CHUGIAK-EAGLE RIVER

LONG-RANGE TRANSPORTATION PLAN

2003

Traffic Department
Municipality of Anchorage

Anchorage
Metropolitan
Area
Transportation
Solutions

2003
Chugiak-Eagle River
Long-Range Transportation Plan

Prepared as a joint effort by:

Municipality of Anchorage
Traffic Department
Transportation Planning Division
in cooperation with the
State of Alaska
Department of Transportation and Public Facilities

As approved by the AMATS Policy Committee on

October 9, 2003

As per the conformity determination approved by FHWA and FTA in letter dated

December 19, 2003

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ANCHORAGE METROPOLITAN AREA TRANSPORTATION SOLUTIONS

2003 Chugiak-Eagle River Long-Range Transportation Plan

Approved by the
AMATS Policy Committee

Date: October 9, 2003

Michael J. Scott, Regional Director (Chair)
Alaska Department of Transportation and Public Facilities

Mark Begich, Mayor
Municipality of Anchorage

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Alaska Department of Environmental Conservation

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CLERK'S OFFICE
APPROVED
Date: 9-23-03

Submitted by: Chairman of the Assembly at the Request of the Mayor
Prepared by: Traffic Department
For reading: September 9, 2003

ANCHORAGE, ALASKA
AO 2003-128

AN ORDINANCE ADOPTING AND AMENDING THE CHUGIAK-EAGLE RIVER TRANSPORTATION PLAN, AND AMENDING CHAPTER 21.05 OF THE ANCHORAGE MUNICIPAL CODE.

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. The Chugiak-Eagle River Long-Range Transportation Plan, 2002 Update, dated January 31, 2003, is hereby adopted as an element of the Anchorage Comprehensive Plan.

Section 2. Anchorage Municipal Code Section 21.05.030 is hereby amended to read as follows:

21.05.030 Elements.

The Comprehensive Plan consists of the following elements, which are incorporated in this chapter by reference. While they may be valid planning tools, plans or other elements that are not listed below or incorporated into the comprehensive plan elsewhere in this Code are not official elements of the comprehensive plan. If elements of the comprehensive plan conflict, the element most recently adopted shall govern.

*** *** ***

C. 2. Chugiak-Eagle River Long-Range Transportation Plan, 2002 Update, [MAY 1996] January, 2003 (AO No. 96-104, § 2, 8-13-96, AO No. 2003-128.)

Section 3. Map 5 on page 81 of the Chugiak-Eagle River Long-Range Transportation Plan herein replaces and supersedes Figure 3 in the 1996 Official Streets and Highways Plan.

Section 4. This ordinance is effective immediately upon passage and approval.

PASSED AND APPROVED by the Anchorage Assembly on this 23rd day of September 2003.

Chairman

ATTEST:

Municipal Clerk

AM 708-2003/AIM 82-2003

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PREFACE

The Chugiak-Eagle River Long-Range Transportation Plan is a product of Anchorage Metropolitan Area Transportation Solutions (AMATS). Completion of the Plan was accomplished through the cooperative effort of the Municipality of Anchorage (MOA) and the Alaska Department of Transportation and Public Facilities (ADOT&PF) staff.

The 1996 Chugiak-Eagle River Transportation Plan represented the first transportation planning effort to focus on the Chugiak-Eagle River area as a unique area within MOA. The 1996 Plan was based on the 1993 Chugiak-Eagle River Comprehensive Plan, and included two key elements: the Chugiak-Eagle River Long-Range Transportation Plan (LRTP), and recommended changes to the Official Streets and Highways Plan (OS&HP). The Chugiak-Eagle River LRTP, one of several elements of the AMATS Long-Range Transportation Plan, is used to guide the development and implementation of needed transportation system improvements for this area using *federal funds*, and addresses a longer-term planning horizon twenty years into the future. It is to be reviewed triennially. The OS&HP is based on the LRTP, and is used to designate functional classifications of streets and highways.

In preparing the 1996 Chugiak-Eagle River Transportation Plan, extensive support was received from the Citizen Advisory Committee, created to guide development of the Plan. The Citizen Advisory Committee included members representing most of the major stakeholders concerned with future transportation system improvements. Following is a list of committee members and their affiliations:

Ron Goughnour	Eagle River Valley Community Council
Ted Kinney	Chugiak Community Council
Bobbi Wells	Birchwood Community Council
Richard Birkinshaw	Planning & Zoning Commission
Tony DeLucia	Planning & Zoning Commission
Fate Putman	Planning & Zoning Commission
Lewis Reed	CBERRRSA Bd.
Don Pressley	CBERRRSA Bd.
Judith Fetherolf	Eagle River Community Council
Dave Young	Eagle River Parks & Recreation Bd.
Chris Ingmanson	South Fork Community Council
Mike Curry	Eklutna, Inc.

The 2003 Update to the Chugiak-Eagle River LRTP reviews the land use assumptions and population projections that were the basis of the 1996 Plan to see if they are still valid. It also

makes some changes to the recommendations for needed roadway improvements based on more recent traffic projections using the Transportation Planning Computer Model, and recommends some changes to the OS&HP. This document represents the first update to the 1996 Plan to reflect changes in the community's transportation needs. It is not a major revision to the 1996 Plan. A major revision to the 1996 Plan is not anticipated until the Chugiak-Eagle River Comprehensive Plan is updated. The Chugiak-Eagle River Comprehensive Plan is due for re-evaluation in 2003.

The objective of the Plan is to create a balanced transportation system that meets the future travel demands of the community through the support of multiple modes while enhancing area safety, meeting environmental standards, and reducing impacts on residential neighborhoods. This Plan recognizes the need for road, transit, trail/pedestrian, and freight improvements. The Plan is intended to be general in nature.

In preparing this 2003 Update, much valuable support was received from the Chugiak-Birchwood-Eagle River Rural Road Service Area (CBERRSA) Board, as well as from area Community Council Presidents and their representatives, the Planning and Zoning Commission, Eagle River Parks and Recreation, Chugiak Volunteer Fire Department, South Fork Volunteer Fire Department, Anchorage Fire and Police Departments, and Eklutna, Inc.

The AMATS Mission: To develop and implement a multi-modal transportation system.

CHAPTER 1: HISTORY AND BACKGROUND

I. INTRODUCTION

A long-range transportation plan is one of the major components of federally funded urban transportation planning programs, stipulated in the Code of Federal Regulations. The long-range transportation plan must complement the area's land use plans and other public infrastructure improvement plans, such as those for water and electrical transmission facilities.

Federal law requires that, in order to be eligible to receive federal Highway Trust Fund Dollars (collected from federal taxes on gasoline sales) for local surface transportation system improvements, urbanized areas must have a metropolitan planning organization [MPO] to carry out a continuing, comprehensive, and cooperative transportation planning process. The U S Bureau of Census defined "urbanized areas" as locales that sustain populations of 50,000 or more.

The Governor of Alaska designated the Municipality of Anchorage an MPO on April 8, 1976. The Municipality's recognized urban transportation planning program is '**AMATS**' (**Anchorage Metropolitan Area Transportation Solutions**). It is a cooperative effort between the Municipality of Anchorage, Alaska Department of Transportation and Public Facilities, and Alaska Department of Environmental Conservation. AMATS was created so that our local area could receive federal highway funds and use those funds to improve the primary transportation network.

Additional requirements relating to transportation planning were imposed with the approval of the **1977 Clean Air Act** and the **1990 Clean Air Act Amendments**. Federal law required areas found to be in non-attainment with the "national ambient air quality standards" (NAAQS) to establish an air quality planning process closely coordinated with the existing transportation planning process.

In 1978 the U. S. Environmental Protection Agency [EPA] Administrator designated Anchorage as a moderate non-attainment area for carbon monoxide. Shortly thereafter, the Governor of Alaska designated the Municipality as the Air Quality Planning Agency for the Anchorage Non-attainment Area.

The EPA has also established standards for dust particles smaller than 10 microns (PM-10). In 1985 the Municipality of Anchorage began a PM-10 monitoring program. Levels exceeding the EPA standards were detected in Eagle River. As a result, the EPA required the Municipality to develop a plan to control the level of dust in the air in Eagle River. The Eagle River PM 10 Control Plan was adopted by the Municipal Assembly on February 6, 1990, and amended on September 24, 1991.

The 1991 **Intermodal Surface Transportation Efficiency Act** [ISTEA] provided funds for highways, highway safety, and mass transit through FFY 1997. The purpose of ISTEA was "to develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the Nation to compete in the global

economy, and will move people and goods in an energy efficient manner." Under provisions of that Act, the U.S. Secretary of Transportation designated the Anchorage Metropolitan Area as a Transportation Management Area [TMA]. TMAs are subject to special requirements regarding congestion management systems, project selection, and certification.

ISTEA was reauthorized by the 1998 **Transportation Equity Act for the 21st Century** (TEA-21), which authorized highway, highway safety, transit, and other surface transportation programs for the 6-year period 1998-2003.

TEA-21 built on the initiatives established in ISTEA. **TEA-21** combined the continuation and improvement of then current programs with new initiatives to meet the challenges of improving safety as traffic continues to increase, protecting and enhancing communities and the natural environment as we provide transportation, and advancing America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation. Special emphasis is placed on deployment of Intelligent Transportation Systems to help improve operations and management.

TEA-21 requires the transportation planning process, for a metropolitan area such as Anchorage, to explicitly provide for consideration of projects and strategies that will:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety and security of the transportation system for motorized and non-motorized users;
3. Increase the accessibility and mobility options available to people and for freight;
4. Protect and enhance the environment, promote energy conservation, and improve quality of life;
5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6. Promote efficient system management and operation; and
7. Emphasize the preservation of the existing transportation system.

II. ANCHORAGE METROPOLITAN AREA TRANSPORTATION SOLUTIONS

The long-range transportation planning effort in the Municipality of Anchorage is conducted under the auspices of AMATS. The AMATS planning process consists of two principal parts, the Long-Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP), and addresses improvements to roadways, transit and trails.

Long-Range Transportation Plans are the key planning documents used by AMATS to plan the development and implementation of transportation system improvements 20 years into the future. The Chugiak-Eagle River Transportation Plan, adopted in 1996, serves this purpose for the Chugiak-Eagle River area. The Transportation Improvement Program (TIP) is the short-range implementation plan used by AMATS to program federal funding for transportation improvements. The TIP programs the recommendations contained in the 20-year Transportation Plan into a short-term (3 year) timeframe.

FIGURE 1: TRANSPORTATION PLANNING & IMPLEMENTATION PROCESS

PHASES	MUNICIPAL DOCUMENTS	AMATS DOCUMENTS
Planning Phase - Provides overall direction	**COMPREHENSIVE PLAN** The Long-Range Transportation Plan uses the land use assumptions provided in the Comprehensive Plan. Vision Statement Goals and Objectives Strategies	**LONG-RANGE TRANSPORTATION PLAN** One of several implementation tools of the Comprehensive Plan. Includes both the Chugiak/Eagle River and Anchorage Bowl Long-Range Transportation Plans, the Areawide Trails Plan, and the Public Transportation (Transit) Development Plan.
		MAJOR INVESTMENT STUDIES (MISs) MISs explore solutions to transportation problems identified in the LRTP in more detail. LRTP identifies improvements to Glenn and Seward Hwys as potential MISs.
Programming Phase - Directs resources	**MUNICIPAL CAPITAL IMPROVEMENT PROGRAM (CIP)** CIP programs local, state and federal capital funds for roadways, public buildings, police, fire equipment, Parks, and public transportation. Identifies federally-funded transportation projects contained in TIP.	**TRANSPORTATION IMPROVEMENT PROGRAM (TIP)** A three year AMATS document, based on community criteria and review, which is used to program Federal Highway Funding.
		STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP) The 3 year statewide ISTEA programming document. It includes the AMATS projects, which are contained in the TIP.
Implementation Phase - Results in design and construction	**OFFICIAL STREETS AND HIGHWAYS PLAN (OS&HP)** Based on the LRTP, it designates functional classifications of highways. Often used in scoping roadway improvement projects.	**PRELIMINARY DESIGN** Finalizes the alternatives and alignment. A final environmental document is produced.
		FINAL DESIGN Construction plans are completed.

This cooperative planning process also fulfills a federal requirement that enables the Anchorage and Chugiak-Eagle River areas to receive approximately $48 million each year (based on the average net obligation from 1981-2000) from the US Department of Transportation for air quality improvement, safety, roadway, transit, and transportation enhancement projects.

III. THE STUDY AREA

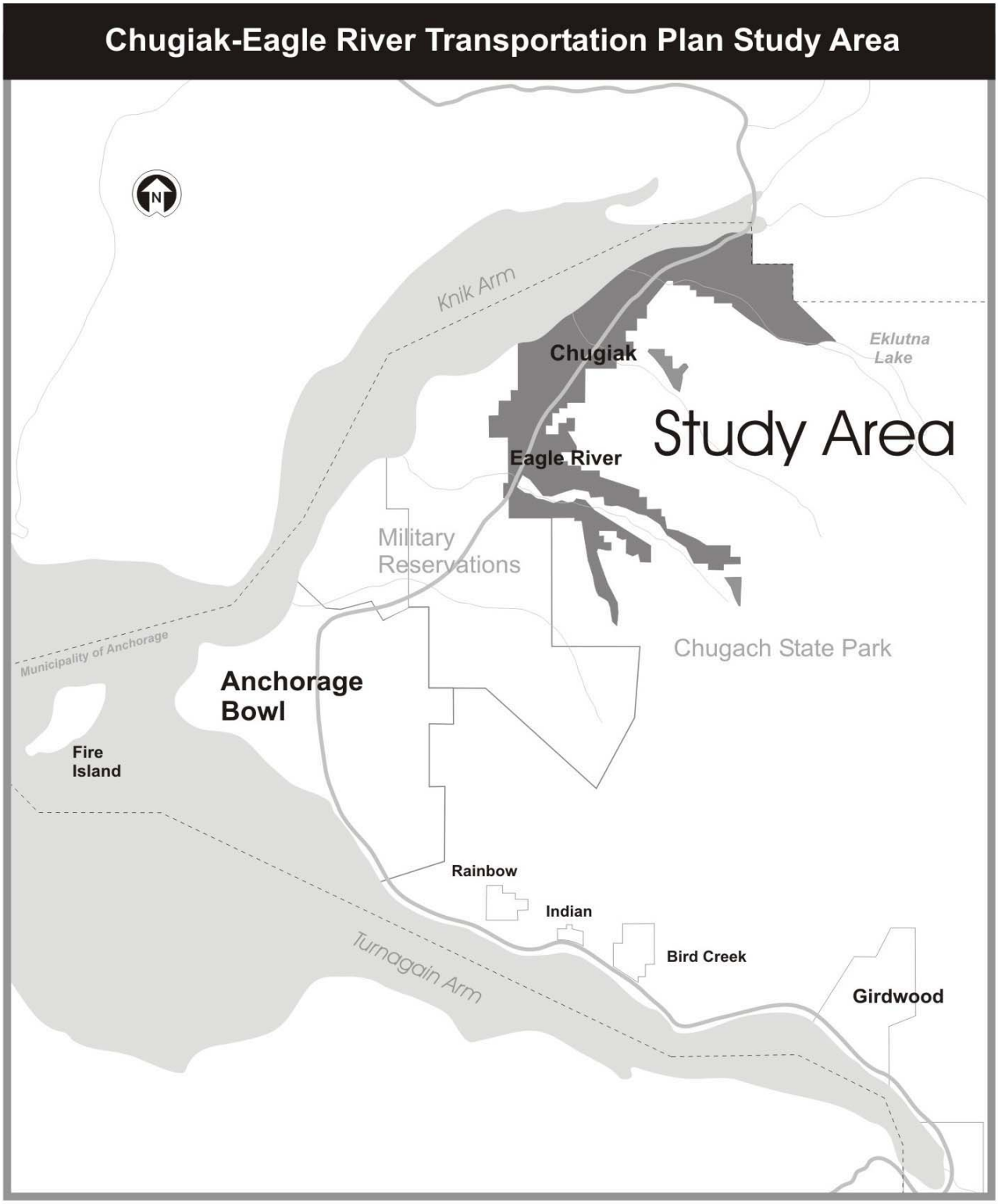
The study area of the Chugiak-Eagle River Transportation Plan (see Map 1) includes all of the territory within the Municipality of Anchorage from the northern boundary of Fort Richardson northward to the Municipal limits near the Knik River, excluding Chugach State Park.

The study area has experienced major population growth during the past twenty years. During that time, Chugiak-Eagle River evolved into a major suburban community of Anchorage. The 2000 Census population of 29,917 for Chugiak-Eagle River was 11.5% of the total Municipality of Anchorage population. With a large percentage of developable land located within Chugiak-Eagle River, the area is expected to capture a large share of the future population growth for the Municipality of Anchorage.

Despite this rapid growth, the Chugiak-Eagle River area remains essentially a bedroom community, with most residents working outside of the local area, either at Fort Richardson or the Anchorage Bowl. There continues to be a small local-serving commercial and industrial economic base that is mainly centered in downtown Eagle River along the Old Glenn Highway and Business Boulevard.

IV. PLANNING HORIZON

TEA-21 planning regulations, specified in Title 23 of the Code of Federal Regulations (23 CFR450.322 (a)), require a transportation plan to address at least a 20-year horizon. The planning horizon for the 1996 Chugiak-Eagle River encompassed the years 1995 to 2015. This 2003 LRTP Update further extends the timeframe to the Year 2023, to comply with the above referenced TEA-21 regulations.


Chugiak-Eagle River Transportation Plan Study Area
N
Knik Arm
Chugiak
Eklutna Lake
Study Area
Eagle River
Military Reservations
Chugach State Park
Municipality of Anchorage
Anchorage Bowl
Fire Island
Rainbow
Indian
Bird Creek
Girdwood
Turnagain Arm

MAP 1

CHAPTER 2: GOALS, POLICIES, AND OBJECTIVES

The formulation of goals, objectives and policies is a fundamental step in the transportation planning process. Goals, objectives, and policies describe the desired end result of a transportation plan as well as directions on how to get there. More specifically, goals describe in broad, general terms a desired future condition, which is consistent with community ideals; objectives are specific statements of particular ends, expressed in measurable terms, that respond to the goals; and policies are statements that describe courses of action designed to achieve the goals and objectives.

The development of the goals, policies, and objectives contained in this plan was based on extensive public comment. A great deal of useful information concerning the transportation problems and issues facing Chugiak-Eagle River residents was obtained through a series of eight public meetings held in the fall of 1994. The Citizen Advisory Committee formed to help develop the plan also spent several meetings discussing goals, policies, and objectives. This direct public involvement was supplemented by information derived from a 1992 transportation survey, which asked several questions regarding satisfaction with the existing transportation system.

It should be noted that results of the 2001 AMATS Multi-Modal Transportation Survey corroborate several of the goals, policies and objectives, particularly relating to importance of roads and emergency services, inadequacy of sidewalks and the desire for trails to be included in road projects, and the importance of transit to the community's livability.

The goals, policies, and objectives, which resulted from this process (see below), attempt to create a balance between competing demands and values. For example, the goal of providing a high quality transportation system was weighed against the goal of minimizing public expenditures. Similarly, the goal of quality transportation was balanced against the effects a particular project may have on the environment.

I. GOAL

Ensure development of a balanced transportation network that provides an acceptable level of service, maximizes safety, minimizes environmental impacts, provides alternate transportation types, and is compatible with planned land use patterns.

II. OBJECTIVES

Decrease travel time through an increase in the transportation efficiency during peak-hour periods.

Minimize cut-through traffic through residential neighborhoods.

Strike a balance between safety and economical design with all transportation projects.

III. POLICIES

A. Coordination Policy

Coordinate the Chugiak-Eagle River Long-Range Transportation Plan with the Anchorage Bowl Long-Range Transportation Plan, Chugiak-Eagle River Comprehensive Plan, Transit Development Plan, Trails Plan, and other relevant plans and programs. The Chugiak-Eagle River LRTP and Officials Streets and Highways Plan should be coordinated with proposed Municipality of Anchorage plans for emergency management and public safety as they are developed.

B. Public Participation Policy

Encourage public participation in all transportation-related decisions. The 1996 Chugiak-Eagle River Transportation Plan was developed with the assistance of a Citizen Advisory Committee, which included representatives from South Fork, Eagle River Valley, Eagle River, Birchwood, and Chugiak Community Councils as well as from the Chugiak, Birchwood, Eagle River Rural Road Service Area Board, the Eagle River Parks and Recreation Advisory Board, and Eklutna, Inc.

For the 2003 Update, which was not considered a major update, participation by each of these organizations was actively sought, but the Citizen Advisory Committee did not meet as a group In the future, however, AMATS will continue to employ a similar committee to advise it on periodic updates of the plan, particularly following the next update to the Chugiak-Eagle River Comprehensive Plan.

Work to ensure adequate public notice to affected property owners during project development.

C. Funding Priority Policies

In 1996 the consensus was to utilize the following criteria to rank proposed roadway improvement projects in order to make the best use of future transportation funding:

1. Bring existing facilities up to current standards. Capacity expansion projects will be considered at the same time as safety improvements if they are warranted. Projects that address both capacity and safety concerns should receive highest priority.
2. Maintain and rehabilitate the existing transportation system (roads, trails and sidewalks) to prevent deterioration of facilities and avoid the need for major reconstruction.
3. Establish a basic bike and pedestrian circulation network that will provide access to schools, neighborhoods and commercial centers.
   a) Trails and pedestrian facilities for transportation should receive funding priority over trails, which primarily serve a recreational purpose.
   b) Trails within high-density areas will be given priority over trails within low-density areas.
4. Add capacity to the existing roadway system or construct new roadways to alleviate existing capacity problems and accommodate increases in traffic.

D. Access Policy

Limit and provide access to the street network in a manner consistent with the function and purpose of each roadway. To achieve this level of access control, the Municipality shall encourage consolidation of access in developing commercial and high-density residential areas through shared use of driveways and local access streets.

E. Level of Service Policy

Adopt a Level of Service (LOS) C for peak hour traffic flow on the roadways within the Chugiak-Eagle River area. Exceptions may be made in areas where the cost of right-of-way acquisition is high due to intense urban development. (LOS C provides for traffic flow with speeds still at or near the free flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted at LOS C.)

F. Transit Service Policies

Support improvements in the frequency and convenience of transit service to high density, transit dependent areas of Chugiak-Eagle River. Consider and evaluate the feasibility of commuter rail as a travel choice.

Investigate alternative methods of providing public transportation services to low density development to, from, and within the Chugiak-Eagle River area and expand alternatives that are proven to be efficient.

Support the continued development of the park-and-ride system.

Promote transit accessibility through pedestrian access to bus stops and bus shelters, consistent with the AMATS approved Transit Facilities Design Guidelines.

G. Pedestrian and Bicycle Policies

Encourage travel by means other than the automobile and provide for the safety of pedestrians and bicyclists throughout the Chugiak-Eagle River area. Future road improvement projects, which involve major reconstruction or construction of additional lanes, should include bicycle and pedestrian facilities where feasible and as funding allows.

Incorporate internal pedestrian and bicycle networks in all new developments, as well as connections to external networks, which permit a real alternative to the automobile.

H. Congestion Management Strategy Policies

Encourage the management of congestion through strategies identified in its Congestion Management Program. Strategies of particular relevance to Chugiak-Eagle River include:

Transportation System Management (TSM)

- Signal interconnect systems, signal coordination and synchronization, and other signal systems to ease traffic flow;
- Turn lanes and pockets to allow turning vehicles to move out of through traffic lanes; and
- Access control for arterials and major collectors to minimize disruptions in traffic flow.

Transportation Demand Management (TDM)

- Encouraging the use of high occupancy vehicles such as carpools and vanpools;
- Promoting reduced employee travel during the daily peak travel periods through flexible work schedules and programs, which allow employees to work part- or full-time at home or at an alternate work site closer to home.

I. General Environmental Protection and Conservation Policy

Design transportation facilities within the Chugiak-Eagle River area minimizing adverse environmental impacts resulting from both their construction and operation, including but not limited to noise, air pollution, and negative impacts on wetlands and watersheds.

J. Air Quality Policy

Support on-going efforts to reduce dust pollution (PM10) in Chugiak-Eagle River.

K. Neighborhood Policy

Minimize residential and business relocations resulting from transportation projects.

L. Ongoing Transportation Planning Policy

Review and, if necessary, update the Chugiak-Eagle River Long-Range Transportation Plan every three years as required by federal TEA-21 planning regulations.

