2003 through 2009. This growth in passenger traffic through the airport has been twice as fast as the MOA population growth rate and somewhat faster than the 1.7% growth rate of the combined MOA and Mat-Su Borough populations during the same time period.

Between 2000 and 2009, air cargo passing through the airport (in-transit freight) increased 4% and air cargo loaded in Anchorage (enplaned freight) rose 13% (see Figure 35). These figures were dampened substantially by the sudden drop in air cargo shipments in 2009 because of the worldwide recession.

Figure 35. TSAIA Passenger and Cargo Volumes, 2000–2009

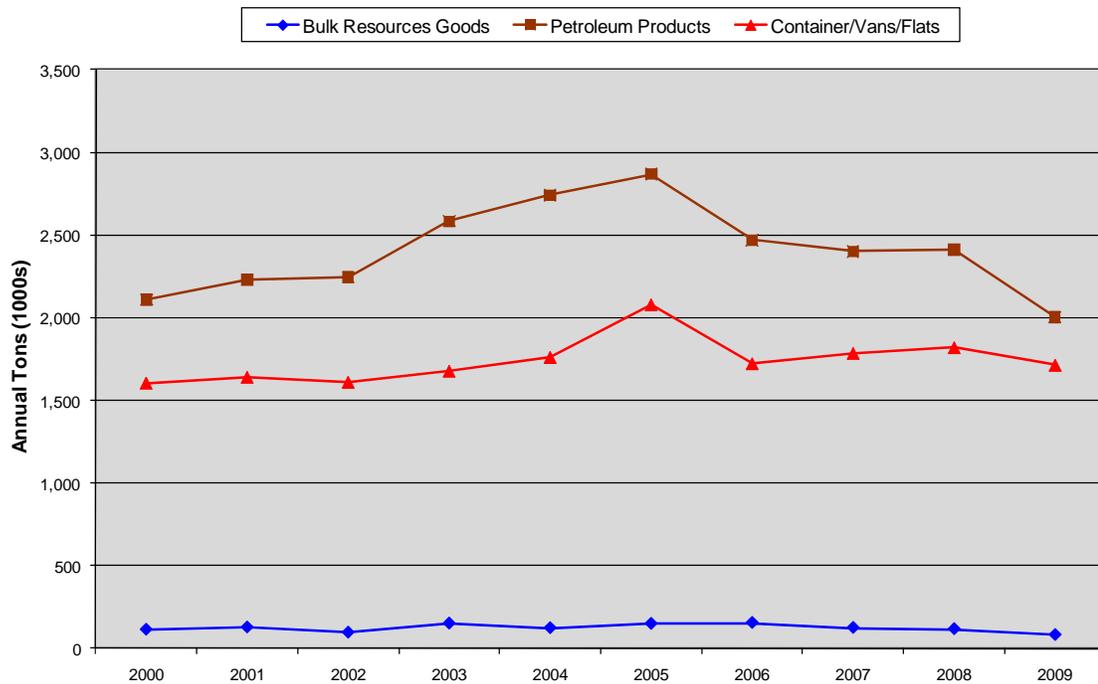


Port of Anchorage

The Port of Anchorage is the major gateway for goods moving into and out of Alaska. The Port serves nearly all of Alaska’s populated area from Homer to the North Slope by means of rail, road, and air cargo connections. It handles more than 90% of all consumer goods sold in the Railbelt (the corridor extending from Fairbanks in Interior Alaska through Anchorage in Southcentral Alaska and to Seward in the Kenai Peninsula). The Port of Anchorage also is a key logistic resource for major military installations.

Figure 36 shows Port cargo trends from 2000 to 2009. Approximately 1.7 million containers moved through the Port in 2009, an increase of 7% since 2000. If the sharp drop in 2009, which was likely due to the global economic recession, is excluded, the overall increase in container traffic through the Port was about 13%. That change almost exactly reflects growth in the MOA and Mat-Su Borough population during 2000 to 2008.

