MTP2040

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Anchorage Bowl & Chugiak-Eagle River

Public Review Draft

December 2019

AMATS

ANCHORAGE
TRANSPORTATION
PLANNING

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2040

Metropolitan Transportation Plan

Anchorage Bowl and Chugiak-Eagle River

Prepared for:

Anchorage Metropolitan Area Transportation Solutions

Prepared By:

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RSG

Earthscape

Cambridge Systematics

December 2019

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2040 Metropolitan Transportation Plan

Anchorage Bowl and Chugiak-Eagle River

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To be completed at a later date

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Chapter

1

Introduction

MTP2040

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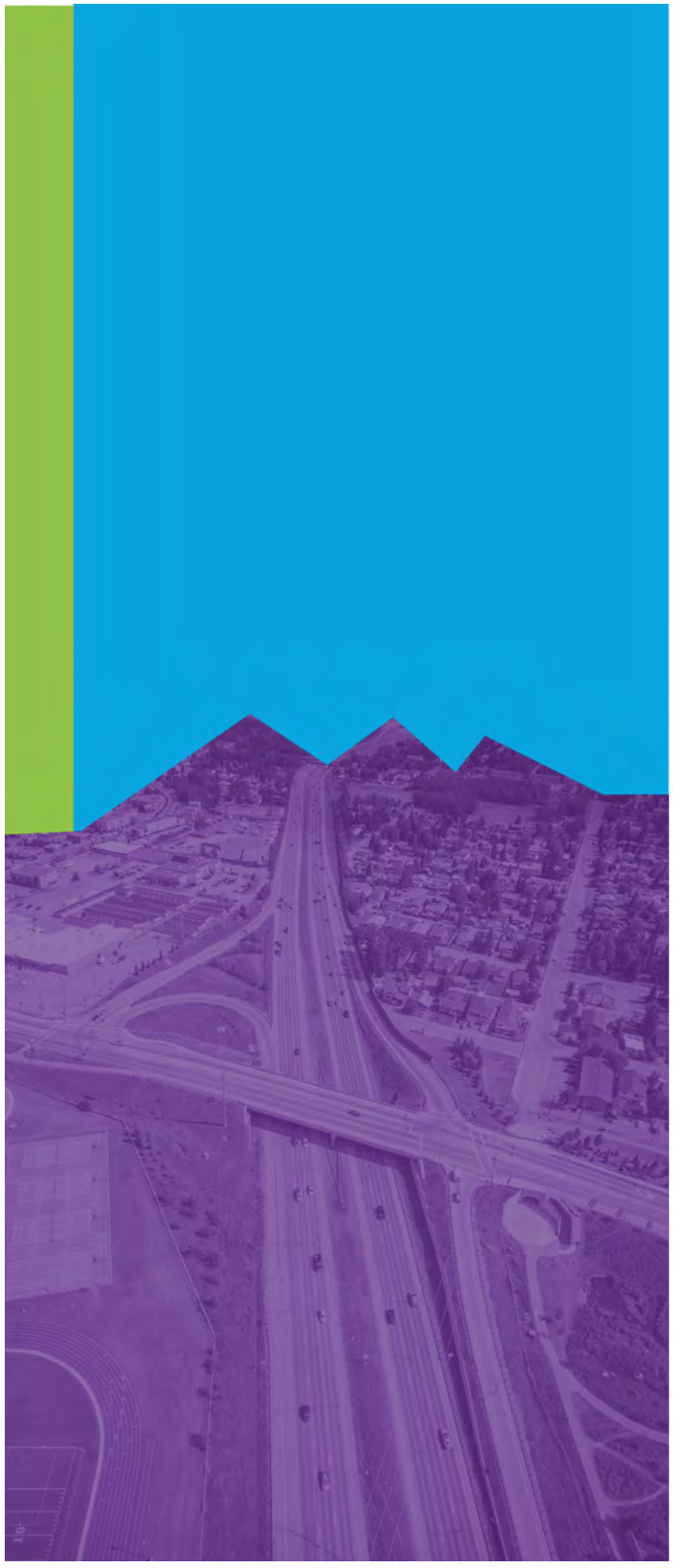
Welcome to the 2040 Metropolitan Transportation Plan (MTP), a long-range transportation plan for the Anchorage Bowl and Chugiak-Eagle River. The MTP looks into the future and identifies transportation improvements to implement our community's vision. It describes the current status of the transportation system, our transportation goals, proposed capital improvements, and a supporting implementation strategy. The 2040 MTP is an update of the 2035 MTP adopted in 2012 and refreshed with the Interim 2035 MTP in 2015.