M. Maintenance Policy

Give full consideration to reducing maintenance and operating cost during the design and construction of all transportation improvements in the Chugiak-Eagle River study area.

N. Rural Lifestyle Policy

Give full consideration to preserving the existing rural lifestyle in low-density areas of Chugiak-Eagle River in the design of transportation improvement projects.

O. Connectivity Policy

Provide an interconnected network of streets for ease and variety of travel, and to facilitate emergency response, particularly for fire and medical services, and evacuation in the event of a disaster. Connections between new and existing subdivisions should be required except in the following cases: excess slope, the presence of a wetland or other body of water which cannot be bridged or crossed, existing development on adjacent property prevents a street connection, or the presence of a freeway or railroad.

P. Roadway Design Policy

New subdivision roads should be designed in accordance with Section 21.85.030 of the Anchorage Municipal Code. The Platting Board should carefully scrutinize any requests for variances to these roadway improvement requirements.

CHAPTER 3: EXISTING TRANSPORTATION SYSTEM

I. THE EXISTING ROAD SYSTEM

The major road system in the Chugiak-Eagle River area originated with the Old Glenn Highway traversing the area from Anchorage to Palmer. The system substantially expanded with development of the area and is now made up of a combination of State, local, and private routes. Major roadways in the Chugiak-Eagle River area include:

The Glenn Highway is the major north-south freeway serving the study area. It is also the only route available to persons desiring to travel north out of Anchorage. The Glenn Highway is the busiest road in the study area, averaging 47,111 vehicles per day between the Scalehouses and Hiland Road Interchange in 2000. Much of this traffic is from the Mat-Su Valley, with 23,000 vehicles recorded at the permanent counter located at the Mirror Lake Interchange of the Glenn Highway (1999). Most Chugiak-Eagle River residents also depend on the Glenn Highway to commute to work in Anchorage.

The number of lanes varies throughout the length of the Glenn Highway. It is a six lane, divided highway between Muldoon Road and the Hiland Road exit. At this point, it is reduced to a four lane, divided highway that continues through the study area to the intersection with the Parks Highway in the Matanuska-Susitna Borough. (Note: the southbound lane between the Eagle River bridge and Hiland Road is three lanes.)

The Old Glenn Highway served as the primary north-south arterial prior to the construction of the Glenn Highway. It begins at the intersection of Artillery Road and Eagle River Road near downtown Eagle River and ends about a mile past the North Peters Creek exit of the Glenn Highway. Its width also varies. It is a four lane, undivided arterial with a two-way center left-turn lane through downtown Eagle River to the intersection of the North Eagle River Access Road where it narrows to a two-lane facility through its terminus.

The portion of the Old Glenn Highway passing through downtown Eagle River between Eagle River Road and North Eagle River Access Road is the second busiest segment of roadway in the area with approximately 15,253 vehicles traveling on it per day (2000). The remainder of the Old Glenn Highway passing through more rural areas is not nearly so busy with daily traffic averaging 3,820 vehicles daily between South and North Birchwood Loop Roads (2000).

Eagle River Road is a two lane arterial serving the largest population center (Eagle River Valley) in the study area. It begins near downtown Eagle River at the intersection of Artillery Road and the Old Glenn Highway and ends inside Chugach State Park at MP 12.55. Eagle River Road also experiences wide variations in the amount of traffic it carries. While the western portion between VFW Road and Eagle River Loop Road handled an average of 7,623 vehicles per day in 2000 and 9,700 vehicles per day to the east of Eagle River Loop Road, other more easterly segments closer to the Eagle River Nature Center only handled an average of 580 vehicles per day (1999).

Eagle River Loop Road is an arterial primarily serving the central portion of Eagle River. It consists of two parts: the older section, which connects the Old Glenn Highway to Eagle River Road, and the new section, which crosses Eagle River and provides a secondary access from the

population center of Eagle River to the Glenn Highway. The older section is a two-lane facility while the newer section is four lanes and divided. Daily traffic averaged 7,230 along the older portion, and 10,968 along the newer portion in 2000.

The completion of the Eagle River Loop Road extension in 1992 significantly changed the traffic patterns in the central part of Eagle River. During the first year of operation (1992), the new roadway attracted approximately 8,200 vehicles per day and greatly relieved pressure on other area roads. For example, traffic was reduced by 6,000 vehicles per day on the Old Glenn Highway between Eagle River Road and Eagle River Loop Road and 6,500 vehicles per day on Eagle River Road between Eagle River Loop Road and the Old Glenn Highway after the new extension was completed. The main intersection into Eagle River from the Glenn Highway at Artillery Road also experienced some relief due to the new road connection. One section of Artillery Road just off the northbound exit ramp from the Glenn Highway experienced a reduction of approximately 7,400 vehicles per day.

The North Eagle River Access Road serves as a two lane arterial connection between the New and Old Glenn Highways. Its location midway between the Artillery and South Birchwood Interchanges provides convenient access to the Glenn Highway from subdivisions in northern Eagle River and southern Chugiak. The construction of the North Eagle River Interchange in the early 1990's replaced the old at-grade intersection. This greatly improved the functioning of the intersection and had a notable impact on traffic patterns in the area. Prior to its construction, the majority of commuters accessed the Glenn Highway at the Artillery Road Interchange due to the difficulty of merging at-grade with the heavy southbound Glenn Highway traffic during the morning peak period. .

The remainder of the road system is composed of collector and local roads. Collector streets distribute traffic to and from the arterial system and local access roads. Among the more significant collector roads are: Hiland Road which is the primary collector serving residents living along the South Fork of Eagle River; Business Boulevard which serves the business district within Eagle River; Birchwood Loop Road which is the primary collector serving the Birchwood Community Council area; and Eklutna Lake Road which connects the Glenn Highway with Chugach State Park facilities at Eklutna Lake.

II. PUBLIC TRANSPORTATION AND OTHER MODES

The Municipality of Anchorage currently operates three bus routes in the Chugiak-Eagle River area providing around 140,000 rides in 2001. The Municipal Public Transportation System is primarily oriented toward serving commuters traveling from their homes in the Chugiak-Eagle River area to places of work in the Anchorage Bowl (midtown or downtown). A 2001Multi-Modal Transportation Survey revealed that of those persons surveyed in the study area, 4.1% rode the bus to work or school.

The Chugiak-Eagle River area is also served by a rudimentary bike path system consisting of two main bike trails. A bike trail paralleling the Glenn Highway from the Boniface Interchange in the Anchorage Bowl to North Birchwood forms the north-south backbone of the system. The Eagle River Road bike trail serves as the main east-west bike route and extends from the Old Glenn Highway to Eagle River Lane.

CHAPTER 4: IDENTIFICATION OF ROAD SYSTEM DEFICIENCIES: TRANSPORTATION PLANNING MODEL

I. INTRODUCTION

Transportation planning models are the primary tools used to predict future travel conditions. With the information derived from the model, it is possible to identify which roadways are expected to experience unacceptable levels of congestion. Solutions to these congestion problems can then be developed.

The Municipality of Anchorage Transportation Planning Model was utilized to forecast future (Year 2023) travel volumes in the Chugiak-Eagle River area. This model was developed using TransCAD 3.61 software. Complete documentation of the model is contained in the "Anchorage Transportation Planning Model Documentation Report" dated June 2000 and is available at the Municipality of Anchorage Transportation Planning Division.

II. MODEL ASSUMPTIONS

The number and distribution of households and employment are the primary factors underpinning transportation demand. There are well-defined relationships between land use development and travel demand generation. The following section presents the major land use assumptions used in the model.

A. Population

One of the most important assumptions of any traffic projection model is population. TEA-21 planning regulations require that all transportation plans utilize a 20-year planning horizon. Thus, for the purposes of this planning study, the population of the study area was estimated for the year 2023. TEA-21 planning regulations also require that long-range transportation plans utilize the most recent data available. The most current population projections available at the time this study was being developed are contained in the report entitled "Economic Projections: Alaska and the Southern Rail belt 2000-2025", prepared by Scott Goldsmith of the Institute of Social and Economic Research (ISER) and published in October 2001. The population projections in the ISER report were based on an economic model utilizing a consistent set of assumptions about levels of future basic industry activity within the state, national variables, and state fiscal policy variables. Three separate projections were developed: the Low Case, the Base Case, and the High Case. The Base Case projection (see Table 1), which is considered to be the most likely scenario, was selected for use in the Chugiak-Eagle River Long-Range Transportation Plan. According to the Base Case estimates, the future rate of wage and salary employment growth in Anchorage will be 0.74 percent for the remainder of this decade, 1.33 percent for the next decade, and 1.09 percent thereafter.

Table 1
Year 2023 Projections

	Municipality of Anchorage	Chugiak-Eagle River
Population	350,700	54,500
Households	130,500	17,650
Number of Persons Employed	167,800	7,070

Once the Municipality of Anchorage projections had been established, the population projections for the Chugiak-Eagle River sub-region could then be determined. In order to accomplish this, staff utilized the same assumptions as the 1993 Chugiak-Eagle River Comprehensive Plan. Based on an historical population analysis, the Comprehensive Plan estimated that Chugiak-Eagle River would capture approximately 22 percent of the Municipality of Anchorage's population growth within the next 20 years. The resulting estimate of 54,500 represents an 82% increase between 2000 and 2023 or an annual average growth rate of 3.5% a year.

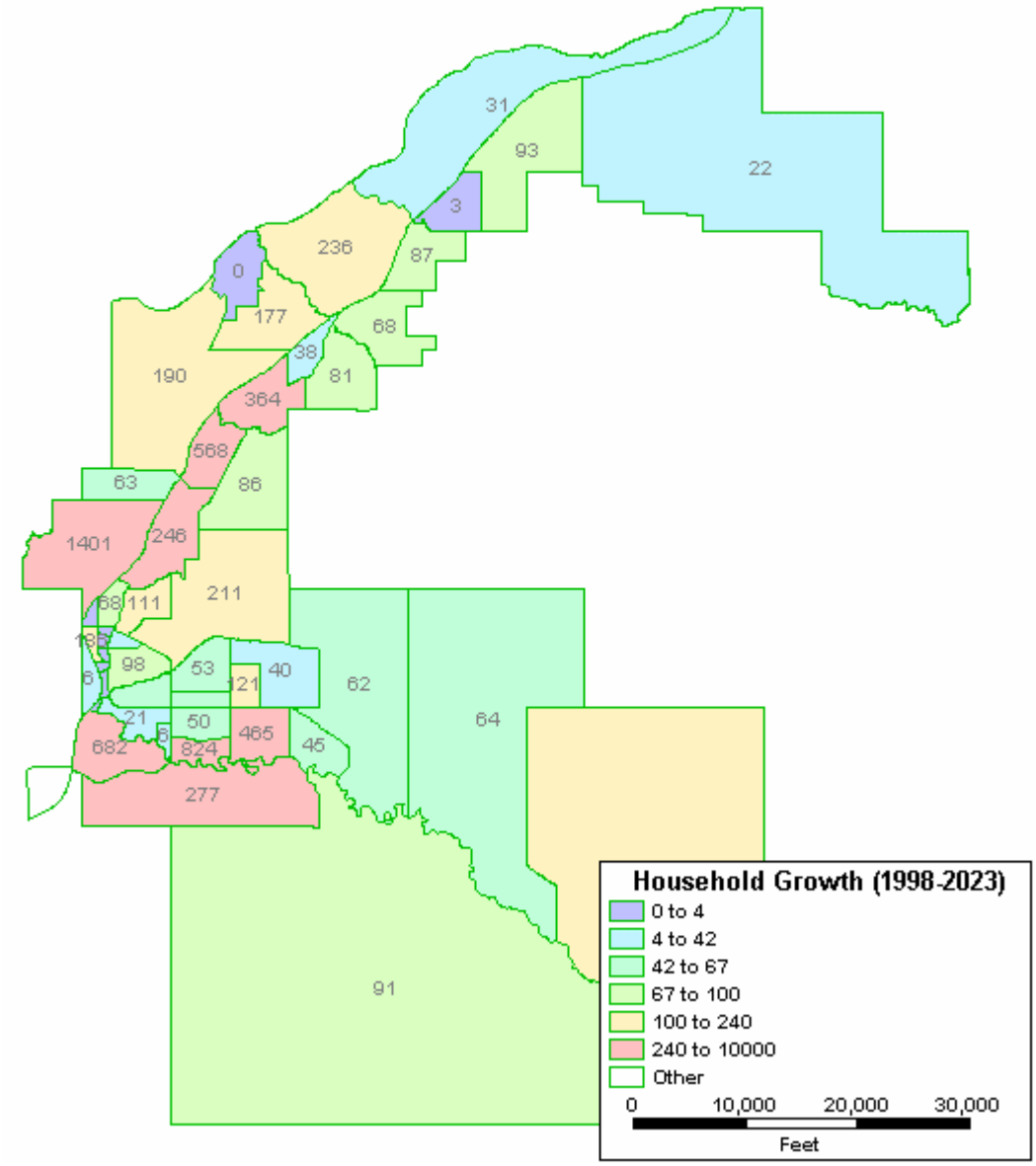
B. Number and Location of Dwelling Units

In order to be useful in the transportation-planning model, the future population and household estimates for Chugiak-Eagle River must be distributed by traffic analysis zones (the building block of the transportation planning model). The allocation of households to a TAZ is accomplished through the use of the Municipality of Anchorage land use allocation model. The following five factors are used to allocate growth:

- The availability of the parcel for development (Is it vacant?)
- The suitability of the land for development (Is it located in a wetland or steep hillside?)
- The type and amount of development allowed under zoning ordinances
- The accessibility of the location of the parcel (How close is the parcel to existing development?)
- Growth in the pipeline (Are there set plans to develop the property in the near future?)

Figure 2 shows where the land use allocation model allocates future growth. The "hot spots" of residential growth are found primarily in four areas: (1) the Powder Reserve west of the Glenn Highway, (2) Eagle Crossing, (3) the area south of Eagle River and bordered on the south and east by Eagle River Loop Road, and (4) Eklutna 770 located between the Glenn Highway and Old Glenn Highway and North and South Birchwood Loop Roads. All except for the Eklutna 770 contain active subdivisions, which are on sewer and water and consequently can be developed at higher densities. Although there are no plans to develop Eklutna 770 at this time it is assumed that sewer and water will be extended within the next 20 years and development will take place during the timeframe of this plan.

Figure 2
Household Growth (1998-2023)



C. Amount and Location of Future Employment

The amount and location of future employment also has a strong influence on the traffic volumes on area roads. Employment, especially retail employment, acts as a traffic attractor. Large concentrations of retail land uses create high traffic volumes on the adjacent roads.

Estimates of future employment utilized in the traffic projection model also follow the assumptions of the 1993 Comprehensive Plan. Historic trends show employment increasing from 10 percent of the Chugiak-Eagle River area's 1980 population to 11 percent of its 1990

population. With economic growth, more of the area's population will be employed locally. Because Chugiak-Eagle River is expected to remain a bedroom community of Anchorage during the next twenty years, most of this increased employment will probably continue to be local serving rather than region serving.

Based on the above assumptions, the Comprehensive Plan calculated that year 2010 employment would be 13 percent of the projected population. Utilizing this assumption gives an estimated 2023 employment base for Chugiak-Eagle River of about 7,070 jobs.

The 1993 Chugiak-Eagle River Comprehensive Plan also contains direction regarding the location of future commercial development. The plan states that it is the policy of the Plan that downtown Eagle River is retained as the major commercial center for the Chugiak-Eagle River area. It also recognized however that commercial development would occur at strategic locations such as in Ekultna, Peters Creek, North Birchwood, at the Old Glenn Highway in Chugiak, South Birchwood, at the intersection of Eagle River Road and Eagle River Loop Road, and at the intersection of the Old Glenn Highway and North Eagle River Access Road. Major designated industrial areas are located around the Birchwood Airport, along the Old Glenn Highway in Chugiak, at Springbrook Drive in Eagle River, and at West Artillery Road in Eagle River.

This Long-Range Transportation Plan has adopted the employment distribution guidelines contained in the 1993 Comprehensive Plan. While this plan was being revised, Fred Meyer announced that the company was planning to build a new store on the northeast corner of the Old Glenn Highway and North Eagle River Access Road. The model assumed that these plans would be implemented.

III. MODEL RESULTS

A. Roadway Segments

The transportation model traffic projections for 2023 are presented in Table 2 below and on Map 2. Due primarily to the population growth in the next 20 years, traffic in Chugiak-Eagle River is expected to grow substantially. Traffic growth will not be evenly distributed, however. Some of the largest increases will be along the Glenn Highway between North Eagle River Access Road and the Anchorage Bowl. Commuters who live in Chugiak-Eagle River and work in the Anchorage Bowl generate most of this traffic. There will also be a fairly large increase in traffic along Eagle River Loop Road between Eagle River Road and the Hiland Interchange of the Glenn Highway. This growth is also driven by commuter traffic from newly developing subdivisions in Eagle Crossing and the area south of Eagle River on the inside curve of Eagle River Loop Road.

Traffic on Eagle River Road is also expected to grow substantially over the next 20 years as a result of expected residential growth in Eagle River Valley. It should be noted, however, that the traffic projections for Eagle River Road could vary substantially depending on the pace of development of the relatively large tracts of vacant land located south of Eagle River Road and east of Eagle River Lane. The Old Glenn Highway north of the North Eagle River Access Road is also subject to significant increases in traffic depending on future land use development in the

Eklutna 770 area (located between the Old Glenn Highway and Glenn Highway and South and North Birchwood Loop Roads).

Changing traffic patterns will also have an effect on future traffic volumes in the Chugiak-Eagle River area. Changes in the distribution of retail activity within Chugiak-Eagle River are the primary cause of these shifts in traffic patterns. Wal-Mart, located on the southeast corner of Eagle River Loop Road, and Fred Meyer, to be built on the northeast corner of the Old Glenn Highway and North Eagle River Access Road, will have the largest impact. Given their size, these two establishments are expected to generate a substantial amount of traffic. As a result, traffic in downtown Eagle River will grow slower than traffic on roads leading to the new stores. This is particularly true with respect to Eagle River Loop Road between the Old Glenn Highway and Eagle River Road. People from Eagle River Valley will utilize this route to access the Fred Meyer store and people from the north part of Eagle River will utilize this route to access the Wal-Mart store. Reconstruction of this section of Eagle River Loop Road (currently scheduled for 2006) will also cause more people to use this route. Another major traffic generator, the new high school planned to be built on Yosemite Drive in Eagle River, will also affect traffic patterns on Hiland Road and at the Glenn Highway – Hiland Road Interchange.

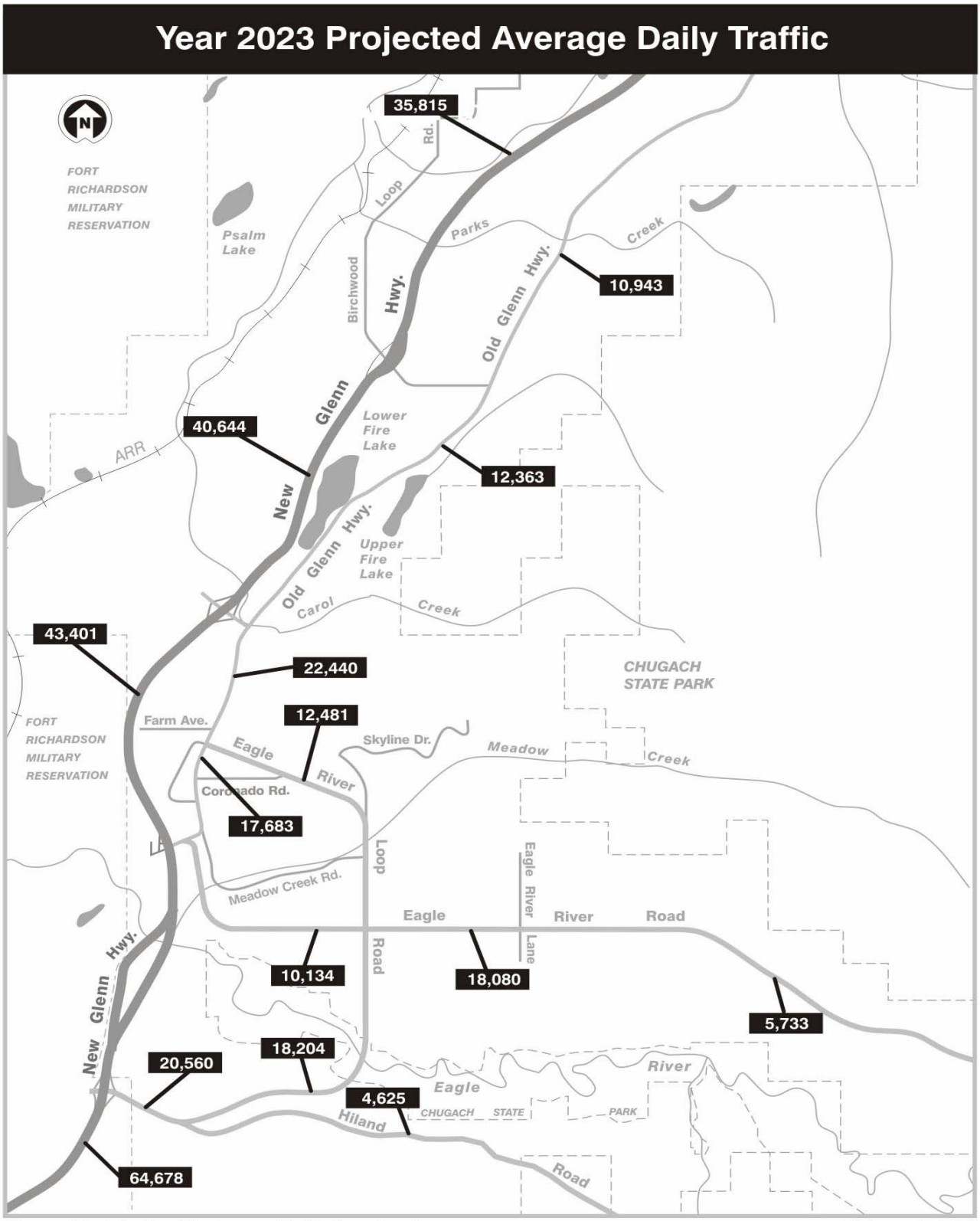
The total volume of traffic on area roads is not very informative in and of itself. In order to be meaningful, traffic volumes must be converted to Level of Service. Level of Service is a useful way of defining how well a particular street or road is operating and whether or not its capacity is being exceeded and improvements might be needed. It is based on the ratio of traffic volume to roadway carrying capacity. Levels of Service range from A to F, with LOS A describing primarily free flow operations and LOS F describing forced or breakdown flow. (See Figure 3, Level of Service Illustrations.)