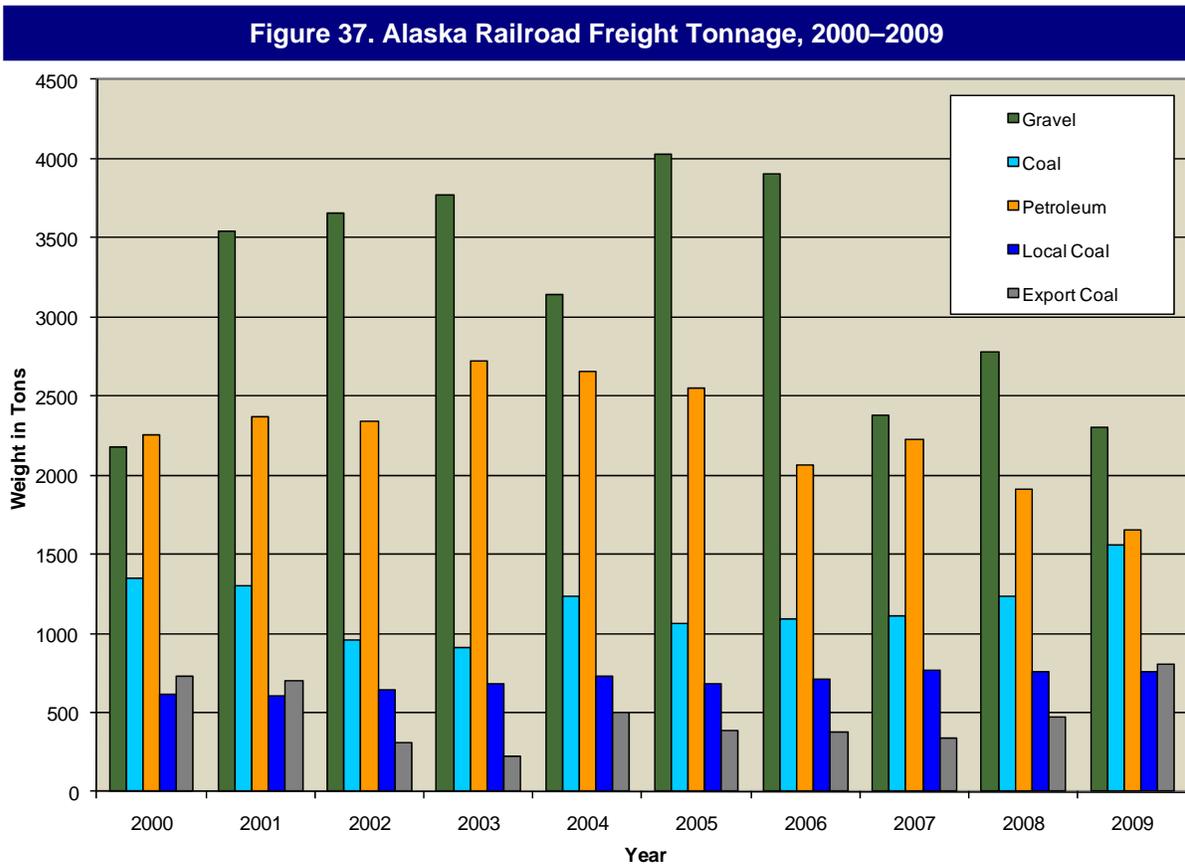
Figure 36. Port of Anchorage Tonnage, 2000–2009



Bulk resource goods and petroleum products moving into and out of the Port of Anchorage remained relatively stable from 2000 through 2009.

Railroad Transport

The ARRC freight shipments are an important component of Anchorage and other Alaskan transport movements. Bulk resource and petroleum rail shipments would otherwise require many thousands of annual truck loads on the highway system. Combined gravel and coal rail tonnage has edged upward modestly since 2000, and petroleum volume has trended somewhat lower. In 2009 the railroad transported 5.5 million tons of freight throughout the state, of which 3.9 million tons, or 70%, were gravel and coal (see Figure 37).



In addition to its heavy goods freight services, the railroad carried more than 470,784 passengers in 2009 and 405,135 in 2010, mostly Alaska visitors and cruise ship passengers. The ARRC is continuing its program of infrastructure development for rail passengers. As discussed in the Introduction chapter, development of an intermodal center at the Dimond Center and an upgrade at the Ship Creek headquarters complex of ARRC are in the planning stages.

Motor Freight and Regional Highway Links

Nearly all goods designated for Anchorage metropolitan area destinations arrive by truck. A large share of statewide freight movements from the Port of Anchorage and TSAIA are moved by truck as well.

Table 16 shows the typical daily volume of light and heavy trucks for a sample of roadway locations around the Anchorage metropolitan area in 2009. The truck volumes are categorized into single-unit trucks (such as box vans) and tractor/trailer combination units. The truck traffic as a percentage of total vehicle traffic is also tallied for each location.