Message from the Policy Committee Chair

To be added at a later date.

The video is available at http://www.vimeo.com/221656563

Introduction

Anchorage is growing: by 2040, Anchorage's population is expected to grow by 20 percent and employment is expected to grow by 21 percent (Figure 1-1). Our city's population is not just growing – its demographics are also changing. In the future, we can expect greater ethnic and racial diversity, more households with 65 and older residents, and households with fewer children. The overall population is expected to be less transient and families will be increasingly multi-generational. With Anchorage's changing demographics there are expected to be corresponding changes in transportation needs and preferences. These demographic changes are explored more in Chapter 5.

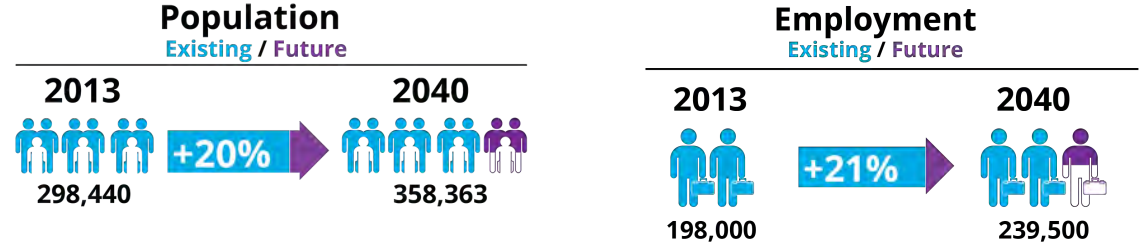
Transportation affects almost all aspects of our lives – it influences the health of residents, facilitates economic development, contributes to environmental quality, and much more. As Anchorage grows and changes, our transportation system will need to respond to those changes in ways that accommodate the needs of its citizens.

The MTP is a blueprint for transportation decision-making over the next 20 years. The plan provides a vision for our future and sets forth goals and specific objectives for achieving that vision. The plan serves as the basis for transportation improvement decision-making that will determine how we get around Anchorage in the years to come. The plan's long-term vision is essential because transportation improvements require long lead time to plan, design and implement. The MTP sets the stage for meaningful future transportation system improvements.

This MTP builds on previously adopted transportation and related plans , including the recently adopted Anchorage Bowl 2040 Land Use Plan, to facilitate multi-modal transportation improvements, with an emphasis on preservation of the existing system, connectivity, mobility, and consideration of land use. This plan was developed with a mix of technical tasks combined with robust public engagement to reflect Anchorage residents' interests and preferences.

When approved the 2040 MTP will supersede the 2035 MTP and the Interim 2035 MTP.

Figure 1-1 Population and Employment Growth



Source: AMATS Socioeconomic Projection and Land Use Allocation Report, April 2016

What is AMATS?

Anchorage Metropolitan Area Transportation Solutions (AMATS) is the federally designated Metropolitan Planning Organization (MPO) responsible for transportation planning for the Anchorage Bowl, Chugiak, Eagle River, and coordination with Native Village of Eklutna, the federally recognized tribe within the AMATS planning area. Figure 1-2 shows the shape and extent of the land that makes up the AMATS planning area. One of the most important roles of AMATS is the preparation and adoption of the MTP. The following primary groups participate in AMATS planning and decision-making activities as shown on Figure 1-3. For more information on AMATS committees, refer to the Public Participation Plan on the AMATS website (http://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/PPP/PPP_Final_PC_Approved_1_2017.pdf)

Figure 1-2 AMATS Boundary

The Policy Committee (PC) is the primary decision-making body for AMATS. The Technical Advisory Committee (TAC) provides recommendations to the PC. AMATS staff, AMATS subcommittees, and the MOA Assembly provide recommendations to the PC through the TAC.

Figure 1-3.AMATS Committee Structure

Transportation Planning Process

The MTP is the primary planning document used by AMATS to guide the long-term development and implementation of Anchorage's transportation system. AMATS must maintain the MTP for its entire planning area. The MTP is federally mandated and must comply with the Statewide and Metropolitan Transportation Planning regulations issued by the U.S. Department of Transportation. The MTP is generally updated every 4 years, allowing AMATS to incorporate the latest data, identify changes affecting travel demand and traffic patterns, and adjust policies and projects based on changing conditions. The MTP is required to have at least a 20-year planning horizon. The MTP frames a plan for transportation throughout the AMATS area and serves as an element of the Municipality of Anchorage Comprehensive Plan for the Anchorage Bowl and Chugiak-Eagle River areas.