The Chugiak-Eagle River Long-Range Transportation Plan contains a policy, which states that any road segment with a Level of Service of D or worse is considered to be overcapacity. According to Table 3, only two roadway segments are currently operating at LOS D or below: (1) the northbound lanes of the Glenn Highway between Hiland Road and Artillery Road and (2) the Eagle River Road between Crestview and the Greenhouse. Several more roadway segments are expected to exceed the standard by the Year 2023. The majority of roadways in the Chugiak-Eagle River area are expected to continue to operate at a satisfactory level, however. The roadway segments projected to operate at congested levels include:

- Glenn Highway - Scalehouses to Hiland Road
- Glenn Highway - Hiland Road to Artillery Road (northbound).
- Glenn Highway - Artillery Road to N. Eagle River Access Road
- Glenn Highway - N. Eagle River Access Road to S Birchwood Loop Road
- Eagle River Road – Crestview Lane to Greenhouse Street
- Eagle River Road – Old Glenn Highway to Chain of Rock Drive
- Eagle River Loop Road – Coronado Street W. to Baronoff Avenue

Table 2
Year 2023 Traffic Projections
(AADT = Annual Average Daily Traffic)

Roadway Segments	Actual 2000 AADT	Projected 2023 AADT	Percent Change
Eagle River Road (east of Eagle River Loop Rd.)	9,700	18,080	86.4%
Eagle River Road (west of Eagle River Loop Rd.)	7,623	10,100	32.5%
Eagle River Loop Rd. (between Old Glenn Hwy. & Eagle River Rd.)	7,230	12,500	72.9%
Eagle River Loop Rd. (between Eagle River Rd. & Hiland Rd.)	10,968	18,200	65.9%
Eagle River Loop Rd. (between Hiland Rd. & the New Glenn Hwy. Interchange)	13,090	20,600	57.4%
Old Glenn Hwy. (between Eagle River Rd. & Eagle River Loop Rd.)	13,516	17,700	30.9%
Old Glenn Hwy. (between Eagle River Loop Rd. & North Eagle River Access Rd.)	16,990	22,400	31.8%
Old Glenn Hwy. (between South & North Birchwood Loop Rd.)	3,820	10,900	185.5%
Glenn Hwy. (between Scale- houses and Hiland Rd.)	47,111	64,700	37.3%
Glenn Hwy. (between Hiland Rd. and Artillery Rd.)	39,090	50,100	28.2%
Glenn Hwy. (between Artillery Rd. & N. Eagle River Access Rd.)	25,570	43,400	69.7%
Glenn Hwy. (between N. Eagle River Access Rd. & S. Birchwood Loop Rd.)	28,500	40,600	42.5%
Glenn Hwy. (north of N. Birchwood Loop Rd.)	25,860	34,400	33.0%

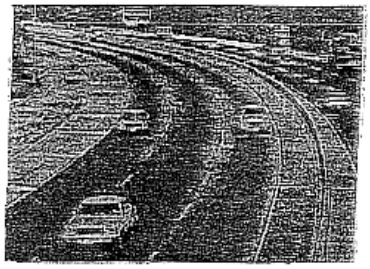


Source: Municipality of Anchorage, Traffic Department

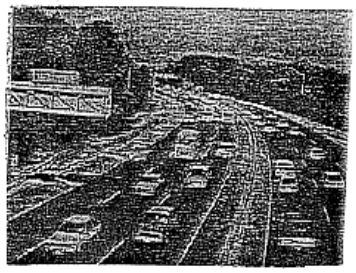
February 7, 2003

MAP 2

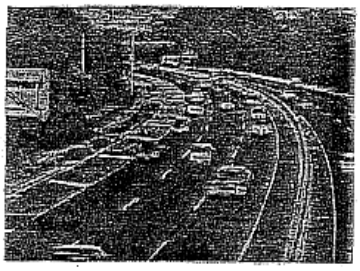
Figure 3
Level of Service Illustrations



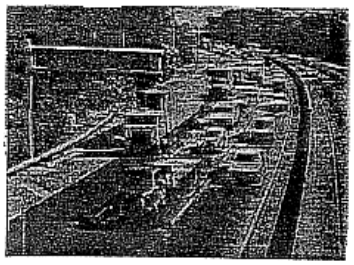
Level of Service A



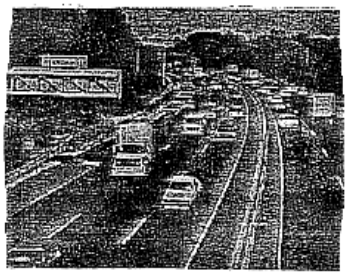
Level of Service D



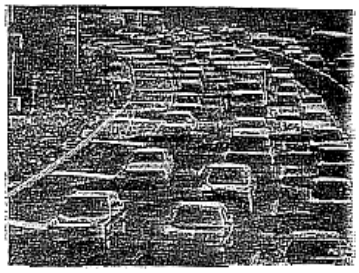
Level of Service B



Level of Service E



Level of Service C



Level of Service F

Table 3
Level of Service Summary
Chugiak-Eagle River Freeways and Arterials
(LOS = Level of Service, A to F)*

Roadway Segments	2000 LOS	2023 LOS
Glenn Highway		
Scalehouses to Hiland Rd.	C	D
Hiland Rd. to Artillery Rd. (Northbound)	D	D
Hiland Rd. to Artillery Rd. (Southbound)	B	C
Artillery Rd. to N. Eagle River Access Rd.	B	D
N. Eagle River Access Rd. to S. Birchwood Loop Rd.	C	D
S. Birchwood Loop Road to N. Birchwood Loop Rd.	C	C
Old Glenn Highway		
Eagle River Rd. to Business Blvd.	B	B
Business Blvd. to Eagle River Loop Rd.	C	C
Eagle River Loop to N. Eagle River Access Rd.	C	C
North Eagle River Access Rd. to S. Birchwood Lp. Rd.	A	C
Eagle River Road		
Old Glenn Hwy. to Chain of Rock Drive	C	D
Chain of Rock Drive to Eagle River Loop Rd.	B	B
Eagle River Loop Rd. to Crestview Lane	C	C
Crestview Lane to Greenhouse Street	D	E
Eagle River Loop Road		
Old Glenn Highway to Coronado St. W.	B	B
Coronado St. W. to Baronoff Ave.	C	D
Baronoff Ave. to Eagle River Road	B	B
Eagle River Road to Driftwood Bay Drive	C	C
Driftwood Bay Drive to Hiland Road	A	B

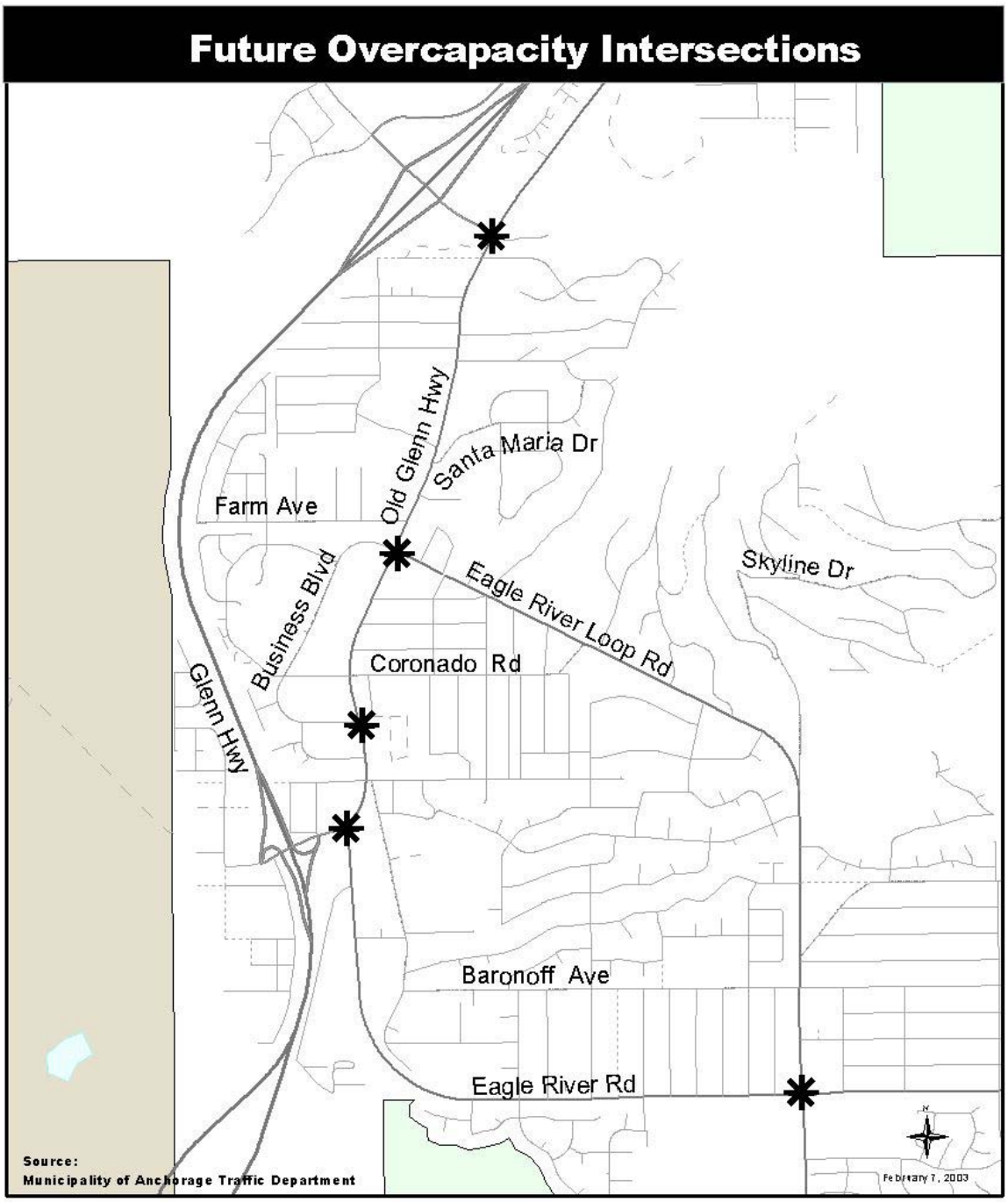
Glenn Highway

B. Intersections

Measuring the Level of Service of roadway segments does not always tell the whole story. According to the Anchorage Congestion Management System "Status of the System Report," published in September 2000, intersection delay is the primary cause of congestion on the Anchorage roadway network.

At the present time, none of the intersections in Chugiak-Eagle River is overcapacity, although the Old Glenn Highway/Eagle River Loop Road intersection is quickly approaching its ability to handle its traffic load. An analysis of intersections using projected traffic volumes, however, reveals that at least five intersections will be overcapacity within the next 20 years.

As Map 3 reveals most of these problem intersections are located along the Old Glenn Highway where it traverses the downtown core of Eagle River. As Chugiak-Eagle River grows, the number of trips from the residential growth areas (Powder Reserve, Eagle Crossing, etc.) to the downtown core will increase substantially. Unfortunately there are only two main access routes into and out of the core, one from the north (the Old Glenn Highway) and one from the south (Eagle River Road). This forces most of the traffic to go through a limited number of intersections. As a result, these intersections will soon become overburdened and increase delays.


Future Overcapacity Intersections
Old Glenn Hwy
Santa Maria Dr
Farm Ave
Business Blvd
Eagle River Loop Rd
Skyline Dr
Coronado Rd
Glenn Hwy
Baronoff Ave
Eagle River Rd
Source:
Municipality of Anchorage Traffic Department
February 7, 2003

Map 3

CHAPTER 5: PUBLIC TRANSPORTATION AND OTHER MODES AND POTENTIAL FOR EXPANSION

I. PUBLIC TRANSPORTATION

A. Transit

The primary mode of travel in the Chugiak-Eagle River area is the private automobile. Public transportation options are limited to People Mover, AnchorRIDES, Chugiak Senior Center, and the Anchorage School District pupil transportation service. Private transportation providers (taxis) are based in Anchorage and charge up to $35 for a trip into Anchorage. Unlike Anchorage, with numerous social service agencies, Chugiak-Eagle River residents have limited options and most rely on the private automobile.

People Mover service is primarily oriented toward commuters traveling from home to places of work in the Anchorage Bowl. The Municipality currently operates three bus routes in the area, which have remained largely unchanged since 1993. Ridership during the same period of time has remained unchanged as well. The constant ridership has been around 140,000 annual passengers with an average weekday ridership of almost 550.

The three routes operating in the area are described below:

- Route 74 connects downtown Anchorage and Eagle River with service to Eagle River Road and Eagle River Loop Road. It operates about 6 hours and provides about 85 passenger trips per day.
- Route 76 connects the Eagle River area to midtown Anchorage during peak hours and to downtown Anchorage during non-commute hours. About 50% of the route operates on local roads with potential to generate riders. It operates about 24 hours and provides about 380 passenger trips per day. This route also provides the only service on Saturdays between Eagle River and Anchorage.
- Route 102 services as a park & ride route operating primarily on the Glenn Highway with stops at Peters Creek, the North Birchwood Park & Ride lot, and the Eagle River Transit Center. It operates about 4 hours and provides about 80 passenger trips per day.

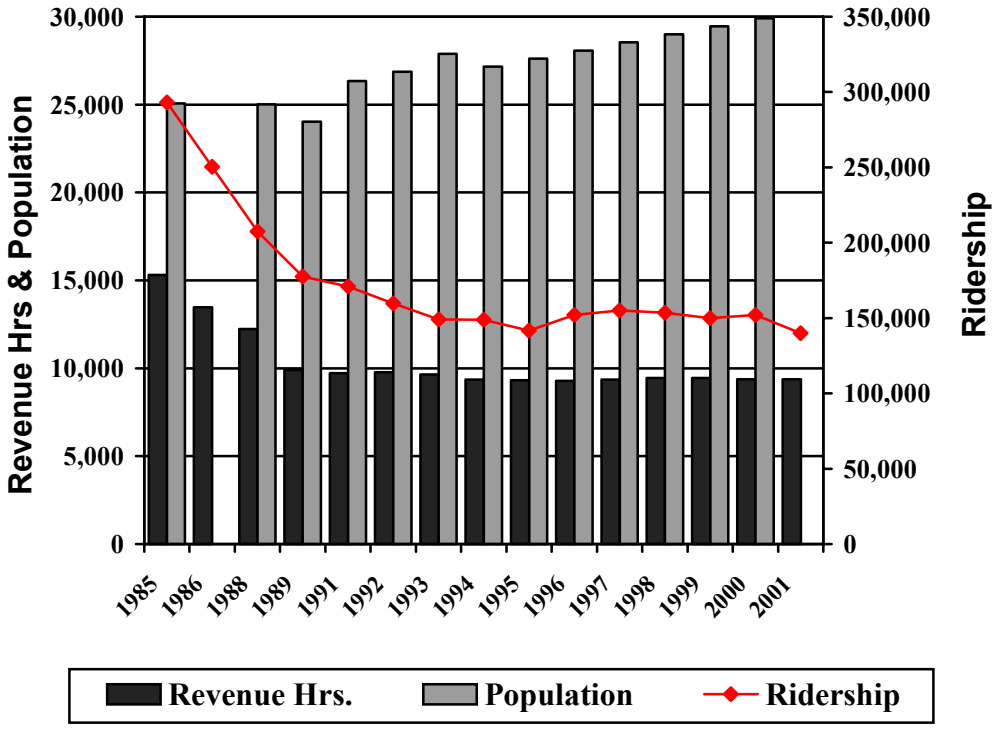
Park & ride lots are used extensively in the Chugiak-Eagle River area and are intended to provide an incentive for time-sensitive commuters in suburban and lower density areas of the Municipality. The Eagle River Transit Center, located on Business Boulevard in downtown Eagle River, serves as the primary park & ride lot. Other park & ride facilities include Joy Lutheran at Eagle River Road and Eagle River Loop Road, the North and South Birchwood Interchanges, and the Thunderbird Falls Trailhead.

As Figure 4 indicates, there is a direct correlation between service hours provided and transit ridership. After Anchorage voters approved a tax cap for municipal services in 1983, public transportation services citywide were reduced about 35%. The Eagle River area experienced a reduction of close to 50%. A corresponding reduction in People Mover ridership resulted from the service reduction, despite increases in the population of the Chugiak-Eagle River service area. Additionally, major improvements to the roadway network, such as the Eagle River Loop

extension and the North Eagle River interchange have substantially decreased travel time by car between Chugiak-Eagle River and Anchorage, thus increasing the relative attractiveness of automobile travel.

People Mover services in the area have not increased due to continued budget difficulties and the need to spread limited resources to the most people. Consequently, the area continues to rely extensively on the private automobile.

Figure 4
Transit Ridership in Chugiak-Eagle River



According to a 1996 Origin-Destination study conducted of all municipal residents, there is a forecasted daily demand for 2,900 transit trips for Eagle River/Chugiak residents—almost six times the current level of ridership. More than 1/3 of these trips are intra-zonal—trips both starting and ending in the area. As additional community services are provided (retail, medical, educational), even more trips will remain in the area. Trips serving other areas of high potential demand include north and south midtown, downtown, the military bases, the University area, and Mountain View.

Increasing ridership in the Chugiak-Eagle River area will require changes to the way public transportation services are delivered. Service must be more frequent, be more direct/faster, and stop closer to origins and destinations. To meet the forecasted demand requires almost tripling the amount of service to the area, the ability to serve multiple destinations, and smaller vehicles to operate on the narrower roads in the area.

Low population density, as well as the distance from downtown Anchorage, contribute to difficulties in improving service in Chugiak/Eagle River. According to Pushkarev and Zupan (1977), residential densities need to be at least an average of eight dwelling units per acre to support viable feeder bus service, and an average of 15 dwelling units per acre to support light rail and high frequency bus service. A more recent study on the relationship between transit usage and density was conducted by Lawrence D. Frank and Gary Pivo ("Relationships Between Land Use and Travel Behavior in the Puget Sound Region," Sept. 1994). This study concluded that significant movement from Single Occupancy Vehicles (SOVs) to other modes does not occur until certain density thresholds are reached. For work trips, the thresholds are 9 to 13 residents per gross acre. For shopping trips, they are 18 dwellings per acre.

Research conducted as a part of the Chugiak-Eagle River Comprehensive Plan reveals that only one area in the region has a density that exceeds 8 dwelling units per acre (DUA). Coronado Road, Eagle River Loop Road, and the Old Glenn Highway border this relatively high-density area. Most of the core area of Eagle River has a density of between 2-4 DUA. The outlying areas of Birchwood and Chugiak have an even lower density of less than 1 DUA. The rezoning of the Powder Reserve pointed up the practical difficulties of raising residential densities in both in-fill areas and peripheral areas. Existing residents consider higher density housing a Locally Undesirable Land Use. In the case of the Powder Reserve rezoning, some neighbors opposed the rezoning as conflicting with the existing low-density rural lifestyle of the area.

Although the low density of the Chugiak-Eagle River area poses difficulties in relying exclusively on conventional 40-foot fixed route service, there are opportunities for expansion of the bus system. Several possibilities include: maintaining quick, fixed route service between destinations adjacent to the Glenn Highway (Peters Creek, the North and South Birchwood Interchanges, and the Eagle River Transit Center); connections between Eagle River and the Muldoon Town Center Transit Hub; and smaller vehicles which can operate on the narrower roads and can get people from the neighborhoods to stops connecting with the quicker Glenn Highway route.

Eagle River Transit Center

Additional opportunities include development of vacant land in the rezoned Powder Reserve at a high enough density to warrant transit service into this area. Although the overall density will only be 3.4 dwelling units per acre, three of the multi-family areas are planned to contain approximately 800 units and result in about 8 dwelling units per acre. With this kind of density, a park and ride facility on the west side of the Glenn Highway near the intersection with the North Eagle River Access Road may be attractive to persons living in this newly developing area.

Within the Chugiak/Eagle River area, the Chugiak Senior Citizens Center is responsible for social service transportation for senior citizens in the area. The Municipality is responsible for similar transportation for people with disabilities who are unable to use the People Mover system. AnchorRIDES is an umbrella organization designed to provide coordinated social service trips, specializing in curb-to-curb dial-a-ride service. To eliminate duplication of services, AnchorRIDES has contracted with the Chugiak Senior Citizens Center to coordinate rides for both populations on the same system.

This coordinated concept can be expanded to include the general public. A Community Circulator system would serve all area residents through a combination of fixed route and neighborhood service. Smaller vehicles would be operated on a fixed route but would travel off-route, if requested, to serve someone closer to their home. This type of service is programmed for implementation in Chugiak/Eagle River towards the end of 2003, with continuation of direct service off a Glenn Highway route.

B. Carpooling / Vanpooling

Anchorage's Share-A-Ride program is an employer-based Transportation Demand Management strategy that has been in place since 1976. In February 1995, the Public Transportation Department initiated a vanpool component to the program, encouraging long-distance commuters to ride together in a 13-14-passenger van.

The Share-A-Ride program is identified as a control measure in congestion mitigation and air quality plans for the municipality. The program promotes carpooling and vanpooling to commuters with at least one end of their trip within the Municipality of Anchorage area. Share-A-Ride staff primarily targets area employers to educate employees and to generate interest in the program. Additional potential carpool/vanpool participants are identified through trade shows and from roadside signs with the Share-A-Ride telephone number.

The program uses a GIS-based computer system matching commuter origins, destinations, trip times, and personal preferences. The system can accept and geocode trip origins and destinations throughout the state, providing an option to expand carpooling and vanpooling statewide.

In addition to reductions in stress and commute costs, program incentives for Share-A-Ride participants may include: reduced parking at the major downtown garages; reserved parking; and occasional drawings and promotions. Two recent additions to the benefits include a reduced bus pass for vanpoolers who may need to travel during the day, and "Commuters Choice". Commuter Choice provides a deductible benefit tax-incentive to employers who choose to pay all or a portion of employee commute costs. A large hidden cost for employers is for employee parking. Providing a bus pass or vanpool fare is significantly cheaper for the employer, improves worker on-time performance, and provides an employee benefit that has positive tax benefits for the employer.

Carpooling and vanpooling have the most potential for reducing congestion between Chugiak-Eagle River and Anchorage. Anthony Downs in his book entitled Stuck in Traffic (1992) states that "the most effective means of reducing peak-hour congestion would be to persuade solo drivers to share vehicles".

The potential of carpooling becomes readily apparent when examining statistics on the numbers of solo drivers who commute to work alone. In 1983, 86.3 percent of all morning peak-hour commuters nationwide were in private vehicles, and 68 percent were driving alone. The driving habits of Anchorage residents correspond closely to the national figures. According to a 1993 telephone survey conducted in conjunction with the Municipal Congestion Management Plan, 70% of Anchorage area residents drive alone, another 23% carpool with a family member, and the rest use another mode of travel. The U.S. Census 2000 – Carpool Share by State ranks Alaska fifth nationally in the share of commuters carpooling. This is up from tenth from the 1990 U.S. Census.

Chugiak-Eagle River residents have a higher than average carpool participation rate. According to the 1992 Anchorage Transportation Research Survey the average number of passengers per vehicle in Chugiak-Eagle River is 1.65 compared to 1.52 for the entire Municipality. Carpooling to work is also more popular, with 1.16 passengers per vehicle riding together on the Glenn Highway at the Fort Richardson exit, compared to 1.14 in the entire Municipality of Anchorage.

To date, there are 18 active vanpools in the Share-A-Ride program. Of these, 14 vanpools originate in the Mat-Su area, one travels from Anchorage to Mat-Su, and three vanpools originate in Anchorage and travel to Girdwood. There are currently no vanpools that originate in the Chugiak/Eagle River area. Due to fixed costs spread over miles traveled, vanpools work best for commutes in excess of 25-30 one-way miles. At this time, there are no available vehicles for expansion of the vanpool program. Due to continued demand, additional vehicles have been ordered for Fall 2003 delivery, with the option for more vehicles in Spring 2003.

Table 4
Share-A-Ride Program Background

Year	Carpoolers/ Vanpoolers	Annual Reduction in Vehicle Miles
1987	188	1,007,000
1988	797	3,206,000
1989	1,294	5,148,000
1990	1,422	5,940,000
1991	1,653	6,539,000
1992	1,731	6,896,000
1993	1,936	7,596,000
1994	2,176	8,663,000
1995	1,987	9,343,000
1996	1,782	8,943,000
1997	1,703	8,781,000
1998	1,185	6,830,000
1999	1,095	6,641,000
2000	1,091	8,916,000
2001	973	10,883,000

Ridesharing will continue to be a critical mode of alternative transportation in Chugiak-Eagle River, although participation levels are difficult to project based on historic trends. Nevertheless, the potential exists for expanding this important service.

C. Public Transportation Recommendations

The following recommendations for the Chugiak-Eagle River area are based on the Public Transportation Department Route Restructure Analysis, completed in 2002. These recommendations are provided for concept only. Additional analysis of the Chugiak-Eagle River area is needed in order to finalize the long-range public transportation recommendations.

1. Implement convenient public transportation service that combines the predictability of a fixed route system with the accessibility of a dial-a-ride/community circulator system.
2. Maintain large bus service, oriented to the Glenn Highway, to provide transportation for area residents into Anchorage.
3. Provide connectivity between Chugiak-Eagle River and destinations in Anchorage other than downtown.
4. Explore expanding People Mover service to serve the high-density residential development in Tract A, Powder Reserve when development is nearing completion, either through park & ride or through community circulator service.
5. Explore additional Share-A-Ride program alternatives, particularly the vanpool program in the Chugiak-Eagle River area.

II. PEDESTRIAN AND BICYCLE FACILITIES

Eagle River has some bicycle and pedestrian facilities that are enjoyed by many residents. According to a 2001 transportation survey, the bicycle and walking trails are important to 53.5% of Eagle River residents surveyed; 19.8 % are neutral, while 26.7 % believe they are unimportant. Of those surveyed, 7.1% use the trails daily in summer, and 4.0% in winter. More residents (38.7% summer and winter) indicated they use the trails system some of the time. Of those residents surveyed who use the trails system, 3.2% bike or walk to work or school in summer, and never in winter.

Deficiencies in the community-wide network do exist, however. According to the 2001 survey, of Eagle River residents asked, most (56.2%) agree that there are not enough sidewalks. When asked if trails and sidewalks should be included in street work, 70.0% of Eagle River respondents agreed.