Table 16. Daily Truck Volumes at Selected Locations, 2009

Roadway Location	Single-Unit Trucks	Truck/Tractor Units	Trucks as a Percentage of All Vehicles (%)
Ocean Dock Road, Port of Anchorage	268	454	38.2
Whitney Road, east of North C Street	239	115	31.0
Glenn Highway, east of Airport Heights Road	3,037	499	8.3
Arctic Boulevard, south of 76th Avenue	189	23	5.0
O'Malley Road, east of Seward Highway	388	11	5.4
Debarr Road, east of Wintergreen Street	455	18	4.1
Eagle River Road, east of Caribou Street	120	6	2.7
Northern Lights Boulevard, east of LaTouche Street	802	20	3.9
Seward Highway, south of 76th Avenue	3,015	291	7.2
Tudor Road, west of Patterson Street	1,481	235	7.3
International Airport Road, east of Fairbanks Street	536	19	7.6
Dimond Boulevard, west of Arctic Boulevard	609	20	4.2
Minnesota Drive, north of Dimond Boulevard	1,539	135	4.9
Seward Highway at Potters Marsh	825	184	10.8

According to the *Annual Traffic Volume Report* prepared by the Alaska Department of Transportation and Public Facilities in 2009, all single-unit and combination trucks are considered commercial vehicles. A single-unit truck has two or three axles. Examples are delivery trucks and dump trucks; pickups are not included. Combination trucks have four or more axles. Examples are concrete trucks, fuel trucks, and tractors hauling one or more trailers.

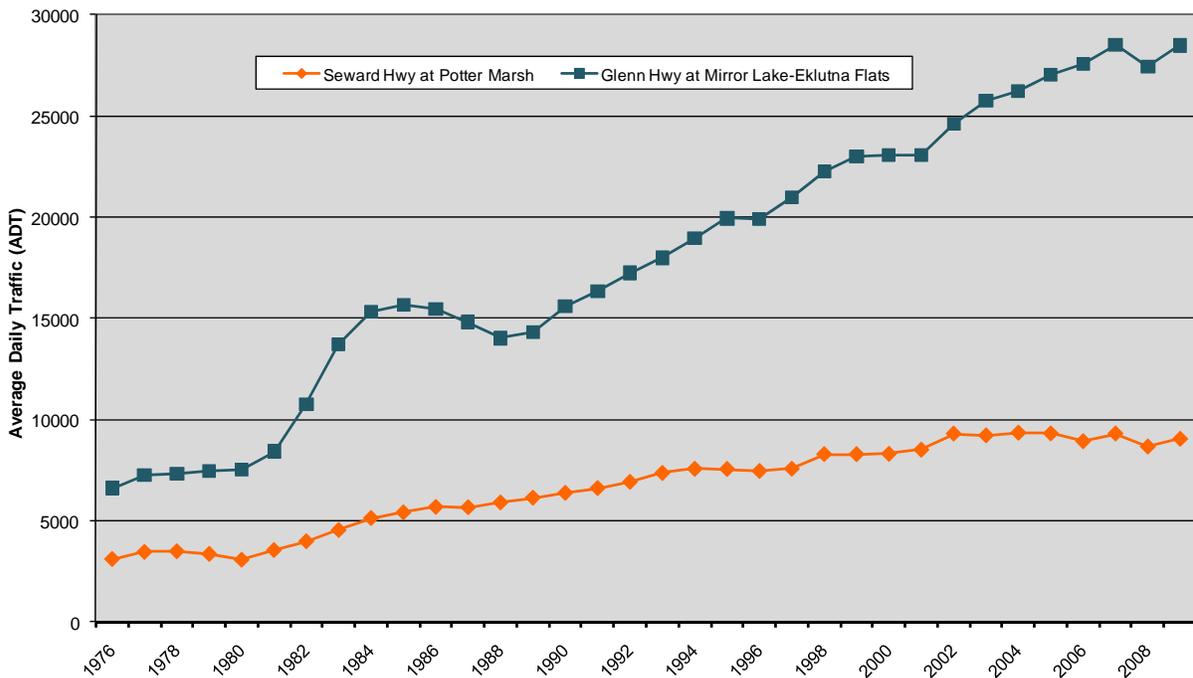
Source: Alaska Department of Transportation and Public Facilities

Daily truck volumes in 2009 exceeded 3,500 vehicles on the Glenn Highway and 3,000 vehicles near 76th Avenue on the Seward Highway. In most cases, single-unit trucks represent more than 80% of total truck volume. On Ocean Dock Road to and from the Port of Anchorage, the tractor-trailer combinations are the most common configuration.

Regional Highway Connections

The Seward Highway and the Glenn Highway are the only two road links that connect the Anchorage metropolitan area to the remainder of the state. Figure 38 shows traffic growth trends for both roadways at the periphery of the urban region. Traffic volume has grown significantly on the Glenn Highway as population in the Mat-Su Valley has mushroomed during the last two decade. One of the few exceptions to this trend of increasing traffic volumes occurred in 2008 as the economy and housing construction were slowing.

Figure 38. Daily Traffic Volume across AMATS Boundaries, 1976–2009



Status of the System, 2010, Credits

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