AMATS is also responsible for the Transportation Improvement Program (TIP). The TIP is generally a 4-year implementation plan that lists projects and strategies using federal funding over the life of the TIP.

Figure 1-4 summarizes the phases of the transportation planning process.

The MTP is the primary planning document used by AMATS to guide the long-term development and implementation of Anchorage's transportation system.

Figure 1-4 Transportation Planning Process

Guidance for Plan Development

In October 2016, the AMATS Policy Committee gave the MTP project team the following key assumptions and parameters to guide the plan development process:

MTP Update Requirement: AMATS must review and update the MTP at least every 4 years in air quality maintenance areas to avoid a lapse in the MTP Air Quality Conformity Determination.

Air Quality Conformity: The air quality conformity for the current Interim 2035 MTP was approved by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on November 19, 2015, and expires 4 years from that date on November 19, 2019. [A grace period of 1 year is permitted by federal regulations. The 2040 MTP will use this grace period extending the air quality conformity to November 19, 2020.]

FHWA Planning Regulations: The development of the 2040 MTP will follow FHWA planning regulations (23 Code of Federal Regulations [CFR)] 450.322) regarding the development and content of the MTP, and shall draw principally from content provided in the 2035 MTP and Interim 2035 MTP. The MTP must have a horizon year of at least 20 years from the date of FHWA approval of the related Air Quality Conformity Determination.

Conformity: The 2040 MTP will follow Environmental Protection Agency (EPA) regulations for Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects (40 CFR 93[A)], particularly with respect to air quality and transportation modeling, cost estimating, and fiscal constraint, as follows:

- **Air Quality Modeling/Analysis:** Since the approval of the 2035 MTP in 2012, the EPA has designated the Anchorage Bowl as a limited maintenance area for carbon monoxide (CO) and Eagle River as a limited maintenance area for particulate matter less than 10 microns in diameter (PM10). As a consequence, the requirement to meet an emission budget for CO and PM10 has been eliminated, and transportation/air quality monitoring is no longer required to estimate emissions. Thus, there is no requirement for air quality modeling analysis in AMATS MTPs or Transportation Improvement Plans (TIPs). An Air Quality Conformity Determination for the 2040 MTP will be prepared and adopted as part of the 2040 MTP in accordance with the requirements outlined in the

Carbon Monoxide Limited Maintenance Plan.

- **Fiscal Constraint:** Conformity regulations still require a re-examination of project costs to determine whether the MTP is fiscally constrained. Revenue and cost assumptions identified in the 2035 MTP and Interim 2035 MTP will be reviewed and updated as part of the fiscal constraint analysis. Staff will work closely with DOT&PF Central Region in using the financial tool developed for the 2035 MTP and used for the Interim 2035 MTP to demonstrate fiscal constraint, and will review project cost and Maintenance & Operations estimates with DOT&PF Central Region and update as appropriate. [NOTE: Since this guidance was written DOT&PF Central Region is now DOT&PF Anchorage Field Office.]

- **Transportation Modeling:** The AMATS Travel Demand Model updated in 2016 will be used for the preparation of the 2040 MTP. The updated model will be used to confirm the need for projects identified in the 2035 MTP and Interim 2035 MTP, and to identify whether additional projects are required to meet the transportation needs projected to 2040. [Note: Since this guidance was written the 2016 AMATS Travel Demand Model was used for the 2040 MTP.]

- **Socioeconomic Assumptions:** The regional socioeconomic assumptions used for the AMATS Travel Demand Model Update and for this 2040 MTP are provided in the April 26, 2016, report titled "Socioeconomic Projections and Land Use Allocation Report," prepared for AMATS by RSG with The McDowell Group.

- **Horizon Year:** The horizon year for the MTP update is assumed to be 2040.

- **Knik Arm Crossing (KAC) Project:** The AMATS PC expresses its reservations regarding the need, impact, and cost of the KAC project, and asks that the project be revisited as part of the 2040 MTP update process. [NOTE: Since this guidance was provided, the AMATS Policy Committee on August 24, 2017, determined that the KAC project was not to be included in the 2040 MTP.]

- **Goals and Objectives:** The Goals and Objectives in the adopted 2035 MTP and Interim 2035 MTP for the Anchorage Bowl and Chugiak-Eagle River are based on community values as expressed through the latest Anchorage 2020 – Anchorage Bowl Comprehensive Plan (2001) and Chugiak-Eagle River Comprehensive Plan (2006) Update.