The 1997 Areawide Trails plan serves as the official guide for the future development of pedestrian and other facilities within the Municipality of Anchorage and is incorporated by reference in this report. Chapter 3 identifies issues and needs, and makes recommendations for pedestrian and related uses, bicycle and other uses for the Chugiak-Eagle River area. The locations of trails / pedestrian accommodations on the Areawide Trails Plan maps are approximate, and are subject to available right-of-way, project budgets, terrain and other

constraining factors. Recommendations will be analyzed for feasibility and suitability as projects are developed.

A. Pedestrian Facilities

The rural character of much of Chugiak-Eagle River has resulted in development that is largely without pedestrian facilities. As a result, few neighborhoods have separate sidewalk facilities. However, sidewalks and walkways have been and are being required in the urban areas through the subdivision process. The Municipality of Anchorage Traffic Department designates walking routes for pedestrian safety for elementary schools, but these routes are not currently maintained.

Many of the older portions of the urban core of Eagle River do not have sidewalks. Where sidewalks exist, connectivity has been lacking. Recently completed and current programmed improvements have addressed some of these needs**.** The largest gap in the pedestrian system existed along Business Boulevard, which was built without sidewalks. Recently completed major upgrades to Business Boulevard include new walkways on either side of the road, and several new crosswalks along Business Boulevard.

Although the Old Glenn Highway has sidewalks on both sides, better pedestrian crossings were requested by residents living on the east side. The Old Glenn Highway Rehabilitation project, to be constructed in Summer 2003, will address some of the pedestrian safety issues voice by the community, but not all. The Eagle River Loop Road reconstruction project, currently in design and scheduled for construction in 2006, will widen Eagle River Loop Road, as well as provide pedestrian amenities from the Old Glenn Highway to Eagle River Road.

Rural areas of the community also lack pedestrian facilities. Most residents of rural areas are forced to walk on roadways or unimproved roadway shoulders to get to bus stops or other locations. According to the Areawide Trails Plan, the Old Glenn Highway from Eagle River to Peters Creek is particularly in need of a separated pedestrian/bicycle trail. The Old Glenn Highway also needs safe pedestrian crossings at the intersections with Eagle River Loop Road and at Chugiak Elementary School. Other critical needs include a separated pedestrian / bicycle trail along Eagle River Loop Road from the Old Glenn Highway and Eagle River Road and along North and South Birchwood Loop Roads. All of the above mentioned roadways serve as bus transit routes. Pedestrian facilities along these routes may, therefore, have the added advantage of increasing bus ridership.

The best opportunity to create a pedestrian oriented environment lies in the downtown commercial core of Eagle River. According to the Chugiak-Eagle River Comprehensive Plan, the commercial development concentrated along both sides of the Old Glenn Highway and extending to the west into the Regional Park Subdivision bordering Business Boulevard serves as the trade center for Chugiak-Eagle River. The areas adjacent to the commercial core also contain some of the highest residential densities of the area. Thus, the potential for pedestrian oriented shopping trips is consequently very high.

A Pedestrian and Bicycle Circulation Plan, one of the key elements of a May 2001 **Draft Eagle River Central Business District Revitalization Plan** prepared for the Municipality of Anchorage, was the product of community concerns and interest in creating better opportunities for pedestrians and cyclist in Eagle River. The Plan identifies gaps and deficiencies in the bicycle / pedestrian network for the study area, and makes recommendations for improvements. Specific locations and upgrades of sidewalks and paths are recommended for three districts of the CBD: the Town Core (Old Glenn Highway and Business Boulevard between Monte Road and Eagle River Loop Road), "South Gateway" (Old Glenn Highway, Artillery Road to Monte Road), and North Eagle River, (Old Glenn Highway, Eagle River Loop Road to the North Interchange).

While community interest was expressed in improving recreation opportunities and better links between community nodes, much concern was related to perceived safety, particularly along the Old Glenn Highway. Based on public input and a review of existing facilities and deficiencies, the plan recommends specific improvement projects. The goal is to achieve an interrelated walking / bicycling network that

- Improves safety and access
- Connects activity nodes (for example, parks, schools, retail businesses, the Boys and Girls Clubs, and the library)
- Creates a more "pedestrian friendly" CBD environment that better supports commercial and community activities
- Enhances recreation and tourism
- Increases opportunities for bike commuters
- Improves access for community members without vehicles, especially the young.

A key focus of the plan is to examine the need for additional crossing points on the Old Glenn Highway as a means of improving pedestrian safety and encouraging people to walk. Eleven projects are identified for inclusion in the Pedestrian/Bicycle Circulation Plan. Future project development for trails within the Circulation Plan's study area should reference and utilize the Plan's findings, where feasible, when it is approved.

B. Bicycle Facilities

The Chugiak-Eagle River area is currently served by two main bike trails. A bike trail paralleling the Glenn Highway from the Boniface Interchange in the Anchorage Bowl to North Birchwood forms the north-south backbone of the system. The Eagle River Road bike trail serves as the main east-west bike route and extends from the Old Glenn Highway to Pruess Road on the north side of the road. An extension of this bike trail provides a connection from the residential neighborhoods north of Eagle River Road to Gruening Junior High School, located south of Eagle River Road. Another private bike trail system was developed as a part of the Eaglewood Subdivision just west of Gruening Junior High School. However, this system does not connect to the Eagle River Road bike trail system. A public bike trail connects the Fire Lake Recreation Center to the Old Glenn Highway and downtown Eagle River.

The 1997 Areawide Trails Plan states that development of an areawide bike trail system is warranted by the number of persons now residing and projected to reside in Chugiak-Eagle

River. The bike trail system should serve both practical and recreational purposes and should be designed to provide links between homes and parks; parks and schools; and schools to homes. Furthermore, it states that the needs of each type of cyclist- the generalist, the commuter, and the racer- should be incorporated to create an effective and usable bike trail system.

The existing bicycle trail system, as described in the first paragraph, does not meet the objectives of the Areawide Trails Plan. The bicycle trail system in Chugiak-Eagle River lacks directness, completeness and convenience. With the exception of the bike route adjacent to the Glenn Highway, there are no recreational bicycle facilities of any substantial length in the Chugiak-Eagle River area. According to the Areawide Trails Plan, the following problems have been identified along the Glenn Highway trail: (1) the section between the North Eagle River Access Road and North Birchwood contains numerous breaks in the pavement and is not up to current standards for grade and width, (2) there is insufficient separation from the Glenn Highway at points between South Birchwood and North Birchwood exits which causes maintenance, safety and enjoyment problems, and (3) there are conflicts between bicyclists using the Glenn Highway trail and vehicles attempting to exit the landfill facility as well as vehicles turning left from Eagle River Loop Road onto the southbound ramp of the Glenn Highway.

The utilitarian bicycle needs of Chugiak-Eagle River residents are also not being met. Given the existing trail system, is it difficult for either children or adults to safely travel by bicycle from their homes to areas of commerce, transit, and education. The trail along the north side of Eagle River Road, which serves as a connection from the residential areas in the Eagle River Valley to local area schools and downtown Eagle River, lacks completeness and connectivity. The trail, which only extends to Pruess Road, crosses private driveways along its entire length. This creates potential conflicts as bicyclists are confronted with automobiles making turns across the bike trail. The bike trail on the east side of the Old Glenn Highway connecting the Fire Lake Elementary School and Fire Lake Recreation Center with northern Eagle River also lacks completeness and connectivity.

C. Pedestrian / Bicycle Recommendations

To implement the Trails Plan, approximately 300 projects included in the recommendations in the text of the Plan were considered and prioritized by the Trails Plan Review Group (TPRG) using 9 ranking criteria. Each project on the list was given a numerical ranking for each of the criteria and the top 50 trail projects were determined. The cost estimates are rough for planning purposes only, no limited design / engineering work was completed for most projects listed. Of the 50 projects listed, 14 are in the Chugiak – Eagle River. (See Appendix A: Top 50 Trail Projects, Areawide Trails Plan.) Several of the projects have been completed. Those remaining include:

- Coastal Trail – Mouth of Peters Creek Beach Lake Park to Eklutna
- Eagle River Greenbelt – connect to Hiland Road
- Eagle River Loop Road – Eagle River Road to Old Glenn Highway
- Eklutna Waterline – dedicate trail
- Fire Creek Trail

- Glenn Highway – Peters Creek to Mat-Su
- Hillside Trail – Chugack Rim
- North Birchwood Loop / Old Glenn Highway – North Birchwood Interchange to Loretta French Park
- Old Glenn Highway – Chugiak to Eagle River.

In addition to the specific projects listed above, trails and sidewalks along major roadways, as well as pedestrian access to schools, are and should continue to be a focus of transportation enhancements in Chugiak-Eagle River.

For this LRTP Update, the short-range recommendations include committed trail projects that are expected to be constructed within the next six years through the Transportation Improvement Program. Three stand-alone projects currently programmed for inclusion in the AMATS Transportation Improvement Program FY 2001-2003 are included in Appendix B under Transportation Enhancements. These include Eagle River Greenbelt Access and Pathway, Glenn Highway Trail Rehabilitation (Muldoon Road to North Birchwood Loop Road), and Glenn Highway Trailhead Improvements (at Thunderbird Falls, Peters Creek, and south Fork of Eagle River). Improvements to trails are also included in several of the roadway improvement projects listed: Old Glenn Highway Rehabilitation (Artillery Road to North Eagle River exit), Old Glenn Highway Reconstruction (North Eagle River exit to Peters Creek), and Eagle River Road Rehabilitation.

Future roadway improvements should reference the Areawide Trails Plan. Future roadway improvements for the urban core of Eagle River should reference and utilize, where feasible, findings of the Eagle River Central Business District Revitalization Plan, when it is approved.

CHAPTER 6: CONGESTION MANAGEMENT

I. CONGESTION MANAGEMENT SYSTEM - MUNICIPALITY OF ANCHORAGE

The Transportation Equity Act for the 21st Century (TEA-21) requires that each Transportation Management Area (TMA) with a population over 200,000 develop and implement a Congestion Management System (CMS). The Municipality of Anchorage, as the designated TMA, has the responsibility for developing the CMS in cooperation with the Alaska Department of Transportation and Public Facilities.

For air quality considerations, TEA-21 planning regulations require transportation planners to look at ways to change the number of vehicles using the transportation system, instead of simply adding more capacity (travel demand reduction measures). Specifically, 23 CFR 450.320 (b) states that "In Transportation Management Areas (TMA) designated as Nonattainment for ozone or carbon monoxide (includes the Municipality of Anchorage), federal funds may not be programmed for any project that will result in a significant increase in carrying capacity for single occupant vehicles (a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks) unless the project results from a congestion management system (CSM) meeting the requirements of 23 CFR part 500, subpart E."

TEA-21 regulations state, "Within a transportation management area, the transportation planning process shall include a congestion management system that provides for effective management of new and existing transportation facilities through the use of travel demand reduction and operational management strategies." The regulations further state that a CMS should have five main components:

1. Identification and Evaluation of Potential Strategies
2. Performance Measures
3. Data Collection of System Monitoring
4. Evaluation of the Effectiveness of Implemented Strategies
5. Implementation of Strategies

AMATS has a fully implemented Congestion Management System, which meets all of the above-mentioned requirements. AMATS initiated its Congestion Management Program with the publication and adoption of the **"Congestion Management Program" report in October 1994.** The report identified and recommended a set of over 50 potentially effective congestion management strategies for Anchorage to employ in meeting travel demands and minimizing congestion.

On March 27, 1998, AMATS adopted 16 performance measures as part of its Congestion Management System. When used in conjunction with the data collection and monitoring efforts, performance measures provide the basis for identifying the extent, severity and specific locations of congestion on a system-wide basis as well as evaluate the effectiveness of implemented actions.

A. Status of the System Report

The latest effort in the implementation of the Congestion Management System involved the publication of the Anchorage Congestion Management System "Status of the System Report" in September 2000. This report utilized the previously adopted 16 performance standards to conduct a comprehensive multi-modal data collection effort.

The information contained in the report has four primary uses:

- Identify the locations, magnitude, and nature of congestion in the Anchorage region
- Develop the "Status of the System Report" of 1998 conditions of the Anchorage transportation system to be used as a baseline database to analyze changes over time
- Evaluation of existing congestion management strategies as well as aid in the identification and implementation of the new strategies
- Identify potential ongoing transportation system monitoring programs for future data collection needs, data storage and maintenance needs, and level of service standards.

The Status of the System Report looked at the Municipality of Anchorage's road, transit, and pedestrian and bicycle system.

In assessing the road system, a total of 259 roadway segments, 30 intersections, and 9 travel corridors were evaluated. The Level of Service (LOS) for each roadway segment was calculated using a volume-to-capacity (V/C) ratio, a conventional level of service measure, which equates roadway demand to supply. Of the road segments evaluated for the morning peak period, most (94%) operated at LOS A or B. Only 16 roadway segments operated at LOS C, and none of these was located in the Chugiak-Eagle River area. During the evening peak period, again most segments operated at LOS A or B. One roadway segment operating at LOS C was located in the Chugiak-Eagle River area; the rest of the roadway segments analyzed in Chugiak-Eagle River operated at a level of service A or B.

A total of 30 intersections were identified and selected for analysis. The MOA Traffic Engineering Department provided volume turning movement, signal timing, and geometric data for these intersections. Two intersections in Eagle River were analyzed: Eagle River Loop and Eagle River Road, and Old Glenn Highway and Eagle River Loop. Both intersections performed at LOS C for all periods, with one exception. The intersection of Eagle River Loop and Eagle River Road performed at LOS D for average PM peak.

Travel time data was collected for nine corridors as part of this project. Travel time, considered by many as the best measure of system congestion, is measured as the amount of time required to transverse a segment or a complete route. Travel Corridor #2, Glenn Highway (Artillery Road Interchange to C Street) was the only corridor analyzed having segments in the Chugiak-Eagle River area. For the Glenn Highway, the most congested segments (below LOS C) were not in Chugiak-Eagle River, but the non-freeway segments eastbound in the Anchorage Bowl.

The results of the performance measure analysis reveals that the bus transit, carpooling, and vanpooling programs contribute to a substantial reduction in the number of vehicle miles traveled on the roadway system with a combined reduction of over 23 million vehicle miles

traveled per year. Of the three programs, vanpool is the newest and growing the fastest. The vanpool service to the Mat-Su Valley is experiencing particularly strong growth.

The transit performance measures point out several areas where improvements to the bus transit system might improve the transit mode share. Both the time between buses and the ratio of bus to automobile travel time performance measures indicate that bus service in Anchorage is well below the national average.

The Pedestrian Environmental Factors performance measure was designed to assess the quality of the pedestrian environment of Anchorage neighborhoods using criteria such as sidewalk availability, street connectivity, and topological barriers. The resulting composite scores show that much of Anchorage (with the exception of downtown and its surrounding neighborhoods) has a relatively poor pedestrian environment. This affects the performance of other transportation modes such as bus transit and carpooling that relies on walking to either access the mode or provide mobility once the destination is reached.

A total of 20 miles of paved bike trails currently exist in the Chugiak-Eagle River area. There are also a number of unpaved trails that are available for use by bicyclists. It should be noted that the number of miles of bicycle paths does not address the issue of connectivity. There may be important gaps in the pathway system.

Implementation of Strategies, as well as Evaluation of the Effectiveness of Implemented Strategies, is an on-going process. The analysis and findings contained in the "Status of the System Report" provide valuable insight into which strategies will do the most to solve Anchorage's congestion problem.

Based on the analysis conducted for each of the above performance measures, intersection level of service appears to be the key determinant of congestion in Anchorage, and is worse during the afternoon peak period, when workers are attempting to return home. As a result, some of the most effective non-operational congestion management strategies will involve demand management strategies that are aimed at reducing the number of single-occupancy vehicle commuter trips. These include carpool, vanpool and transit strategies, alternative work hours, telecommuting, and the voluntary trip reduction ordinance.

B. CMS Data Collection and Monitoring Recommendations

Transportation model results for this 2003 LRTP Update show higher levels of congestion for Chugiak-Eagle River than the 1998 baseline information gathered for the Status of the System Report. One roadway segment is currently operating at level of service D, and several are projected to be operating at D or worse in the PM peak by 2023 in the Chugiak-Eagle River area. (See Table 3). Transportation Model results also identify five intersections as overcapacity by 2023 in the Chugiak-Eagle River area **(see Map 3**), which includes the two studied for the Congestion Management System. In addition, model results indicate that the Glenn Highway, Hiland Road to Artillery Road, is currently operating at LOS D. Four segments of the Glenn Highway, from the Scale houses to South Birchwood Loop Road, are projected to operate at LOS D by 2023. (See Table 3).

A recommendation of this LRTP update is to continue to monitor the roadway segments and intersections in the Chugiak-Eagle River area which have been identified by the analysis in Chapter 4 as currently overcapacity, or projected to be overcapacity in the future (Table 3), as part of the ongoing Congestion Management System data collection and monitoring effort.

II. CONGESTION MANAGEMENT STRATEIGIES AND ROADWAY IMPROVEMENT NEEDS - CHUGIAK-EAGLE RIVER

According to Table 3, roadway segments within the Chugiak-Eagle River area projected to operate at congested levels by 2023 include:

- Glenn Highway – Scaleshouses to Hiland Road (LOS D)
- Glenn Highway – Hiland Road to Artillery Road (northbound) (LOS D)
- Glenn Highway – Artillery Road to N. Eagle River Access Road (LOS D)
- Glenn Highway – N. Eagle River Access Road to S. Birchwood Loop Road (LOS D)
- Eagle River Road – Crestview Lane to Greenhouse (LOS E)
- Eagle River Road – Old Glenn Highway to Chain of Rock (LOS D)
- Eagle River Loop Road – Coronado Street W. to Baranoff Avenue (LOS D).

These road segments very nearly match the list of roads identified in the 1996 Chugiak-Eagle River LRTP as being congested in the future. Eagle River Road is new to the list for this 2003 LRTP Update. The Old Glenn Highway does not re-appear on the list of future congested roadways in the Update. However, four of the five intersections identified as overcapacity in the future are located on the Old Glenn Highway from Artillery Road to the North Eagle River Access Road, within the Central Business District; the fifth is at the Eagle River Road intersection with Eagle River Loop Road.

In preparing the 1996 Plan, prior to making any recommendations regarding congested roadways, a thorough study of congestion management strategies was undertaken to determine how it might be possible to reduce the anticipated congestion to acceptable levels without adding lanes. Each of the six roadway segments projected as having congestion was analyzed in turn to determine if congestion management strategies could effectively reduce traffic volumes. The overall effectiveness of the strategies as well as the effectiveness of the most important individual strategies was assessed and a recommendation regarding needed improvements was made.

Several of the roadways identified as congested in the 1996 Plan and this 2003 LRTP Update have already been programmed for funding through the AMATS Transportation Improvement Program. This 2003 LRTP Update focuses on congested roadways not yet programmed for funding.

A. The Glenn Highway

The roadway segments along the Glenn Highway identified as being congested in the future in the 2003 LRTP Update are the same as those identified in the 1996 Plan. New projections show all four segments will perform at LOS D by 2023. The segment between Hiland Road to Artillery Road is currently operating at LOS D. One of the reasons why this segment of the

Glenn Highway is so congested is due to the steepness of the terrain in the area. Road segments traversing hilly terrain generally have less capacity than those traversing level terrain due to the fact that cars and trucks are forced to slow down.

The heaviest volume of traffic is on the six-lane segment of the Glenn Highway between the scalehouses and Hiland Road. A lesser amount of traffic is found on the segments between Artillery Road and South Birchwood Loop Road, but its capacity is not as great since it is only four lanes.

Traffic will have to be substantially reduced in order to avoid having to construct additional lanes on the Glenn Highway. Table 5 shows the greatest improvement needed is on the roadway segment between the Hiland Road and Artillery Road interchanges, which will require a reduction of 21,130 vehicles per day in order to achieve an LOS C, which is considered to be satisfactory. Percentages of AADT reduction needed for all four segments shown to provide a LOS C in 2023 are significantly higher than those reported in the 1996 Plan.

Table 5
Traffic Volume Reduction Needed to Achieve LOS C

Glenn Highway Road Segment	2023 AADT	AADT at LOS C	Reduction in AADT Needed to Achieve LOS C	% AADT Reduction Needed
Scalehouses to Hiland Rd.	64,700	48,576	16,124	24.9%
Hiland Rd.. to Artillery Rd.	50,100	28,970	21,130	42.2%
Artillery Rd. to N. Eagle River Access Rd.	43,400	32,384	11,016	25.4%
N. Eagle River Access Rd. to S. Birchwood Loop Rd.	40,600	32,384	8,216	20.2%

The Glenn Highway received the most intensive analysis of congestion management strategies of any roadway in Chugiak-Eagle River for the 1996 Plan. The study included the following specific strategies to reduce traffic demand:

- Commuter Rail Service from Anchorage to the Matanuska-Susitna Borough
- Increasing Bus Transit
- Increasing Carpooling
- Increasing the Vanpool Program
- Land Use Policies
- Bicycle and Pedestrian Improvements
- High Occupancy Vehicle (HOV) Lanes
- Reversible Lanes

Based on the results of the 1996 analysis, there did not appear to be any practical means of reducing the traffic volumes enough to avoid the need to add additional lane capacity on the four segments of the Glenn Highway projected to be congested in 20 years. Vanpooling and

carpooling appeared to have the most potential, but both would have had to be increased exponentially in order to make a dent in the congestion levels projected for the Glenn Highway.

This is still true today, with an even greater reduction in daily vehicle traffic (by 13,290 vehicles per day from Hiland Road to Artillery Road) required to achieve a LOS of C on the New Glenn during the PM peak. While the potential exists for some expansion of transit services (see Chapter 5), increasing transit usage to the levels required to avoid adding capacity to the Glenn Highway is not a realistic alternative given the low residential densities of this suburban / rural area. With a forecast ridership of 2,900 daily trips for Chugiak-Eagle River residents, which is more than six times the current level of ridership, and with more than 1/3 of these being intra-zonal (starting and ending in the area), expanded transit service will not address the need.

As stated in Chapter 5, carpooling and vanpooling have the most potential for reducing congestion between Chugiak-Eagle River and Anchorage. According to Anthony Downs (Stuck in Traffic, 1992), the number of solo drivers shifting to two persons per car would have to increase by 40% to achieve a reduction of 13.6% in peak hour trips. While the majority (approximately 80%) of Chugiak-Eagle River residents commuting to Anchorage drive alone, the average number of passengers per vehicle in Chugiak-Eagle River is higher than for the entire Municipality, and carpooling to work is also more popular. Thus, the potential may exist to expand the program within Chugiak-Eagle River. However, there are currently no vanpools that originate in the Chugiak/Eagle River area, and no vehicles are currently available for expansion of the vanpool program.

Any improvements in carpooling / vanpooling will need to include expanded participation by residents in the Mat-Su Valley, as nearly half of the traffic on the Glenn Highway in the study area is composed of Mat-Su Valley traffic. With the need to reduce traffic by 20.2% to 42.2% on the New Glenn, relying on expanded transit, carpool and vanpool for Chugiak-Eagle River alone to address the need is simply not feasible. Currently there are 15 vanpools serving the Mat-Su Valley. With each van carrying 12 persons, there are 252 fewer passenger trips per day on the Glenn Highway as a result of the program. With the need to reduce traffic by 13,290 trips per day on the Glenn Highway, an additional 1,107 vans would be required. Vanpooling can help, but it will not be the only answer.

The Share-a-Ride program will continue to be a critical alternative transportation mode. However, it is difficult to estimate ridership in the future based on past trends. The numbers of carpoolers/vanpoolers rose from 797 in 1988 to 2,176 in 1994, but dropped back to 973 by 2001.

Another alternative to the construction of additional lanes on the Glenn Highway, which was not included in the Congestion Management Program, involves the development of commuter rail service from the Mat-Su valley to downtown Anchorage. The 1996 Plan looked at three feasibility studies conducted on the subject since 1979, and based on their findings, concluded that a commuter rail system was not feasible at that time without a high level of subsidy.

The most recent study by Wilbur Smith Associates for ARRC, **South Central Rail Network and Commuter Rail Operational Plan, 2001,** considers four different scenarios, looks at projected ridership, capital and operating costs, and makes recommendations. The Study recommends a minimal level of service between Anchorage and the Mat-Su Valley beginning in 2005, which would include a stop near Eagle River located on Fort Richardson. The projected

ridership is 152,000, or average daily trips of 416, focused on peak commute period service. (The high level of service ridership for 2005 is estimated at 256,000, or average daily trips of 520, expanding to a projected level of 290,000 by 2015.)

The ARRC study estimates the Year 2005 fare box recovery rate for the minimum level of service between the Mat-Su Valley and Anchorage at 18.4%. By comparison, the fare box recovery rate for People Mover is about 22% to 24%. A few years ago it was 18%. The required Year 2005 subsidy would be about $2.7 million. However, ARRC is not planning to pursue commuter rail service independently. The study creates a blueprint for potential further actions by local and state officials to establish a viable and operational commuter rail system if they choose to do so, with participation by ARRC.

Adding a third lane in both directions on the Glenn Highway from Hiland Road to South Birchwood Loop Road appears to have the best potential for improving the operation of the roadway to LOS C. Level of service analyses need to be conducted for interchanges at Hiland Road and Artillery Road to determine if they are functioning efficiently. There is also a need for a fourth lane in both directions on the Glenn Highway between the scalehouses and Hiland Road. However, it does not make any sense to add a fourth lane to this segment unless it is extended all the way into Anchorage. Otherwise, a bottleneck will occur at the point where the number of lanes suddenly decreases.

Any recommendation to expand the section of the Glenn Highway between the scalehouses and Hiland Road should be coordinated with the next major revision of the 2001 Anchorage Bowl Long Range Transportation Plan (LRTP). The two long-range plans (Anchorage Bowl and Chugiak-Eagle River) should be considered at the same time, which would ensure that the recommendations regarding the Glenn Highway are consistent along its entire length.

B. The Old Glenn Highway and the Central Business District

Traffic along the Old Glenn Highway between Eagle River Road and North Birchwood Loop Road is expected to increase substantially in the next 20 years. As shown in Table 3, the roadway segments between Business Boulevard and North Eagle River Access Road are currently operating at LOS C. By 2023, the segments are expected to maintain LOS C, while the segment from North Eagle River Access Road to S. Birchwood Loop Road is expected to degrade from LOS A to C. While no segments along the Old Glenn are projected to operate below LOS C by 2023, four intersections are projected to be overcapacity by 2023. These include:

- Eagle River Road and the Old Glenn Highway
- Business Boulevard and the Old Glenn Highway
- Eagle River Loop Road and the Old Glenn Highway
- North Eagle River Access Road and the Old Glenn Highway.

Access management techniques are a group of TSM congestion management strategies, which have been demonstrated to be effective regardless of the type of trip, and particularly effective in improving traffic flow and reducing congestion on urban arterial streets such as the Old Glenn Highway. These include intersection lane re-striping and the provision of deceleration lanes for

turning traffic; the use of non-traversable medians; the spacing of median openings; signal timing, signal phasing adjustments, and signal progression strategies; the location and design of driveway (public and private) and intersection spacing; and interparcel circulation. A deficiency plan program should consider these types of improvements. However, given the increase in development and traffic in the CBD, access management techniques alone may not be sufficient to improve traffic flow.

Widening the Old Glenn Highway from four to six lanes would have little effect on the congestion problems along the Old Glenn Highway. The Old Glenn Highway between Eagle River Road and North Eagle River Access Road is classified as an urban arterial according to the definitions contained in the Highway Capacity Manual. As such, the capacity of this arterial is generally dominated by the capacity of its signalized intersections which in turn are dominated by the delay time at the intersections. Moreover, adding additional lanes would probably require the acquisition of additional right-of-way along the most important business district of the Chugiak-Eagle River area. The current right-of-way width is 100 feet. Two additional lanes may require 30 more feet of right-of-way, and would reduce space available for pedestrian facilities. However, there may be other roadway improvements, including new / alternate routes, which could relieve traffic volumes on the Old Glenn Highway. Specific intersections, such as the intersections of Eagle River Road and Monte Road with the Old Glenn Highway, that were identified as a concern to the community in the Draft CBD Revitalization Study, and which have not been addressed by programmed roadway projects, should be addressed.

More improvements to the local street network, including providing new roadway connections, are likely to be needed in the future to solve downtown core congestion at intersections. These may include a Coronado Drive connection to Business Boulevard, a west side frontage road to the Glenn Highway, a connection from this frontage road to Business Boulevard, or an extension of the Artillery Road exit ramp to Business Boulevard. Some of the solutions developed in the future could require additional right of way.

It is a recommendation of this 2003 LRTP Update to conduct a comprehensive circulation study for the entire road network within the downtown core of Eagle River. The study will include an assessment of pedestrian improvement needs, access management alternatives, the need for improved connectivity between the Old Glenn Highway and Business Boulevard, and traffic flow along the Old Glenn Highway, including the movement of freight vehicles. A rigorous alternatives analysis will also address improved connections between the Powder Reserve and the Central Business District (CBD). The proposed study should reference and utilize the suggestions of the Draft Eagle River CBD Revitalization Study.

The proposed study should reference and utilize the findings of the Draft Eagle River CBD Revitalization Study.

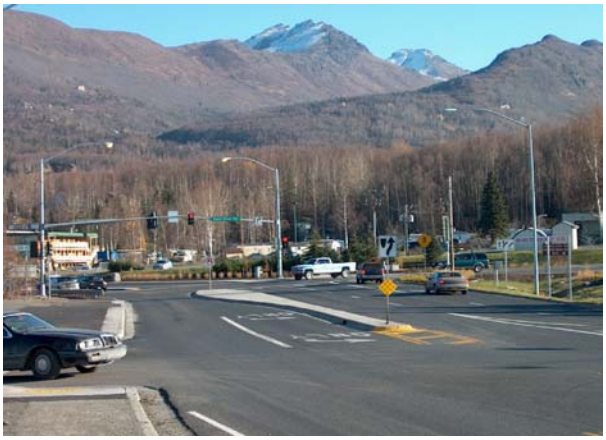
C. Eagle River Road

Traffic varies along the length of Eagle River Road. The western portion between VFW Road and Eagle River Loop Road handled an average of 7,623 vehicles in 2000, and 9,700 vehicles per day east of Eagle River Road; more easterly segments closer to the Eagle River Nature Center handled only 580 vehicles per day (1999). The transportation model projects that traffic

will increase in 2023 by 86.4% to 18,080 east of Eagle River Loop Road, (to LOS E from Crestview to Greenhouse), and by 32.5% to 10,100 west of Eagle River Road, (to LOS D from Old Glenn Highway to Chain of Rock.) In addition, the intersection of Eagle River Road and Eagle River Loop Road is identified as overcapacity by 2023.

The difference in traffic to the east and west of Eagle River Loop Road indicates that a significant amount of trips are occurring, and are projected to increase, on Eagle River Loop Road between downtown and the subdivisions to the east of Eagle River Loop Road. These trips are most likely shopping trips, and not home – work trip interchanges. Thus, as discussed earlier, transportation demand measures targeted towards work trips will probably not be very effective in addressing congestion for those trips. As with Eagle River Loop Road, transportation system improvements, which should be considered, include adding right turn and left turn pockets, and widening shoulders to expanding the existing roadway to 3 lanes, should also be considered to improve access and reduce congestion.

Congestion is also expected to worsen closer to the Glenn Highway. Traffic on the Glenn Highway between Artillery Road and the North Eagle River Access Road is projected at 43,400 for 2003; traffic between Hiland Road and Artillery Road in 2023 is projected to be 50,100. It might be assumed that much of the increase in peak hour traffic picked up at the Artillery Road Interchange is related to work trips by residents between Eagle River Road and Anchorage, although some of the traffic is probably also going downtown. Morning congestion on Eagle River Road as traffic approaches the Glenn Highway is exacerbated by limited storage capacity on the overpass bridge during left-turning movements. Transportation demand measures targeted at work trips should be considered.



Recent improvements: Artillery Road at Glenn Highway and Eagle River Road

CHAPTER 7: FREIGHT MOBILITY

Beginning in 1991, states and Metropolitan Planning Organizations (MPOs) were required to integrate freight into their overall planning effort. Specific factors to be considered included international border crossings and access to ports, airports, intermodal transportation facilities, and major freight distribution routes. Supporting technical efforts were required to provide an analysis of goods and services movement problem areas, as determined in cooperation with appropriate private sector involvement. Enhancement of efficient movement of freight was another factor to be explicitly considered. TEA 21 continued the importance of freight movement. AMATS has recognized freight mobility as an important element of transportation planning, and has more fully incorporated the consideration of freight into the planning process.

The 1997 update to the 1991 Anchorage Bowl Long-Range Transportation Plan (LRTP) included a general description of freight movement in Anchorage. Truck traffic and constraints to the movement of trucks were addressed, and the anticipated effects of planned improvements on some of the problems were identified. Acknowledging that a more comprehensive analysis of freight mobility issues needed to be done, AMATS staff met with representatives of the freight industry to discuss general freight mobility issues. From that meeting it was determined that a more systematic approach was needed to address this subject and a study was proposed. Results of that effort are presented in the June 2001 Freight Mobility Study for the Anchorage Metropolitan Area. The study serves as an informational resource for updating plans, and for educating the public about the freight industry in the Anchorage area.

The study describes characteristics of the major modes of freight movement in Anchorage – water, rail, air, and truck transport --focusing on the motor freight industry as the mode that ties all other modes together. An important correlation between land use, zoning and development with freight generation and distribution centers is explained and depicted on a map, along with major freight corridors used by motor carriers. The regulatory environment is described, including a discussion of Municipal and State regulations. Deficiencies are identified in the existing transportation system that impede the efficient flow of goods, and recommendations are presented for improvements and possible modifications in maintenance, facility design, regulations and capital projects to resolve constraints to freight mobility.

All of the freight routes considered as "constrained" by motor carriers are located within the Anchorage Bowl. While little descriptive information was gathered about freight movements in the Chugiak-Eagle River study area, carriers within the area identified no problems.

No major international airport, port facility, or intermodal transportation facilities are within the Chugiak-Eagle River study area. Thus, there are no identified intermodal transportation problems to be addressed in the Chugiak-Eagle River Transportation Plan.

Issues and recommendations presented were generated through: 1) a review of the Urban Goods Movement Study conducted in 1986 for the Municipality of Anchorage Planning Department, 2) a Driver's Survey conducted in the fall of 1998, 3) the Truck Model Carrier Survey also conducted in the fall of 1998, and 4) a work session with the Port of Anchorage and industry representatives to identify existing concerns on a map through a "dot exercise" to locate existing

issues and problems. Beyond current and planned improvements, the study makes recommendations intended to guide policy for freight, and comprehensive and strategic planning activities. Recommendations are grouped into six categories: policy, general, long and short-term capital improvements, maintenance, regulatory/enforcement, and further investigations.

While there are no intermodal transportation facilities within the Chugiak-Eagle River study area, the Glenn Highway is a major freight distribution route connecting Anchorage with a large part of Alaska, Canada, and the lower 48. According to Table 6, both the Glenn Highway and Old Glenn Highway accommodate some truck traffic, but the percentage of truck traffic has not increased since 1994 at the permanent traffic recorder stations. Although the Glenn Highway also connects Chugiak-Eagle River with the Anchorage International Airport, the Port of Anchorage, and Alaska Railroad depot in the Anchorage Bowl, the problems affecting freight distribution along the Chugiak-Eagle River truck routes are the same as those which affect general traffic. The recommendations contained in the 2003 LRTP Update pertaining to the Glenn Highway and the Old Glenn Highway (Downtown), which are primarily designed to solve auto-related congestion problems, would also have the effect of enhancing freight movement.

Table 6
Percent Traffic on Chugiak-Eagle River Roads

Roadway	Percent Single Trailer and Multi-Trailer Trucks
Glenn Hwy. north of Artillery Rd.	0.8 to 1.3
Glenn Hwy. north of Eklutna	1.0 to 2.0
Old Glenn Hwy. at Eagle River	1.3
Old Glenn Hwy. at Skyview	1.7 to 2.5
Eagle River Road east of Lee St.	0.4
Birchwood Loop at MP. 2.9	0.8

Source: "Central Region Traffic Volume Report," 1996, 1997, 1998, 1999, prepared by Alaska Department of Transportation and Public Facilities.

While carriers and drivers interviewed for the Freight Mobility Study did not identify any problems for freight mobility in the Chugiak/Eagle River area, residents and companies have since expressed concerns for gravel and concrete trucks pulling onto the Old Glenn Highway. Companies have expressed the need for a truck climbing lane addressing concentrated trucking near Klondike Concrete. While truck volumes do not currently warrant a truck climbing lane, any increase in truck traffic may warrant such a lane, and truck volumes should continue to be monitored. Improving Artillery Road and Hiland Road Interchanges to address oversize freight movements has been identified as a need, as well as identifying possible deficiencies along the entire length of the Glenn Highway for overheight / oversize trucks. The concern was also expressed that truck traffic along North Birchwood Loop Road may increase as a result of planned improvements to Birchwood Airport. Traffic should be monitored, particularly after the Birchwood Airport Master Plan is completed, to determine if the need for future improvements along North Birchwood Loop Road is indicated.

CHAPTER 8: INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent Transportation Systems (ITS) is a program designed to identify, analyze, and implement new and existing technologies and services aimed at improving safety, increasing efficiency, and reducing transportation costs in the movement of people and goods throughout the U.S. ITS represents the *integrated* application of advanced information, electronic, communications, and other technologies to better manage surface transportation systems, facilities, and resources.

TEA-21 mandated the integration of ITS into the transportation planning process. To ensure consistent deployment of ITS, Metropolitan Planning Organizations are required to include an ITS element in their Long Range Transportation Plans consistent with the National ITS Architecture (plan), and the architecture developed by their State. The goal is to mainstream ITS into transportation planning, either as individual projects, or as elements of proposed transportation improvement projects.

The Alaska Department of Transportation and Public Facilities (ADOT&PF) is nearing completion of its Statewide Deployment Strategy for ITS. The State's goals for the Alaska Intelligent Transportation System (called "I-Ways") are

- to make travel safer, more efficient, and more convenient, and
- to improve road, sea, and air way transportation by applying integrated technologies and information systems.

Real-time traveler information will be available to the public on the internet, including road weather conditions, road construction or maintenance activities, and the location of Alaska Marine Highway System (AMHS) vessels. I-WAYS projects include weather stations along state highways to collect real-time road weather information. One of these sites is located in Eagle River, south of the Artillery Road overpass. Images are drawn every ½ hour. These road weather condition images are now available for viewing at ADOT&PF's Road Weather Information System (RWIS) website. Travelers will also have more information to make informed trip planning decisions by clicking onto Travel in the Know. This site, currently under development, will offer real-time road condition reports, and information on accidents and alerts.

ADOT&PF is also using ITS applications to make commercial vehicles operations more efficient. Instrumented weigh stations will help commercial vehicles which meet weight, safety and security requirements to move faster through check points. The Alaska Railroad Corporation is also investigating Positive Train Control, another ITS application, to improve scheduling and tracking of trains and loads, including hazardous materials.

In December 2000, AMATS received two grants to develop the MPO regional ITS architecture. The first grant was for a short-term project, with assistance from the State's ITS contractor, to identify and interview agencies, groups, and individual stakeholders that have ITS involvement within the Municipality of Anchorage. Information gained from these interviews served as input to a draft MOA ITS Architecture (plan) document, currently under development. The ITS Architecture will 1) identify existing ITS applications within the Municipality; 2) identify which informational or operational needs can reasonably be met by ITS technologies, and 3) offer preliminary recommendations for new ITS strategies. Grant funds have also been used to

provide National Highway Institute training courses on ITS to educate stakeholders from various agencies about ITS technologies.

The draft MPO Regional ITS Architecture and draft ITS Implementation Plan will be completed by the spring of 2003.

CHAPTER 9: EMERGENCY RESPONSE/PUBLIC SAFETY

I. ITS RELATED ACTIVITIES

Needs identified during stakeholder interviews for development of the Anchorage ITS Architecture indicate strong support/need for several activities which will directly enhance MOA's ability to respond to security threats, terrorism, and emergencies.

One enabling ITS technology identified as a need is the development of an *integrated* Geographic Information Systems (GIS) Transportation Network. ADOT&PF and the Federal Highway Administration (FHWA) have granted federal ITS funding to the Municipality of Anchorage for a project that will create a municipal-wide integrated GIS Transportation Network, and will serve as the foundation for implementing ITS projects under development statewide.

The integrated GIS Transportation Network will support functions critical to emergency services and homeland security including:

- GPS dispatch for fire, police and street maintenance;
- Signal priority for emergency and public transit vehicles;
- Hazardous materials (HAZMAT) tracking;
- Near real-time reporting of road condition and closure information critical for evacuation routing in the event of a disaster; and
- Coordinated incident management.

The integrated GIS Network would also serve as an enabling technology for the Municipality of Anchorage to participate in the Alaska Department of Transportation and Public Facilities (ADOT&PF's) Advanced Traveler Information System, essentially a clearinghouse for information collection, multi-agency coordination via a secure intra-net, and public dissemination of transportation related information via a public website. The end product will be a superior traveler information website providing as near real-time information as possible about road conditions and road closures (see Chapter 8.)

II. NEIGHBORHOOD CONNECTIVITY

The guiding policies for development of the Chugiak-Eagle River LRTP do not specifically address emergency response / public safety. The policy most directly relevant is the Connectivity Policy, which is strengthened in this LRTP Update from the perspective of emergency response, principally fire and medical, and for purposes of evacuation routes in the event of a disaster.

Connectivity between neighborhoods ensures a continuous network of streets. This disperses traffic, reduces the volume of cars on any one street in the network, and eliminates circuitous vehicular trips. Of prime consideration is the need to provide adequate circulation for emergency and public service vehicles. Concerns expressed

during the development of the 2003 LRTP Update point to the need to identify problem locations for emergency responders, including gaps and missing links in existing routes, prioritize the needs, and develop a list of recommendations specifically targeted for improving emergency response. Where these connections affect streets designated collector and above, the Chugiak-Eagle River LRTP and Official Streets and Highways Plan Map should be amended. For future needs, it is critical and in the best interest of the community as a whole, to ensure during the review of private development proposals, particularly subdivision and master plans for Planned Communities, that neighborhood connectivity be required.

CHAPTER 10: RECOMMENDATIONS

I. ROADWAY IMPROVEMENT RECOMMENDATIONS

For the 1996 LRTP, the traffic model for Chugiak-Eagle River identified future roadway (NHS and Non-NHS) congestion problems from which a list of roadway improvement projects was developed. The Alaska Department of Transportation and Public Facilities is responsible for developing the National Highway System within Alaska, and has primary authority for setting project priorities. Thus, while the 1996 LRTP made recommendations for improvements to the NHS, the Community Advisory Committee did not rank those projects.

In addition to the recommended improvements for congested roadways, the Community Advisory Committee identified seven non-NHS roadways which need to be upgraded by either expanding the width, adding shoulders, or making other operational improvements. One of the recommended roadway improvements did not fall into either category. Homestead Road, which was recommended for construction between Oberg Road and Voyles Road, was a new roadway segment project identified at that time needed to improve east-west circulation in the North Peters Creek area, and to improve emergency response for the area.

In order to ensure that the most important Non-NHS projects could be funded, the Citizen Advisory Committee prioritized the 10 non-NHS eligible roadway projects based on a set of eight criteria, which reflected the transportation plan goals as well as the planning requirements in effect at that time. The non-congested roadway improvement projects included:

Recent Improvements: Old Glenn Highway

- Old Glenn Hwy. Improvements - North Eagle River Access Rd. to the Peters Creek Interchange (Rural)
- Eagle River Road Improvements - Mile 6 to the Eagle River Nature Center
- Business Boulevard Improvements
- Hiland Road Improvements - Mile 1 to end of road
- North Birchwood Loop Rd. Improvements
- South Birchwood Loop Rd. Improvements
- Eklutna Lake Rd. Improvements
- Homestead Rd. Improvements - Oberg Rd.. to Voyles Blvd.

Table 7 provides the current status of the Non-NHS roadway recommendations from the 1996 LRTP.

TABLE 7
1996 CHUGIAK – EAGLE RIVER LRTP
MAJOR NON-NHS ROADWAY RECOMMENDATIONS
STATUS AS OF JUNE 2002

1996 Roadway Projects	Rank	Status*
Eagle River Loop Rd. Improvements	1	Included in FY 2001-03 TIP, project # 12 Noise Barrier Analysis complete.
Old Glenn Hwy. Improvements (Downtown)	2	See ** Below
Old Glenn Hwy. Improvements (Rural)	3	Included in FY 2001-03 TIP, project # 16 ROW, Utilities ongoing
Eagle River Rd. Improvements	4	Included in FY 2001-03 TIP, project # 23 ROW mapping. Need survey info to prepare CE.
Business Blvd. Improvements	5	Included in FY 2001-03 TIP, project # 2a; (combined with Enhancement Project #1a) Essentially complete.
Hiland Road Improvements	6	Nominated for, but not included in FY 2001-2003 TIP (ranked #32 of 62 projects nominated; 29 were selected)
North Birchwood Loop Rd. Improvements	7	Not nominated for inclusion in FY 2001-2003 TIP
South Birchwood Loop Rd. Improvements	8	Not nominated for inclusion in FY 2001-2003 TIP
Eklutna Lake Rd. Improvements	9	Not nominated for inclusion in FY 2001-2003 TIP***
Homestead Rd. Improvements	10	Not nominated for inclusion in FY 2001-2003 TIP***

*Note: for projects 1, 3, 4 and 5, please see Appendix A for more detailed project status information.

**Note: Part of the needs identified in the 1996 LRTP are being addressed in the Old Glenn Highway repaving project (See Appendix A.) Access management will have to be analyzed during a downtown circulation study.

***Note: While the Community Advisory Committee recommended projects 9 and 10, these two projects were not part of the financially constrained recommendations in the 1996 LRTP. Cumulative costs for projects 9 and 10 were believed to exceed the projected amount of funding available in the following 20 years ($35,880,000).

Based on results of the Transportation Model for the 2003 LRTP Update, one project was added to the 1996 list of Non-NHS roadway improvement recommendations (Eagle River Road from Mile Point 0 to approximately Greenhouse Street.) Also added to the 1996 list of recommendations is a project to restore / rehabilitate the Eklutna River Bridge on the Old Glenn Highway. Due to structural deterioration, weight limits were imposed on the bridge in 1996, and the need to rehabilitate the bridge was identified from an inspection in October, 1999.

Recommended roadway improvements shown below are in priority order. Projects 1-4 are programmed for funding in the 2001-2003 Transportation Improvement Program. Ranking of projects 5-10 followed a public review and comment period, and is based on each project's relative merits according to approved AMATS Transportation Improvement Program (TIP) Roadway Ranking Criteria.

The following is a description of the scope and location of all the major road improvement needs identified in the previous chapters (congestion-related as well as non-congestion-related). Trail and sidewalk improvements are recommended in conjunction with many of these roadway projects and are discussed in more detail in Chapter 6.
Map 4 also provides information on the location and scope of these road improvement needs. It should be noted that all of the projects might be modified depending on the results of detailed engineering analysis.

Non – NHS (in Priority Order):

1. Eagle River Loop Road Improvements

Description: Reconstruct 1.88 miles of Eagle River Loop Road from the Old Glenn Highway to Eagle River Road. The scope of the project includes improved shoulders, turn lanes, pedestrian amenities, lighting and landscaping.

2. Eklutna River Bridge, Old Glenn Highway, Improvements

Description: Rehabilitate or replace the existing bridge. A new structure would have a design life of 50+ years and would include two travel lanes, shoulders, one pathway, and railing.

3. Old Glenn Highway Improvements (Rural)

Description: Reconstruct 7.57 miles of roadway from North Eagle River Access Road to the Peters Creek Interchange with the Glenn Highway to current standards. This project will evaluate the existing alignment, pavement conditions, shoulders, and pedestrian facilities. A portion of this project was broken out to expedite reconstruction between NERI and Fire Lake Elementary School access. This section will include a 3-lane cross section, pedestrian accommodations, and curb and gutter on one side.

4. Eagle River Road Improvements

Description: Reconstruct 7.3 miles of Eagle River Road from Mile 5.3 to Mile Point 12.6 at the Eagle River Nature Center. Improvements may include adding shoulders for pedestrians and bicycles, improving visibility, and repaving.

5. Hiland Road Improvements

Description: Reconstruct 7.32 miles of the existing two-lane Hiland Road from Mile 1 to end of road to current standards. Improvements may include widening roadway, adding shoulders, improving visibility, reducing grades, and possible trails, where practical and feasible. A possible realignment of the existing roadbed between Riverview Estates Subdivision and Eagle River Loop Road may also be a part of the project depending on the outcome of the proposed alternative route study. (Note: The Hiland Road corridor should be studied as a whole, with the intent that an appropriate first project that meets the greatest needs of the public shall be identified.)

6. Homestead Road Improvements

Description: Construct 0.66 miles of new collector roadway from Oberg Drive to Voyles Boulevard. The project may include construction of trail.

7. Eagle River Road Improvements

Description: Reconstruct approximately 6 miles of Eagle River Road from Mile Point 0 to the vicinity of Greenhouse Road to provide improved access and reduce congestion. This project may expand the existing roadway to 3 lanes with turn pockets, widened shoulders, and improved pedestrian and bicycle connections, and reconstruct trail and extend to Eagle River Lane or Greenhouse Road. (Project will be ranked with other Non-NHS projects after the formal public review and comment period.)

8. North Birchwood Loop / Birchwood Spur Road Improvements

Description: Reconstruct 2.98 miles of roadway from the Old Glenn Highway to the Birchwood Airport to current standards. Improvements may include widening roadway, adding shoulders, and possible trails, where practical and feasible.

9. Eklutna Lake Road Improvements

Description: Reconstruct 10 miles of roadway from the Old Glenn Highway to Eklutna Lake to current standards. Improvements may include paving, widening narrow roadway and shoulders, improving visibility, and possible trails, where practical and feasible.

10. South Birchwood Loop Road Improvements

Description: Reconstruct 5.05 miles of roadway from the Old Glenn Highway to North Birchwood Loop Road to current standards. Improvements may include widening roadway, adding shoulders, and possible trails, where practical and feasible.

NHS (Not in Priority Order):

Glenn Highway / Hiland Road Interchange

Description: Conduct level of service analysis to identify possible deficiencies of existing three-lane bridge portion of the interchange. Reconstruct interchange as required to current standards.

Glenn Highway / Artillery Road Interchange

Description: Conduct level of service analysis to identify possible deficiencies of existing interchange configuration. Reconstruct interchange as required to current standards.

Glenn Highway Improvements (Hiland Road to Artillery Road)

Description: Expand 1.4 miles of freeway to six lanes. Improvements may include construction of a new bridge over Eagle River and interchange improvements at Hiland Road.

Glenn Highway Improvements (Artillery Road to North Eagle River Access Road)

Description: Reconstruct 2.19 miles of freeway from four to six lanes. Improvements may include upgrades to the Artillery Road Interchange.

Glenn Highway Improvements (North Eagle River Access Road to South Birchwood Loop Road)

Description: Reconstruct 2.03 miles of freeway from four to six lanes. No interchange improvements are anticipated.

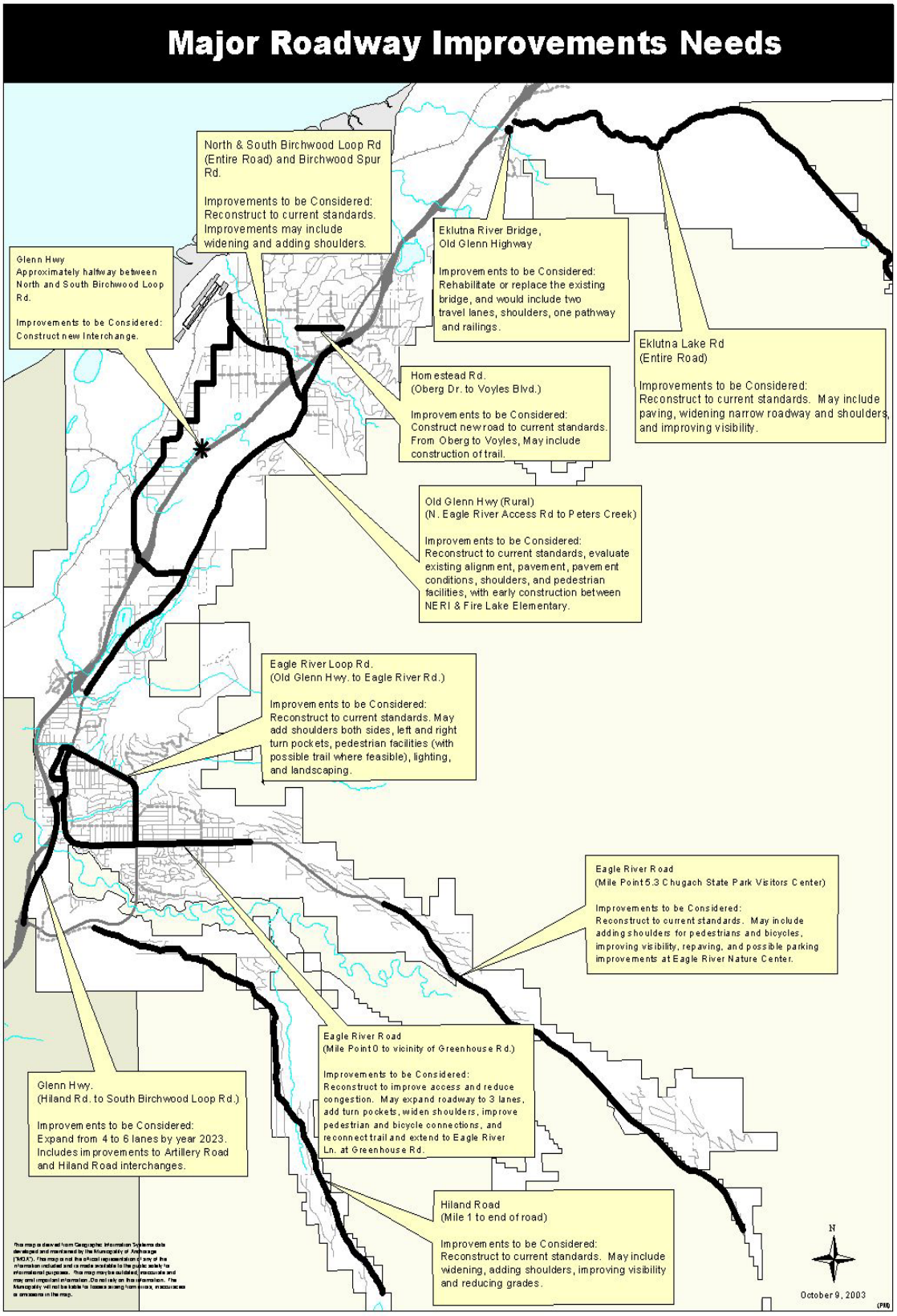
Glenn Highway / Proposed New Interchange (approximately midway between North and South Birchwood Loop Roads)

Description: Project would study best location, spacing, and most cost-effective site for construction of a new interchange.

Recommended for Study:

Glenn Highway Frontage Roads Analysis (Hiland Road to Muldoon Road)

Description: While this portion of the Glenn Highway is outside the Chugiak/Eagle River study area, operation of this roadway segment is of concern to Chugiak/Eagle River residents, particularly in the event of major accidents. Study would review frontage roads for emergency response purposes.


Major Roadway Improvements Needs
North & South Birchwood Loop Rd (Entire Road) and Birchwood Spur Rd.
Improvements to be Considered: Reconstruct to current standards. Improvements may include widening and adding shoulders.
Glenn Hwy Approximately halfway between North and South Birchwood Loop Rd.
Improvements to be Considered: Construct new Interchange.
Eklutna River Bridge, Old Glenn Highway
Improvements to be Considered: Rehabilitate or replace the existing bridge, and would include two travel lanes, shoulders, one pathway and railings.
Eklutna Lake Rd (Entire Road)
Improvements to be Considered: Reconstruct to current standards. May include paving, widening narrow roadway and shoulders, and improving visibility.
Homestead Rd. (Oberg Dr. to Voyles Blvd.)
Improvements to be Considered: Construct new road to current standards. From Oberg to Voyles, May include construction of trail.
Old Glenn Hwy (Rural) (N. Eagle River Access Rd to Peters Creek)
Improvements to be Considered: Reconstruct to current standards, evaluate existing alignment, pavement, pavement conditions, shoulders, and pedestrian facilities, with early construction between NERI & Fire Lake Elementary.
Eagle River Loop Rd. (Old Glenn Hwy. to Eagle River Rd.)
Improvements to be Considered: Reconstruct to current standards. May add shoulders both sides, left and right turn pockets, pedestrian facilities (with possible trail where feasible), lighting, and landscaping.
Eagle River Road (Mile Point 5.3 Chugach State Park Visitors Center)
Improvements to be Considered: Reconstruct to current standards. May include adding shoulders for pedestrians and bicycles, improving visibility, repaving, and possible parking improvements at Eagle River Nature Center.
Eagle River Road (Mile Point 0 to vicinity of Greenhouse Rd.)
Improvements to be Considered: Reconstruct to improve access and reduce congestion. May expand roadway to 3 lanes, add turn pockets, widen shoulders, improve pedestrian and bicycle connections, and reconnect trail and extend to Eagle River Ln. at Greenhouse Rd.
Glenn Hwy. (Hiland Rd. to South Birchwood Loop Rd.)
Improvements to be Considered: Expand from 4 to 6 lanes by year 2023. Includes improvements to Artillery Road and Hiland Road interchanges.
Hiland Road (Mile 1 to end of road)
Improvements to be Considered: Reconstruct to current standards. May include widening, adding shoulders, improving visibility and reducing grades.
N
October 9, 2003

Map 4

II. PUBLIC TRANSPORTATION RECOMMENDATIONS

From Chapter 5, the following recommendations for the Chugiak-Eagle River area are made. These recommendations are provided for concept only. Additional analysis of the Chugiak-Eagle River area is needed in order to finalize the long-range public transportation recommendations.

1. Implement convenient public transportation service that combines the predictability of a fixed route system with the accessibility of a dial-a-ride/community circulator system.
2. Maintain large bus service, oriented to the Glenn Highway, to provide transportation for area residents into Anchorage.
3. Provide connectivity between Chugiak-Eagle River and destinations in Anchorage other than downtown.
4. Explore expanding People Mover service to serve the high-density residential development in Tract A, Powder Reserve when development is nearing completion, either through park & ride or through community circulator service.
5. Explore additional Share-A-Ride program alternatives, particularly the vanpool program in the Chugiak-Eagle River area.

III. TRANSPORTATION ENHANCEMENTS RECOMMENDATIONS

The 1997 Areawide Trails Plan lists the top 50 trail projects that are to be implemented within the next 20 years. Among the top 50 trail projects listed, fourteen are located in the study area for the Chugiak-Eagle River LRTP. Several have already been completed. For purposes of this LRTP Update, recommendations for individual trails projects include those listed in the Trails Plan which have not yet been completed. These include:

Coastal Trail - Mouth of Peters Creek Beach Lake Park to Eklutna
Eagle River Greenbelt – connect to Hiland Road
Eagle River Loop Road – Eagle River Road to Old Glenn Highway
Eklutna Waterline – dedicate trail
Fire Creek Trail
Glenn Highway- Peters Creek to Mat-Su
Hillside Trail – Chugach Rim
North Birchwood Loop / Old Glenn Highway – North Birchwood interchange to Loretta French Park
Old Glenn Highway: Chugiak to Eagle River

For this LRTP Update, the short-range recommendations include committed trail projects that are expected to be constructed within the next six years through the Transportation Improvement Program. Three stand-alone projects currently programmed for inclusion in the AMATS Transportation Improvement Program FY 2001-2003 are included in Appendix B under Transportation Enhancements. These include Eagle River Greenbelt Access and Pathway, Glenn Highway Trail Rehabilitation (Muldoon Road to North

Birchwood Loop Road), and Glenn Highway Trailhead Improvements (at Thunderbird Falls, Peters Creek, and south Fork of Eagle River). Improvements to trails are also included in several of the roadway improvement projects listed, including Old Glenn Highway Rehabilitation (Artillery Road to North Eagle River exit), and Old Glenn Highway Reconstruction (North Eagle River exit to Peters Creek.)

In addition to the specific projects listed above, trails and sidewalks along major roadways, as well as pedestrian access to schools, are and should continue to be a focus of transportation enhancements in Chugiak-Eagle River.

The Anchorage Area Trails Plan is a guide and the recommendations of that plan serve as a source for trail and pedestrian improvements in the AMATS area. Projects developed in the Eagle River urban core should reference and utilize, where feasible, findings of the Central Business District Revitalization Plan, when it is approved. The locations of trails / pedestrian accommodations on the Areawide Trails Plan maps are approximate, and are subject to available right-of-way, project budgets, terrain and other constraining factors. Recommendations will be analyzed for feasibility and suitability as projects are developed.

IV. CONGESTION MANAGEMENT RECOMMENDATIONS

A recommendation of this LRTP update is to continue to monitor the roadway segments and intersections in the Chugiak-Eagle River area which have been identified by the analysis in Chapter 4 as currently overcapacity, or projected to be overcapacity in the future (Table 3), as part of the ongoing Congestion Management System data collection and monitoring effort.

V. EMERGENCY MANAGEMENT RECOMMENDATIONS

Concerns expressed during the development of the 2003 LRTP Update point to the need to identify problem locations for emergency responders, including gaps and missing links in existing routes, prioritize the needs, and develop a list of recommendations specifically targeted for improving emergency response. Where these connections affect streets designated collector and above, the Chugiak-Eagle River LRTP and Official Streets and Highways Plan Map should be amended. For future needs, it is critical and in the best interest of the community as a whole, to ensure during the review of private development proposals, particularly subdivision and master plans for Planned Communities, that neighborhood connectivity be required.

VI. FREIGHT MOBILITY RECOMMENDATIONS

Truck volumes on the Old Glenn Highway near Klondike Concrete should continue to be monitored for increases which might indicate the need to add a truck climbing lane. Artillery Road and Hiland Road Interchanges, as well as the entire length of the Glenn highway, should be analyzed to address oversize freight movements. Traffic volumes along North Birchwood Loop Road should be monitored, particularly after the Birchwood Airport Master Plan is completed, which may indicate future needed

improvements along North Birchwood Loop Road. Eagle River should continue to be included in future data collection and monitoring efforts concerning movement of freight vehicles. The proposed comprehensive CBD circulation study should also address the movement of freight vehicles.

VII. RECOMMENDATIONS FOR FURTHER STUDY: CBD CIRCULATION

It is a recommendation of this 2003 LRTP Update to conduct a comprehensive circulation study for the entire road network within the downtown core of Eagle River. The study will include an assessment of pedestrian improvement needs, access management alternatives, the need for improved connectivity between the Old Glenn Highway and Business Boulevard, and traffic flow along the Old Glenn Highway, including the movement of freight vehicles. A rigorous alternatives analysis will also address improved connections between the Powder Reserve and the Central Business District (CBD). The proposed study should reference and utilize, where feasible, the findings of the Draft Eagle River CBD Revitalization Study.

CHAPTER 11: FINANCIAL PLAN

According to TEA-21 planning regulations, all transportation plans must include a financial plan that demonstrates the consistency of proposed transportation investments with already available and projected sources of revenue. The financial plan must compare the estimated revenue from existing and proposed funding sources that can reasonably be expected to be available for transportation uses, and the estimated costs of constructing, maintaining and operating the total (existing plus planned) transportation system over the period of the plan.

The Chugiak-Eagle River Long-Range Transportation Plan identifies roadway, alternative mode, and trail improvement needs for the next 20 years. The following contains a discussion of the feasibility of funding the needs identified in the LRTP Update.

I. ROADWAY IMPROVEMENTS

Whether or not an individual roadway project is likely to be funded in the next 20 years depends partly on which source of money it is eligible to receive. The largest pot of money comes from the federal government via TEA-21. This is not a uniform block of money, however. TEA-21 funding is generally divided into two parts: National Highways System and Non-National Highways System. The other major source of funding for roadways is state and local funding. Each funding source has its own requirements, limitations, and applicable uses as described below.

A. National Highway System Funding

The purpose of the National Highway System (NHS) is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. The Glenn Highway is the only roadway within Chugiak-Eagle River, which is currently designated as an NHS facility.

Following is a list of all of the NHS projects currently listed in the 2001 Anchorage Bowl Long-Range Transportation Plan, which includes the Glenn Highway improvements from Hiland Road to South Birchwood Loop Road recommended in the 1996 Plan:

- Glenn Highway – Gambell Street to McCarrey Street
- Seward Highway (20th Avenue to Rabbit Creek Road)
- Minnesota Drive Northbound (26th Avenue to 16th Avenue)
- International Airport Road at Postmark Drive Interchange
- “C” Street at O’Malley Road Interchange
- Old Seward Highway at O’Malley Road Overcrossing and New Seward Highway at O’Malley Road interchange
- Glenn Highway – Hiland Road to South Birchwood Loop Road
- Port Access (Improve connections to the Port of Anchorage)

Total cost of the NHS projects recommended in the Anchorage Bowl LRTP was $361.84 million. (The cost estimate for the Glenn Highway, Hiland Road to South Birchwood Loop Road, was using 1996 dollars, and did not include the new proposed interchange between North and South Birchwood Loop Roads.)

There is also a substantial amount of rehabilitation and repaving costs associated with the upkeep of the National Highway System. The 2001 Anchorage Bowl LRTP estimated that an average of $5.8 million per year would be spent on NHS rehabilitation projects, for a total cost over the 23-year planning horizon for the Anchorage Bowl LRTP was estimated to be $495.24 million ($113.4 million for rehabilitation projects, and $361.84 million for new construction projects identified in both LRTPs at that time.)

Whether or not these needs can be met depends entirely on the amount of NHS funding which can reasonably be expected to be available for use within the Municipality of Anchorage from 2003 to 2023. According to Table 7, the Municipality of Anchorage received an average of $25.7 million per year between 1985 and 2000. If this trend continues, then approximately $538.7 million may be available to fund NHS projects between 2003 and 2023. This appears to be enough to cover the $495.24 million cost of the system over that same period, even including the proposed new interchange for the New Glenn in the Chugiak-Eagle River area.

Table 8
Municipality of Anchorage
Federal Highway Program - Net Obligations

Year	NHS	Non-NHS	Total Anchorage
1981	$36,672,000	$7,372,000	$44,044,000
1982	$13,780,000	$9,547,000	$23,327,000
1983	$55,906,000	$14,538,000	$70,444,000
1984	-$1,951,000	$35,453,000	$33,502,000
1985	$21,820,000	$42,326,000	$64,146,000
1986	$20,000,000	$21,300,000	$41,300,000
1987	$44,400,000	$16,800,000	$61,200,000
1988	$1,300,000	$44,300,000	$45,600,000
1989	$18,000,000	$27,000,000	$45,000,000
1990	$45,339,209	$20,450,556	$65,789,765
1991	$7,942,487	$20,011,500	$27,953,987
1992	$48,429,487	$9,072,832	$57,502,319
1993	$38,461,400	$8,713,900	$47,175,300
1994	$10,019,300	$19,410,000	$29,429,300
1995	$22,968,143	$18,013,787	$40,981,930
1996	$12,015,305	$21,056,291	$33,071,596
1997	$31,220,444	$22,519,060	$53,739,504
1998	$35,290,440	$24,706,537	$59,996,977
1999	$34,785,276	$20,177,234	$54,962,510
2000	$17,244,262	$45,529,700	$961,940,150
Total	$513,642,753	$448,297,397	$961,940,150
Average	$25,682,137	$22,414,870	$48,097,008

B. Federal Funding (Non-NHS Tea-21)

Federal non-National Highway System funding can be used for improvements to all other roadways not listed in the National Highway System. In the past, this source of funding has been used primarily to fund arterial roadway improvements. There have been a few exceptions, however, where non-NHS funds have been used for collector street improvements. This may be the best source of funding for the arterial and collector street improvements needed in Chugiak-Eagle River. All of the major roadway projects listed in Chapter 10, with the exception of the Glenn Highway projects, are eligible for non-NHS funding.

The 2001 Anchorage Bowl LRTP financial plan estimated, if Anchorage maintained its historic funding levels, that Anchorage's share would be about $531 million from 2001 to 2023. Non-NHS funding needs from 2001 to 2023, which included Chugiak-Eagle River, were estimated at $666.083 million for Safety, Roadway Rehabilitation, Enhancements, CMAQ, Chugiak-Eagle River Roadways, and Anchorage Bowl Roadways. (Chugiak-Eagle River Roadway needs were estimated using the amount

shown in the 1996 LRTP of $36 million for 20 years.) Remaining funds needed for the two LRTPs would come from State and local sources. Recently the Alaska Department of Transportation and Public Facilities revised the cost allocation formula, which determines how much non-NHS federal money each area within Alaska will receive. It is anticipated that an additional $10 million per year will be available to the Municipality of Anchorage.

Table 9 shows the current non-NHS roadway improvement projects recommended for Chugiak-Eagle River, from Chapter 10, with cost estimates. Projects 1 through 4 are currently programmed for funding, and are included in the 2001-2003 AMATS Transportation Improvement Program. Because cost estimates for these improvements, particularly for Eagle River Loop Road, have increased substantially over the 1996 estimate, the cumulative cost estimate for these four projects alone is $40.7 million. Fortunately, with the additional $10 million per year soon to be available to the Municipality of Anchorage (depending on continued federal funding at historic levels), there should be plenty of funding available for all of the projects shown in Table 9 for Chugiak-Eagle River.

Table 9
Non-NHS Funded Projects*

Roadway Project	Cost	Cumulative Cost	Rank
Eagle River Loop Rd. Improvements	$15,300,000	$15,300,000	1
Eklutna River Bridge Rehabilitation	$4,500,000	$19,800,000	2
Old Glenn Hwy. Improvements (Rural)	$12,367,000	$32,167,000	3
Eagle River Rd. Improvements MP 5.3 to MP 12.6, Eagle River Nature Center	$9,100,000	$41,267,000	4
Hiland Road Improvements**	$23,566,000	$64,833,000	5
Homestead Rd. Improvements	$2,400,000	$67,233,000	6
Eagle River Rd. Improvements MP 0 to vicinity of Greenhouse Road	$12,000,000	$79,233,000	7
North Birchwood Loop Rd. Improvements	$6,350,000	$85,583,000	8
Eklutna Lake Rd. Improvements	$12,073,000	$97,656,000	9
South Birchwood Loop Rd. Improvements	$11,936,000	$109,592,000	10

Source: Cost Estimates for 1-4 are from the 2001-2003 AMATS Transportation Improvement Program, as amended December, 2003, and for 5-10 are from the Alaska Department of Transportation and Public Facilities and the Municipality of Anchorage Project Management and Engineering Department.

* It is assumed that a limited amount of local and State funding will be available to finance the needed roadway improvement projects identified in this Plan.

** The Hiland Road corridor should be studied as a whole, with the intent that an appropriate first project that meets the greatest needs of the public shall be identified.

C. State and Local Funding for Roadway Projects

Approximately 173 miles of local roads are under the control of the Chugiak-Birchwood-Eagle River Rural Road Service Area (CBERRRSA). Several of the roads listed in the Plan as needing improvements are included in this total, including Homestead Road, Business Boulevard, and the upper part of Hiland Road. Although these roadways could be funded by non-NHS money, there is also a possibility that they could be funded through a combination of state grants and local contributions.

The only existing flexible funding source for roadway projects in Anchorage is the Municipal Capital Project Matching Grant Program (AK Statute 37.06). The Anchorage Bowl LRTP estimated that for 2001-2023, an estimated $1.1 million per year, or $15.4 million, could be expected to be spent on LRTP recommended projects for non-NHS roadway projects.

However, In order to secure a grant from this program, Chugiak-Eagle River roadways must not only compete with projects sponsored by other cities but also with other Anchorage needs. Historically, from 1/3 to 1/2 of the total Anchorage allocation has been spent on roadway improvements. Due to the competitiveness of this grant program, it is very difficult to estimate the amount of money that might be available for Chugiak-Eagle River roadway projects in the future.

Chugiak-Eagle River does have a source of funding for the 30% local match required by the Municipal Capital Project Matching Grant Program. Several years ago, Chugiak-Eagle River voters approved a 1.0-mil road/drainage capital improvement levy, and a 1.1 mil winter/summer road and drainage maintenance levy. The money has been used for a variety of purposes including the Recycled Asphalt Program and minor roadway improvements. It was also used to provide the local match requirement for the Baronoff Street upgrade project. The financing package for this project consisted of a $1.330 million State grant and a $0.570 million local match from the Chugiak-Eagle River capital improvement mil levy.

It is up to the CBERRRSA Board to recommend how to spend the capital mil levy. In order to obtain a share of this funding source, the major roadway projects identified in the Plan will have to compete with an array of other pressing local needs. Many existing local roads under the Board's control have serious maintenance needs that must be addressed in a comprehensive manner. For example, substandard roads need upgrading to correct drainage and safety problems and to provide standard amenities. In addition, dirt roads require surfacing to help minimize dust pollution problems. Nevertheless, it is reasonable to expect that a limited amount of money will be available from the capital mil levy to help fund some of the major roadway improvement projects identified in this plan.

II. PUBLIC TRANSPORTATION AND OTHER MODES

Chapter 5 identifies the following recommendations pertaining to transit, carpooling, and vanpooling for the Chugiak-Eagle River area are based on the Public Transportation Department Route Restructure Analysis, completed in 2003. These recommendations are provided for concept only. Additional analysis of the Chugiak-Eagle River area is needed in order to finalize the long-range public transportation recommendations.

1. Implement convenient public transportation service that combines the predictability of a fixed route system with the accessibility of a dial-a-ride/community circulator system.
2. Maintain large bus service, oriented to the Glenn Highway, to provide transportation for area residents into Anchorage.
3. Provide connectivity between Chugiak-Eagle River and destinations in Anchorage other than downtown.
4. Explore expanding People Mover service to serve the high-density residential development in Tract A, Powder Reserve when development is nearing completion, either through park & ride or through community circulator service.
5. Explore additional Share-A-Ride program alternatives, particularly the vanpool program in the Chugiak-Eagle River area.

The above recommendations will probably cost more money to implement. On the other hand, transit operations are typically covered by local contributions (property taxes and fares). Thus, it will be up to transportation officials as well as transit advocates and users to convince decision makers that transit is an essential service and that operating revenues need to be increased to implement the recommended program expansions.

The bike trail and sidewalk needs in Chugiak-Eagle River are also greater than the funding available to construct them. The Anchorage Trails Plan, as well as the Eagle River CBD Revitalization Plan, when adopted, should be used to prioritize the projects.

III. MAINTENANCE

The roadway recommendations contained in the 2003 LRTP Update will not substantially increase the maintenance costs for either the State of Alaska or CBERRRSA. All but two of the roadway projects are upgrades of existing roads, which do not require additional lanes. In many cases the projects will result in a net maintenance cost savings especially where improvements to the existing substandard roadbed and drainage reduce the need to repair the roadway surface.

The Glenn Highway is the major exception to the maintenance neutrality of this LRTP Update. Recommendations call for an additional 11.2 lane miles between Hiland Road and South Birchwood Loop Road. At an estimated cost of $5,906 per mile (Source: ADOT&PF Central Region, Road Maintenance), this project will cost $65,027 more per year to maintain. (Note: maintenance costs include snow removal, sanding, and minor

repair.) The ADOT&PF road maintenance budget is funded out of the general fund appropriated by the State legislature. Whether or not this increased maintenance cost is funded adequately depends upon the priority given this function by the State legislature.

Implementation of the trails and sidewalk recommendations contained in the Plan could result in a substantial increase in the length of the existing trail system. The ability and willingness to pay the additional cost of maintaining this expanded system should be resolved prior to making a commitment to build them. Both the CBERRRSA Board and the Chugiak-Eagle River Parks and Recreation Commission continue to work to address this issue.

IV. SUMMARY OF FINANCIALLY CONSTRAINED RECOMMENDATIONS

As the above analysis demonstrates, sufficient federal funding will be available to finance all of the major roadway improvement needs in the next 20 years.

TEA-21 regulations state that the Long-Range Transportation Plan will be used to develop the needs list for the Transportation Improvement Program (TIP). In order to provide guidance to AMATS staff in assessing which Chugiak-Eagle River projects to include in the TIP, the financially constrained roadway projects have been categorized by the following horizon year phases: FY 2002-2008, FY 2009-2015, and FY 2016-2023 (see Table 10).

Table 10
Short and Long Term Roadway Recommendations
Horizon Phases*

Non-NHS Projects	FY 2002-2008	FY 2009-2015	FY 2016-2023
Eagle River Loop Road	I----------I		
Eklutna River Bridge Rehabilitation	I----------I		
Old Glenn Hwy. (Rural)	I----------I		
Eagle River Road MP 5.3 to MP 12.6, Visitors Center	I----------I		
Hiland Road*	I----------I		
Homestead Road		I----------I	
Eagle River Road MP 0 to vicinity of Greenhouse Road		I----------I	
North Birchwood Loop Road			I----------I
Eklutna Lake Road			I----------I
South Birchwood Loop Road			I----------I
NHS Projects	**FY 2002-2008**	**FY 2009-2015**	**FY 2016-2023**
Glenn Hwy./Artillery Rd. Interchange	I----------I		
Glenn Hwy./Hiland Rd. Interchange		I----------I	
Glenn Hwy / New Interchange between N & S Birchwood Lp. Rds.			I----------I
Glenn Hwy. (Hiland Road to Artillery Rd.)			I----------I
Glenn Hwy. (Artillery Rd. to North Eagle River Access Rd.)			I----------I
Glenn Hwy. (N. Eagle River Access Rd. to South Birchwood Loop Rd.)			I----------I

*The Hiland Road corridor should be studied as a whole, with the intent that an appropriate first project that meets the greatest needs of the public shall be identified.

CHAPTER 12: AIR QUALITY CONFORMITY

I. NATURE AND EXTENT OF THE AIR QUALITY PROBLEM

As a low-density suburban and semi-rural area, Chugiak-Eagle River does not share the carbon monoxide air pollution concentrations of the Anchorage Bowl. On the other hand, Chugiak-Eagle River has not totally escaped air pollution problems. In the past, the area has experienced high dust levels, which could lead to health problems, particularly for people with heart or respiratory ailments.

The Environmental Protection Agency, which regulates dust concentrations as well as other forms of air pollution, has established standards for dust particles smaller than 10 microns (PM-10). In order to determine if the EPA PM10 standards were being met, the Municipality of Anchorage, Department of Health and Human Services began a PM10 monitoring program in 1985. The monitors placed in Eagle River recorded a total of 11 exceedances of the 24-hour National Ambient Air Quality Standards (NAAQS) of 150 micrograms per cubic meters (all exceedances occurred prior to 1987). The maximum value recorded was 336 micrograms per cubic meter.

As a result of the above described air quality violations, EPA required the Municipality to develop a plan to control the level of dust in the air in Eagle River. The Eagle River PM10 Control Plan was adopted by the Municipal Assembly on February 6, 1990 and amended on September 24, 1991. The Plan was incorporated as an amendment to the Alaska State Implementation Plan and submitted to and approved by the EPA.

The Eagle River PM-10 Control Plan identifies a nine square-kilometer nonattainment area where control efforts have been focused. This nonattainment area encompasses the Eagle River business district and surrounding residential areas, including the lower portion of the Eagle River Valley. Because 90% or more of the PM-10 was shown (based on results of receptor modeling) to be generated by vehicle traffic on unpaved roads, the plan committed to an extensive paving and road-surfacing program in the Eagle River PM-10 nonattainment area.

In 1987, even prior to the adoption of the Eagle River PM-10 Control Plan, the Municipal Street Maintenance Department, in cooperation with the Chugiak-Birchwood-Eagle River Rural Road Service Area Board, had already begun a road-surfacing program to reduce dust from the 22 miles of gravel roadway in the nonattainment area. By 1990, when the Anchorage Assembly adopted the Eagle River PM-10 Control Plan, six of these 22 miles had been paved or surfaced with recycled asphalt product (RAP). More paving and/or RAP surfacing was necessary to achieve the EPA standards, however. Towards this end, the Eagle River PM-10 Control Plan committed to paving or RAP surfacing an additional 8.6 miles of gravel roads in the nonattainment area.

A 40% reduction in PM-10 emissions was necessary to achieve compliance with EPA standards. The goal of the plan was to reduce PM-10 emissions by an estimated 56%, providing a margin of safety beyond what was required to achieve the air quality

standard. Specific roadways within the nonattainment area were targeted for paving or RAP treatment. Steady progress toward this goal was made between 1990 and 1994. By the plan's December 31, 1994 milestone date, all 8.6 miles of targeted roadway had been paved or RAP-treated. In addition to the 8.6 miles specified in the plan, surfacing has been completed on a number of additional roadways, both inside and outside of the nonattainment area. At this time all streets in the PM-10 non-attainment area in Eagle River are paved or RAP-treated. The implementation status of the Eagle River PM-10 Control Plan is summarized in Table 11.

Table 11
Eagle River PM-10 Nonattainment Area
Estimated Emissions Reductions

PM-10 Emission Control Measure	Projected Emission Reduction Required to Show Attainment (tons per day)	Estimated Emission Reduction Achieved (tons per day)	Percent Implementation Achieved
Road paving and recycled asphalt surfacing of unpaved roads	2.94	4.09	139

The State of Alaska and the Municipality have implemented all of the control measures identified in the Eagle River PM-10 Control Plan. As a result, a substantial reduction in PM-10 pollution has been achieved. Since calendar year 1988, there have been no exceedances of the NAAQS standards for PM-10 in the Eagle River. The one exception occurred in August 1992 when Mt. Spurr erupted spreading a blanket of volcanic ash over the area. Nevertheless, the Eagle River area is still designated as a PM-10 non-attainment area. Therefore, transportation plans for this area are required to undergo a PM-10 conformity determination as part of the plan update.

II. CONFORMITY WITH FEDERAL CLEAN AIR ACT REQUIREMENTS

Air quality conformity regulations state that each new transportation plan must be demonstrated to conform to the Clean Air Act requirements before the transportation plan is approved by the MPO or accepted by U.S. DOT. The Public Review Draft Chugiak-Eagle River LRTP PM–10 Air Quality Conformity Determination document dated January 23, 2003, is intended to meet these requirements.

The Public Review Draft Chugiak-Eagle River LRTP PM-10 Air Quality Conformity Determination report concluded that the 2003 Update of the Chugiak-Eagle River Long-Range Transportation Plan is found to be in conformity with the Federal Clean Air Act as amended in 1990. Furthermore, it has been determined that the Chugiak-Eagle River Long-Range Transportation Plan will not undermine the ability of the Municipality of Anchorage to achieve compliance with the EPA carbon monoxide standards.

CHAPTER 13: OFFICIAL STREETS & HIGHWAYS PLAN

The Official Streets and Highways Plan (OS&HP) provide a means for the community to prepare for future development. It does this by establishing the location, classification and minimum right-of-ways of those streets and highways required to accommodate the highway transportation needs of the community in years to come. The OS&HP complements the Municipality of Anchorage's Comprehensive Plan by contributing to the achievement of the community goals expressed by that plan. Streets and highways are closely linked with community development. Planning for land use and the highway system should be integrated as much as is practicable.

The Official Streets and Highways Plan (OS&HP) for the Municipality of Anchorage consists of two parts. The first establishes the policies and standards that will guide the community in creating the necessary highway transportation system. The second part consists of maps that graphically depict the hierarchy of streets and highways, both existing and planned, that will form the highway transportation system. The OS&HP maps are based on the policies and standards set forth in this document; however, where maps conflict with the policies and standards the maps shall govern.

The OS&HP prescribes the location and classification of present and future primary roads within the Municipality of Anchorage. It governs decisions on right-of-way widths and major right-of-way alignments for proposed subdivisions reviewed by the Platting Board. In addition, the OS&HP guides the Planning and Zoning Commission in its review of conditional uses, site plans, and zoning actions. The OS&HP supplements Title 21 of the Municipal Code in regard to the major highway system serving Anchorage.

In a developing community such as Anchorage, the location of major and minor arterials and collector streets must be established in advance of land subdivision activity, in order to avoid the need to acquire the necessary right-of-ways for planned highways and streets at a higher cost in later years. However, final alignments may vary somewhat from those shown on the OS&HP maps. Most freeway, expressway, and major and minor arterial alignments are finally determined after environmental impact review. Collector and local road alignments are often determined during the process of design and platting of new subdivisions.

The development of the Official Streets and Highway Plan is closely related to the development of updated Long-Range Transportation Plans (for both the Anchorage Bowl and for Chugiak Eagle-River) for the Municipality by the Anchorage Metropolitan Area Transportation Study (AMATS) process. Information acquired during the update of the Long-Range Transportation Plans is relied upon heavily for the necessary data required in determining highway and street patterns and locations shown in the OS&HP. A considerable amount of analyses of new demographic and transportation data is completed before extensive computer modeling techniques are used to determine future highway transportation system needs.

Although the AMATS Long-Range Transportation Plan is subject to annual review and possible revision, the major highway facilities that are identified are considered to be essential for the effective development of Anchorage's highway system. The Long-Range Transportation Plans, which focus on streets classified collector and above, form much of the basis for the recommendations contained in the OS&HP. The OS&HP, in fact, becomes the implementing instrument for the Long Range Transportation Plan by officially identifying, by ordinance, the locations, classifications, and minimum right-of-way requirements of the street and highway system needed to meet long range transportation goals over the next 25-year period.

Traffic projections prepared in conjunction with the Chugiak-Eagle River Long-Range Transportation Plan show that several area roads will be congested by the year 2023, primarily due to increases in population. There is more to traffic congestion than total number of cars, however. In order to ensure that the roadway system will work right, the functional classification of the primary roadway system (collectors, arterials, expressways, and freeways) needs to be accurately identified. At least some of the difficulty in moving people and goods in cities results from various elements of the circulation system being called upon to fulfill functions for which they were not designed. Misuse and failure of the transportation system is sometimes the result of misunderstanding the appropriate function of different streets.

Street classification affects roadway capacity in two ways. First, the design of the roadway is largely based on its classification. Roadway characteristics such as width, design speed, right-of-way, and intersections vary depending on whether a road is classified as a freeway, arterial, collector, or local roadway. Traffic engineers look to these classifications to provide guidance regarding what standards to use. For example, freeways, which are intended to serve as conduits for large volume, long-distance traffic, will be designed with grade-separated interchanges and wide medium strips. Collector streets, which are intended to provide access into and out of neighborhoods, will be designed with lower speeds in mind and at-grade intersections. If roads are misclassified, the design may be inappropriate for the function it is intended to serve.

The second way street classification affects roadway capacity is in the type of access, which is allowed to and from the street. Freeways are the most efficient means of moving people from one part of the city to another. One of the reasons freeways are so efficient is that they do not allow any access except at interchanges. In general, the more unlimited the access to a street, the fewer cars it can carry. Thus, if a street primarily serves to move traffic through an area, the number of access points should be restricted. On the other hand, if a street primarily is used to gain access to property abutting the street, then unlimited access is not a concern. The conflict between through traffic needs and access to homes and businesses is basically incompatible. When volumes of traffic are low and the abutting land is not used intensively, the conflict is minor, but when traffic volumes are high and the adjoining land is used intensively (such as on the Old Glenn Highway near downtown Eagle River) the conflict increases geometrically, and the capacity of the road is greatly reduced.

I. THE EXISTING STREET CLASSIFICATION SYSTEM

Streets can be divided into five basic categories: local roads, collectors, arterials, expressways, and freeways. Each higher classification acts as collector for a number of facilities of the next lower classification in a cumulative, hierarchical fashion. The following is a description of each of the functional street classifications.

A. Freeways

Freeways are limited access corridors that are intended to provide safe movement of substantial volumes of traffic at high speeds. The freeway has only one function - to carry traffic. Because it is thus specialized, with controlled access, no parking, and no at-grade intersections, it is a highly efficient carrier of traffic and has a much higher capacity per lane than the typical arterial or other type of street. The only existing freeway designation in Chugiak-Eagle River is the Glenn Highway from the Scale house to the MOA Boundary.

B. Expressways

Expressways are basically high-class arterials. They are typically divided highways that are designed primarily for through traffic, with full-or partial-control of access. Intersections are either at-grade or grade-separated. Expressways move traffic efficiently, but less quickly than freeways, due to at-grade intersections. They are like freeways, however, in that they do not provide access to adjacent land uses. (Note: There are no expressway designations in the Chugiak-Eagle River study area.)

C. Arterial Streets

The primary function of arterial streets is to move large volumes of traffic over relatively long distances from one part of the city to another. As a result, arterial streets have a great deal more through trips than collector streets. There are also more restrictions on the number of direct access points than collectors. Land access is a secondary function of arterials. Access to the road is mostly restricted to adjacent major land uses. The reason for these restrictions is to ensure that the flow of traffic is relatively unimpeded.

D. Collector Streets

A collector street collects traffic from local streets and then conducts it to arterials or to local traffic generators such as shopping centers, schools, community centers, or park and recreational facilities. It may supply abutting property with some degree of land service but this should be avoided as much as possible. Collector streets are designed to give priority over local streets in traffic control locations. In commercial areas, traffic volumes are often too high to permit the utilization of collectors. In these areas, local streets are designed to connect directly with an arterial. In large industrial areas where traffic volumes are lower, collector streets are more often needed.

The main function of a residential collector street is to conduct traffic from local residential areas to arterials. Land access should be a secondary function of the residential collector, and both curb and driveway access should be discouraged except at

those locations where traffic movement patterns may be effectively controlled. A collector may also function as an easement for utilities. Collectors may also be designed to provide access functions for commercial and industrial development, interconnecting such areas with adjoining residential districts. Such facilities should also be designed to minimize curb and driveway access except at those locations where traffic movement patterns may be effectively controlled. Parking along collectors should be discouraged.

The location of residential collectors is influenced by their function as well as by the density of urban development and topography.

The following guidelines should be followed in planning for new collector streets:

- Collector streets should serve to collect traffic from local streets of all types and transmit this traffic to the arterial street system or to important trip generating activities within small residential areas.
- The collector street system should be designed so that through traffic is discouraged between larger residential areas or between larger residential areas and major activity areas. In residential areas, collector streets should be planned to not exceed one-half mile in length if possible, and to discourage continuous links between arterials.
- Collector streets should be designed to provide priority to through traffic movement, as compared to the access function of local streets. They should provide some degree of access control, in order to maximize safety and minimize traffic maneuvering problems, and they should provide a limited land service function to abutting property. New subdivisions should be designed to not allow direct driveway access to collectors. In areas of low density residential development, limited direct driveway access to collectors may be allowed but only if the collector street will not become a major link in the future to more densely developed areas. Reverse lot design should be used in subdivisions, in order to minimize driveway access onto collector streets.
- Collector streets should provide access to local neighborhood schools and neighborhood recreation areas. Pedestrian facilities should be provided along collectors to allow for safe access between these activity centers.
- Residential collectors should be designed to provide only two travel lanes, with limited widths on shoulder areas for emergency parking.
- On-street parking is not appropriate on collector roads. Designs should be developed to discourage curb parking.

E. Local Streets

The principal purpose of a local street is to provide access to property abutting the public right-of-way. Moving traffic is a secondary function of the local street. Since land service is its primary purpose, the local street should not carry through traffic. Buses and heavy trucks should be excluded except where the local street is in a commercial or an industrial district of the city. All streets not designated as a collector, arterial, expressway, or freeway on the Official Streets & Highways Plan are considered local streets.

F. Country Lanes

Country Lanes are a special type of local or collector street having unique scenic attributes. Generally speaking, there are two basic types of Country Lanes:

- Narrow, gravel roads having very light traffic volumes.
- Two lane paved roads with relatively light traffic volumes.

The Official Streets and Highways Map do not contain any Country Lane designations for the Chugiak-Eagle River area. Instead, the determination as to what local roads and collectors will be considered for Country Lane design standards will be made on a case by case basis by the Chugiak, Birchwood, Eagle River Rural Road Service Area Board. This determination will be made prior to upgrades or improvements of local or collector roads and shall be based on the following guidelines:

- The character of the surrounding area should be aesthetically pleasing, containing natural settings or landscaping.
- In rural settings, the development along the road should be predominately residential and should include no industrial, commercial, or resource extraction land uses.
- In urban settings, the roadside development should be institutional or residential and should include vistas of natural features.
- Roadways should conform to the natural topography.
- Scenic vistas may be a very strong factor in designating a Country Lane where these conditions predominate. Easements may be acquired to protect areas crucial to the maintenance or enhancement of visual quality.

Local roads or collectors, which have been determined by the CBERRRSA Board to fit the Country Lane criteria, shall be designed according to the following standards:

1. Utility Lines

   a. Every attempt shall be made to minimize conflicts and duplications of effort when installing water, natural gas, and electric lines.

   b. After underground installation of any utility lines, landscaping shall be used to restore the area as quickly as possible to a natural condition.

2. Lighting

   Streets designated as Country Lanes should be equipped (when lights are deemed necessary) with low-profile, low-density illumination lamps of a design that is compatible with the surrounding natural environment.

3. Construction and Maintenance

   a. Clearing should be done within the right-of-way only as necessary to assure adequate snow storage and roadway associated drainage. Areas cleared for construction, but not needed for snow storage and roadway associated drainage, must be restored as quickly as possible to a natural appearing condition. Care shall be taken to retain scenic views and protect or enhance the visual quality of the roadway.

   b. Ditches, where necessary, shall be no wider or deeper than required for drainage of the roadway and adjacent development.

   c. Easements may be acquired to protect areas crucial to the maintenance or enhancements of visual quality.

4. Subdivision and Development Review

   a. Subdivision and development review shall take place to assure conformity of development street designs to Country Lane Standards.

   b. Consideration shall be given to preserving natural vegetation and enhancing visual qualities as part of the subdivision or development design when adjoining Country Lanes.

5. Duplicate Designation of Country Lanes

   Where a road carries a duplicate designation such as Collector and Country Lane, for the purposes of site plan review and construction design, extra attention should be given to enhancing the scenic quality of the road. Inclusion of necessary facilities, such as turn outs, are to be provided. This is not to preclude the construction of walkways, etc., but to address how they are constructed.

II. CLASSIFICATION CHANGES AND STUDY AREAS

The purpose of this section of the Transportation Plan is to update the street classification system for Chugiak-Eagle River, last updated in 1996.

Changes to the 1996 Official Streets & Highways Plan for Chugiak-Eagle River involve a few changes to the collector system as well as to designated study areas. The Official Streets and Highway Plan map currently shows Study Areas A through I; Study Areas A to D are within the Anchorage Bowl, and Study Areas E to I are in the Chugiak-Eagle River Area. Therefore, Study Areas on the OS&HP map for this LRTP Update show only E through I. It should be noted that while the same letters are used as in the 1996 Plan, study area designations have changed, and some refer to different areas than in the 1996 Plan.

There are two types of collector designations: those that affect existing streets and those that affect future streets. Existing streets, which are designated as collectors in this plan, are not expected to change substantially in character. Improvements to these streets, if they occur, will generally be limited to sidewalk improvements and upgrades from strip paved and/or gravel roadways to Municipal standards. The right-of-way and speed limits will remain the same (generally 60 feet and 25 miles per hour respectively) and no attempt will be made to increase the capacity of the roadway by adding additional lanes. The exception to this rule may be collectors, which are included as major roadway improvements in this Plan: i.e., Hiland Road, South Birchwood Loop Road, Homestead Road and Eklutna Lake Road.

South Fork Access Study Area (deleted)

The South Fork Access Study Area was deleted from the OS&HP map. Hiland Road is the main collector servicing the residences along the south Fork of the Eagle River. The existing roadbed is inadequate for a number of reasons. The Study Area was designated to study possible alternatives for alignment of Hiland Road as a possible solution to correct these problems. While the need still exists, the Study Area was deleted, as a study of possible alternatives will be conducted as part of the Hiland Road roadway improvement recommendation. Therefore, the South Fork Access Study Area has been deleted.

Driftwood Bay Drive Study Area (deleted)

The Driftwood Bay Drive Study Area was also deleted from the OS&HP Map. This study area was designated to address a couple of issues: the need to extend Driftwood Bay Drive and to provide secondary access to Eagle River Road for newly developing areas in the Parkview Terrace East Subdivision of Eagle River. Because there were too many unknowns to make a specific recommendation, the study area designation was used to require that the secondary access issue be examined in more detail through a Traffic Impact Analysis (TIA) prior to future subdivision approvals. In 1998 a feasibility study of alternative access routes in to Eagle Crossing, Eagle River Valley Sub-Area Circulation Study, was completed for the Municipality of Anchorage. The study did not make a strong recommendation for any one secondary access alternative, but presented evaluated four alternatives for future reference. In 2000, platting actions were taken that provide for Driftwood Bay Drive extended, and connecting with a new portion of Eagle River Lane which will be required to connect with the existing portion of Eagle River Lane which provides access to Eagle River Road. Thus, the secondary access issue for Eagle Crossing has been addressed. Changes to the OS&HP map show both of these changes. Because of increased development to the east of Eagle Crossing, Driftwood Bay Drive is shown as being extended by an arrow, indicating exact alignment is to be determined later. The need for another collector, approximately .5 miles to the east of Eagle River Lane is shown that will give access from Eagle Crossing and the Johnson Homestead to Eagle River Road. The exact location of that collector will be determined later as well, as indicated by an arrow.

Oberg Road Extension Study Area (deleted)

The area of Peters Creek between the Glenn Highway and Knik Arm has been developed largely without the benefit of a collector system. As a result, traffic circulation in the area is circuitous, adding unnecessary mileage to most trips in the area. Better connections are needed to access the new Middle School on Lake Hill Drive from the residential areas in the northwestern portion of Peters Creek. The feasibility of extending Oberg Road to Reese Road extended was examined when the preliminary plat for GlennView Estates Subdivision was submitted. Oberg Road currently ends at North Wood Subdivision. Such a connection would greatly improve access to the new Middle School to be located just north of Reese Road. In addition, strong public support was expressed during the public review period for the proposed recommendations for this 2003 LRTP Update to build a collector connecting Oberg Road to connect with Reese Road extended. It was decided at a meeting of the CBERRRSA Board, with participation from the developer, to delete the study area for the Oberg Road extension, and show a collector (Deer Park Drive) connecting Oberg Road with Reese Road extended. In the event that Reese Road is not extended in the future due to cost and other factors, the proposed plat provides for circulation from the new development both to Oberg Road as well as to existing Reese Road and the Old Glenn Highway, even though very circuitous. The decision whether or not to extend Reese Road is further discussed under the Mixed Use Study Area G, Eklutna Lands between the Glenn Highway and Knik Arm west of the Mirror Lake interchange.

Mirror Lake Interchange Study Area (H)

Thousands of acres of undeveloped land, owned by Eklutna, Inc., lie between the Glenn Highway, and Knik Arm east of the Mirror Lake interchange. Although it is unclear exactly how this area will develop (it is designated as Mixed Use in the Chugiak-Eagle River Comprehensive Plan), it will no doubt generate a substantial amount of traffic. Most of this traffic will end up on the Glenn Highway. Thus, it is important that there is an adequate access to the Highway from the undeveloped land. Two existing interchanges exist which could serve this property: the North Peters Creek Interchange and the Mirror Lake Interchange. The Peters Creek Interchange is probably best suited to serve the southern portion of the undeveloped lands to the south of Edmonds Creek, but should not be required to handle the full load. In order to reduce the distance to the freeway interchange and avoid overburdening existing residential roads, the Mirror Lake Interchange will need to be utilized as the freeway access to the undeveloped land between Edmonds Creek and Eklutna Village. Use of this interchange will require the construction of an access road (collector or greater) through Edmonds Lake Regional Park.

Prior to the subdivision of the undeveloped Eklutna land, a study should be conducted as a part of the Traffic Impact Analysis to determine the advisability of using the Mirror Lake Interchange as the primary access to the development and determine the best route through the park in order to minimize its impact.

Mixed Use Study Areas: (E, F, G, I)

The Chugiak-Eagle River Comprehensive Plan designated three large undeveloped tracts owned by Eklutna as mixed use areas including: the Powder Reserve (Study Area E), located west of the Glenn Highway near the North Eagle River Access Road interchange; Eklutna 770 (Study Area F) bounded by the Old and Glenn Highways and North and South Birchwood Loop Roads; and the Eklutna lands between the Glenn Highway and Knik Arm west of the Mirror Lake interchange (Study Area G), and farther north (Study Area I).

The mixed-use classification allows a wide range of residential, commercial, institutional, open space or light industrial uses and densities. As a result, the future land use patterns and densities cannot be accurately predicted. Neither is it possible to make reasonable recommendations regarding a system of collectors and arterials prior to the actual subdivision or zoning submittal.

The circulation system for these large undeveloped parcels of land can best be planned through the Planned Community (PC) Master Plan process, which requires a description of the principal circulation elements. This procedure worked well in the Tract A, Powder Reserve rezoning and is supported by policies contained in the Chugiak-Eagle River Comprehensive Plan which state that the mixed use areas be implemented through a Planned Community District or through an alternative zoning package. By avoiding piecemeal development, it is hoped that an integrated network of local, collector, and arterial streets can be established for these undeveloped areas.

The Master Development Plan for Tract A of the Powder Reserve, approved May 2001, shows a total of 1,830 development units planned, at densities varying from 2.7 to 9.0 DU/acre, with an average of 3.4 DU/acre. The need exists to provide for future connectivity between the Powder Reserve north to Chugiak High School, and south to Artillery Road interchange. The latter connection is indicated on the OS&HP Map, with an arrow, indicating that alignment will be determined in the future. A future connection to the north is not indicated on the map at this time, pending outcome of unresolved issues pertaining to the NW ¼ Section 25 Land Use Study. A road corridor should be reserved through NW ¼ Section 25 in the final Section 25 Land Use Study in the event a future study indicates the need for a collector road alignment through that area. The alignment of the connection to the north will depend in part on the future updated master plan for the expanded Powder Reserve area.

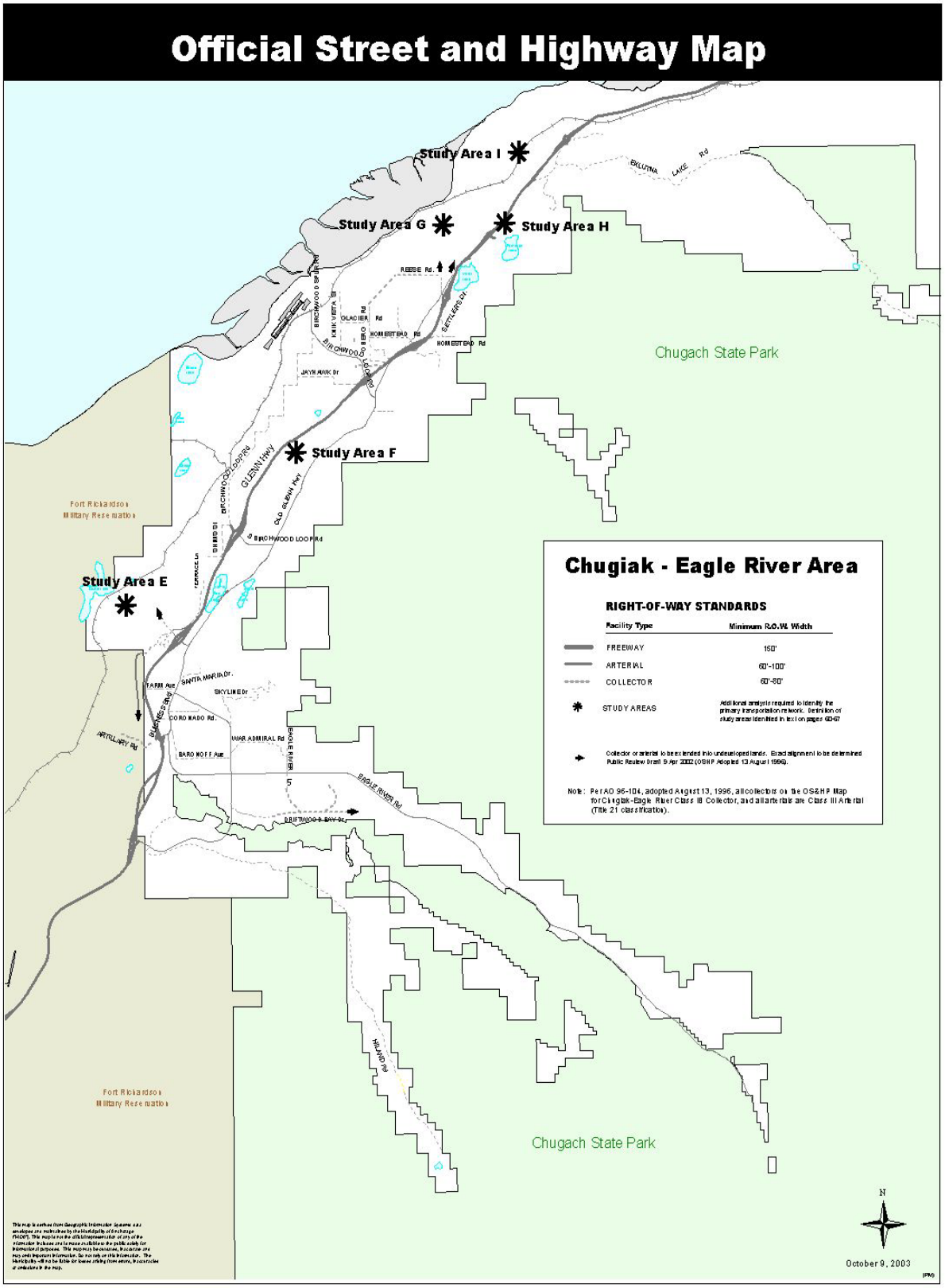
Study Area G, the Eklutna lands west of the Mirror Lake interchange, will need to require a rigorous alternatives analysis for circulation affecting the North Peters Creek area. The decision whether or not to extend Reese Road, and the resulting increased traffic that will be loaded onto Lake Hill Drive, must be addressed in an areawide study. Lake Hill Drive was originally constructed as a local residential street and was not intended to serve as a collector. There are several strategies which, when taken together, could help reduce the volume of traffic on Lake Hill Drive. One involves extending the Old Glenn Highway as an arterial into this area, that could connect with a new collector to the north of existing

Reese Road, and which could serve the new subdivisions, including Glenn View Estates. Another strategy involves utilization of the Mirror Lake interchange of the Glenn Highway as the principal access to this undeveloped Eklutna land (see section H above).

III. OFFICIAL STREETS & HIGHWAY PLAN MAP

Map 5 represents the Official Streets and Highway Plan map for Chugiak-Eagle River and includes all of the above recommendations. When approved, The Map will supersede the 1996 OS&HP for the Chugiak-Eagle River area. Where street and highway alignments on the Plan Map correspond to existing streets, the planned alignment shall conform substantially to the existing alignment. Where street and highway alignments on the Plan Map do not correspond to existing streets, the alignment on the Plan Map is approximate. Such alignments are finally determined by the acceptance of right-of-way dedications on subdivision plats or during the redesign phase of a planned facility. The discussion contained in the preceding part of this section should be used to further refine the Plan Map.

Construction of new collector will provide connection from Oberg Road to Reese Road


Official Street and Highway Map
Study Area I
Study Area G
Study Area H
Study Area F
Study Area E
Chugach State Park
Fort Richardson Military Reservation
Chugiak - Eagle River Area
RIGHT-OF-WAY STANDARDS
Facility Type
Minimum R.O.W. Width
FREEWAY
150'
ARTERIAL
60'-100'
COLLECTOR
60'-80'
STUDY AREAS
Additional analysis required to identify the primary transportation network. Definition of study areas identified in text on pages 60-67
Collector or arterial to be extended into undeveloped lands. Exact alignment to be determined
Note: Per AO 96-104, adopted August 13, 1996, all collectors on the OS&HP Map for Chugiak-Eagle River Class III Collector, and all arterials are Class III Arterial (Title 21 classification).
GLACIER Rd
HOMESTEAD Rd
REESE Rd
JAYNI AVE Dr
GLENN HWY
OLD GLENN HWY
BIRCHWOOD LOOP Rd
SIMISI
TERRACE Ln
SANTA MARIA Dr
SKYLINE Dr
CORONADO Rd
WAR ADMIRAL Rd
BARONOFF Ave
ARTILLERY Rd
EAGLE RIVER Rd
DRIFTWOOD BAY Dr
HILAND Rd
EKLUTNA LAKE Rd
October 9, 2003

Map 5

APPENDIX A

TOP 50 TRAIL PROJECTS
AREAWIDE TRAILS PLAN

TABLE 10.1 – TOP 50 TRAIL PROJECTS

Name of Trails	Area	1997 Cost Est. ($,000)	Type
A-C Couplet (North-South Trail)	NW	1,500	Trail
Abbott Loop: Campbell Creek to Abbott Rd. with grade separated crossing	SE	1,920	trail
ARR. Trail: Coastal Trail to Northern Lights	NW	800	trail
ARR. Trail: Northern Lights to Tudor	NW	550	trail
ARR. Trail: O'Malley to Coastal Tr. (overpass at O'Malley)	SW	1,855	trail
ARR. Trail: Dimond to O'Malley (overpass at Dimond)	SW	1,760	trail
ARR. Trail: Tudor to Dimond	NW/SW	1,520	trail
Bird Creek Regional Park & Trailhead (completed)	TA	1,000	trailhead
Business Park Blvd pedestrian improvements	C/ER	2,000	sidewalks
Campbell Creek Trail: Old Seward to Tudor	NE	3,500	trail
Coastal Trail Lighting	NW	1,500	lighting
Coastal Trail/Ship Creek Trila: 2nd Ave. via Ship Creek to Glenn Highway at Boniface	NW	6,000	Trail
Coastal Trail: Dimond Blvd to Potter Marsh	SE	12,000	trail
Coastal Trail: through EAFB/Ft. Rich to Mouth of Peters Creek Park Beach Lake	C/ER	2,200	trail
Coastal Trail: Kincaid to Dimond	SW	5,000	trail
Coastal Trail: Mouth of Peters Creek Beach Lake Park to Eklutna	C/ER	9,500	trail
Coastal Trail: Potter Marsh to Potter Section House	SE	2,700	trail
Coastal Trail: Widen shoulder 3rd to Earthquake Park	NW	620	trail
DeArmoun Road: Seward Highway to Hillside (unp)	SE	y	trail
DeArmoun E. 140th to Birch (unp)	SE	25	trail
Eagle River Greenbelt: connect to Hiland Drive	C/ER	90	trail
Eagle River Loop: Eagle River Rd. to Old Glenn	C/ER	950 or y	trail
Eklutna Waterline: Dedicate trail	C/ER	N/A	dedication
Elmore: Rabbit Creek Rd to DeArmoun, O'Malley to Abbott (unp)	SE	380	trail
Fire Creek Trail	C/ER	3,800	trail

Name of Trails	Area	1997 Cost Est. ($,000)	Type
Glacier Creek: Dedicate trails	TA	N/A	dedication
Glenn Highway: Boniface to Muldoon (completed)	NW	640	trail
Glenn Highway: Peters Creek to Mat-Su	C/ER	4,200	trail
Glenn Hwy.: Centennial Park to Eagle River Snowmobile	C/ER	y	trail
Hillside Trail (Chugach Rim)	C/ER	1,000	trail
Huffman Rd.: Birch to Elmore (unp)	SE	20	trail
Little Peters Creek Trailhead *(completed)*	C/ER	110	trailhead
Minnesota Bypass: Old Seward to Tudor	SE	2,750	trail
Moose Meadows: Dedicate trails	TA	N/A	dedication
North Birchwood Loop/Old Glenn Highway: North Birchwood interchange to Loretta French Park	C/ER	1,890	trail
O'Malley: Birch to Hillside (unp)	SE	500	trail
O'Malley: Lake Otis to Birch (p and unp)	SE	1,000	trail
Old Glenn Highway: Chugiak to Eagle River	C/ER	Y	trail
Penland Parkway south side	NW	210	sidewalk
Peters Creek Safety Trail (completed)	C/ER	900	trail
Potter Marsh Nature Trail Extension/Connection	SE	350	trail
Rabbit Creek Road (paved)	SE	Y	route
Rabbit Creek Road: Old Seward to Golden view (unp)	SE	55	trail
Section 36 Interpretive Trails (unp)	SE	40	trail
Seward Highway: Grade Separated Crossing at Bird	TA	450	crossing
Seward Highway: Potter to Portage, non-motorized	TA	25,000	trail
Tudor Road Crossing connections to Chester Creek southwest of University Lake and to Far North Bicentennial Park (i.e.) Chester Creek Trail connect)	NE	1,500	trail
University Drive: Providence to Northern Lights	NE	X	trail
Upper Huffman Trailhead	SE	15	trailhead
Windy corner Dall Sheep viewing *(completed)*	TA	3,500	turnout

Key: SW = Southwest Anchorage Bowl
NW = Northwest Anchorage Bowl
C/ER = Chugiak/Eagle River
x = Provide as a part of roadway construction
y = Provide as a part of road upgrade or maintenance
SE = Southeast Anchorage Bowl
NE = Northeast Anchorage Bowl
TA = Turnagain Arm
P = Paved
unp = unpaved
Costs are in thousands (completed) = project completed during plan approval

APPENDIX B

STATUS OF CHUGIAK-EAGLE RIVER AREA PROJECTS INCLUDED IN AMATS FFY 2001-2003 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AS OF JUNE 2002

APPENDIX B: STATUS OF PROJECTS INCLUDED IN AMATS FFY 2001-2003 TIP CHUGIAK/EAGLE RIVER LRTP STUDY AREA

(as amended through February 2002)

Project Rank in TIP (2/02)	Project Location	Years and Phases identified in amended FFY 2001-2003 TIP	Status of Projects as of June 2002	Estimated Costs 2001-06 ($,000)
	ROADWAY IMPROVEMENTS			
2a	Business Boulevard Roadway Rehabilitation	2001 - ROW/Util/C	Essentially complete	$3,740
6	Old Glenn Highway Rehab. (Artillery Road to N. Eagle River exit)	2001 - D/ROW/Util 2002 -D/Util/ROW/C	Construction will begin Summer 2003	$4,575
9a	New Pavement Replacement Program (Old Glenn Hwy: N. Eagle River Exit to Peters Creek, Briggs Bridge on Eagle River Loop Road (Note: funding for this program is not included in the AMATS allocation)	2001 D/C	Complete	$5,000
12	Eagle River Loop Rd. Reconstruction (Old Glenn Highway to Eagle River Road) Reconstruct to arterial standards.	2001 – PE 2002 – D 2004 – ROW 2006 – Util/C	Finalizing Noise Barrier analysis	$15,300
15	Eklutna River Bridge Rehabilitation/Replacement at Old Glenn Highway	2001 – D 2002 – D 2004 – Util/C	Design Study underway	$4,500
16	Old Glenn Highway Reconstruction (rural section, North Eagle River exit to Peters Creek) Project evaluates existing alignment, pavement conditions and pedestrian facilities. A portion of this project was broken out during public review to expedite reconstruction between NERI and Fire Lake Elementary School Access.	2002- 2003 – D/ROW/Util/C 2004 – ROW/Util 2005 – Util/C 2006+ - Util/C	ROW, Utilities ongoing	$12,3 67
23	Eagle River Road Rehabilitation (MP 5.3 to MP 12.6) Upgrade road, widen shoulders for pedestrians, improve visibility, and repavement.	2001 – PE 2003 – D 2004 – ROW ;2005 – Util/C	ROW mapping. Need survey info to Prepare CE.	$9,100

Project Rank in TIP, as amended	Project Location / Description	Years and Phases identified in amended FFY 2001-2003 TIP	Status of Projects as of June 2002	Estimated Costs 2001-06 ($.000)
TRANSPORTATION ENHANCEMENTS				
1a	Business Blvd. Area Pedestrian Safety Improvements (Eagle River) Project combined with roadway project 2a.	2001 – Util/C	Incl. in 2a above; essentially complete	$2,100
9	Eagle River Greenbelt Access and Pathway	2002 – PE 2004 – D 2006+ - Util/C	No activity	$1.750 (incl. est. needs after 2006 of $5,500)
10	Glenn Highway Trail Rehabilitation (Muldoon Road to North Birchwood Loop Rd) Resurface existing trail, address design deficiencies.	2002 – PE/D 2004 – Util/C	No activity	$2,650
13	Glenn Highway Trailhead Improvements (at Thunderbird Falls, Peters Creek, and South Fork of Eagle River)	2004 – PE/D 2006 - ROW/ Util/C	No activity	$400
OTHER FEDERALLY-FUNDED PROJECTS WITHIN STUDY AREA				
B	Eklutna Lake Road surface Treatment – Project will provide a hard surface road treatment on gravel roadbed and improvements necessary to support the hard surface. Part of a Statewide Road Surface Treatment Program.	2002 – Construction	PS&E May 2002	$2,950

APPENDIX C

RELATED STUDY / PLANNING EFFORTS

APPENDIX C

RELATED STUDY / PLANNING EFFORTS

There are several relevant plans and study efforts which have been coordinated with this 2003 LRTP Update. These include:

Eagle River PM 10 Control Plan (1991) and 1994 Milestone Report, Municipality of Anchorage Department of Health and Human Services
Chugiak-Eagle River Comprehensive Plan, 1993, Municipality of Anchorage Department of Community Planning and Development
Congestion Management Program, October 1994, Municipality of Anchorage Department of Community Planning and Development, AMATS, and Alaska Department of Transportation and Public Facilities
Alaska's National Highways, 1995, Alaska Department of Transportation and Public Facilities
Areawide Trails Plan, 1997, Municipality of Anchorage Department of Community Planning and Development
Knik ARM (Alaska Regional Multimodal) Transportation Project: Access for Regional Economic Development Final Draft July 2000, Northern Economics for Matanuska-Susitna Borough
Anchorage Bowl Comprehensive Plan: Anchorage 2020, February 2001, Municipality of Anchorage Planning Department
Master Development Plan for Tract A of the Powder Reserve May 2001, Eklutna, Inc.
Eagle River Central Business District Revitalization Plan Draft May 2001, Land Design North *et al*., for Municipality of Anchorage
Freight Mobility Study, June 2001, Municipality of Anchorage, Traffic Department
NW ¼ Section 25 Land Use Study Draft August 1, 2001, Municipality of Anchorage Planning Department
Southcentral Rail Network Commuter Study and Operation Plan, 2001, ARRC
Intelligent Transportation Systems Concept of Operations (Draft February 2002), P.B. Farradyne for Municipality of Anchorage Traffic Department
Birchwood Airport Master Plan, Draft Office Study, 2002, HDR for Alaska Department Of Transportation and Public Facilities

A. Alaska Railroad Corporation (ARRC)

Commuter Rail Service to and from Anchorage is of particular interest to the ARRC. It is currently building a new rail station at Anchorage International Airport. The station is anticipated to serve as a key link in developing rail service from the ports of Seward and Whittier, Anchorage and the Matanuska Valley (Valley). Additionally, ARRC will reduce rail trip times from Anchorage to Wasilla from the current ninety minutes to less than fifty-five minutes with an aggressive, ongoing program of track realignment, curve elimination and double tracking, as well as acquisition of modern rail diesel cars (RDCs).

A Southcentral Rail Network Commuter Study and Operation Plan, funded by Federal Transit Administration (FTA) and ARRC, was completed in 2001. This FTA funding program required a comprehensive study to determine cost effectiveness and operating efficiencies. Service between Wasilla and Anchorage, with a stop proposed near Eagle River on Fort Richardson, was one of the alternatives considered. The Study looks at projected ridership, capital and operating costs, and recommends minimal commuter service begin by 2005. However, ARRC is not planning to pursue commuter rail service independently. The study creates a blueprint for potential further actions by local and state officials to establish a viable and operational commuter rail system if they choose to do so, with participation by ARRC.

B. Birchwood Airport

The Birchwood Airport is a general aviation airport located approximately 20 miles north of Anchorage and west of the Glenn Highway along Knik Arm. Over the next two years, the Alaska Department of Transportation and Public Facilities (ADOT&PF) and its consultant HDR Alaska, Inc., will study ways to improve the Birchwood Airport and develop a Master Plan that outlines short (5 years), intermediate (10 years) and long-term (20 years) airport improvements. The objectives of the Master Plan are to recommend actions to correct safety and capacity deficiencies; identify facilities required to serve existing and future air traffic demand; and develop a phased implementation plan to improve the airport to meet forecasted aviation needs for 20 years. The Plan will evaluate the need to maintain or improve existing facilities or to construct new facilities to enhance safety. Improved airport facilities, with possible service expansions in the future, could have an effect on the road system.

C. Regional Planning

In March 2001, a diverse group of policymakers and citizens gathered at the initial meeting to discuss the needs and merit of a Regional Transportation Committee. A Steering Committee was formed, and in June 2002 the Committee started meeting to consider a Draft Regional Planning Organization and Structure and identify regional projects.

The committee's purpose was to start a coordinated planning effort is needed for the region including the Municipality of Anchorage and the Matanuska-Susitna Borough. Multiple State agencies and local governments have received and are independently pursuing appropriations for transportation improvements. There is a need to coordinate a regional vision to insure that there is planning consistency with regional priorities and needs.

It is envisioned that a Regional Transportation Planning Committee would be formed to supplement planning efforts on behalf of all parties to address regionally significant projects that cross-jurisdictional boundaries. This will provide a framework to take advantage of appropriations for large, regionally significant, transportation projects.