MTP Goals and Objectives will be reviewed and confirmed as still relevant and consistent with adopted land use plans, and will be changed as appropriate, following a review of the current Anchorage 2040 Land Use Plan Supplement to Anchorage 2020 – Anchorage Bowl Comprehensive Plan, when adopted. [NOTE: Since this guidance was written, the Anchorage Bowl 2040 Land Use Plan was adopted and used for the 2040 MTP.]

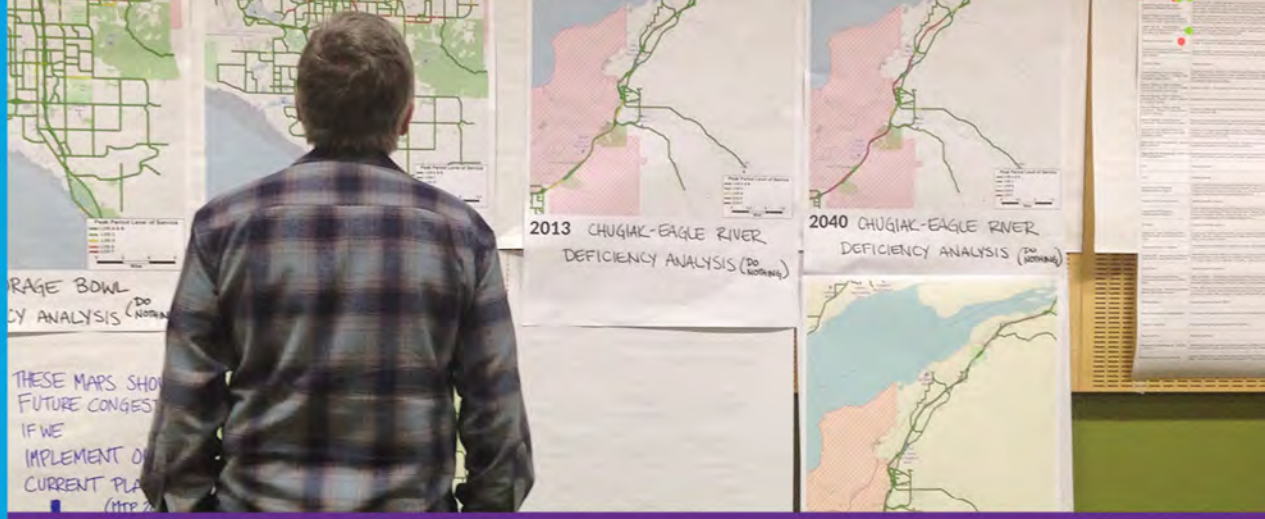
Completed Projects: The 2040 MTP will recognize the completion of projects, strategies, and planning efforts identified in the 2035 MTP and Interim 2035 MTP.

Public Participation: The 2040 MTP public participation activities will focus on AMATS public meetings, a minimum 30-day public review period that includes a work session and public hearing with the Planning and Zoning Commission, and a work session and public hearing with the Municipal Assembly.

FHWA Certification Review: All relevant recommendations and corrective actions from the 2015 Certification Review by FHWA will be addressed and incorporated into the 2040 MTP as applicable.

Chapter

2



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Public Involvement

Stakeholder engagement is an essential component in the development of the 2040 MTP. AMATS provided open and effective stakeholder engagement throughout the plan development process through public meetings, surveys, e-blasts, social media, and the project website.

Chapter

2

PI Snapshot

A Public Involvement Plan (PIP) was developed at the start of the 2040 MTP planning process. The PIP outlined a broad-based public engagement process that provided a variety of communication channels to engage a wide cross-section of the Anchorage Bowl and Chugiak-Eagle River. Methods included in-person public meetings, online interactive surveys, videos, online public meetings, and social media to reach new stakeholders as well as those who do not typically attend public meetings.

In addition to the methods described above the public was given opportunities to review draft documents primarily through existing AMATS committees for public review such as the Policy Committee (PC), Technical Advisory Committee (TAC), and Citizens Advisory Committee (CAC). Broader public outreach efforts were mainly organized around the key phases depicted to right.

Figure 2-1 shows the major steps to develop the MTP.

Key Phases

Issues Identification and System Deficiencies

Kickoff meeting to introduce the MTP process and to obtain input on transportation issues, system deficiencies as well as goals, objectives, and performance measures.

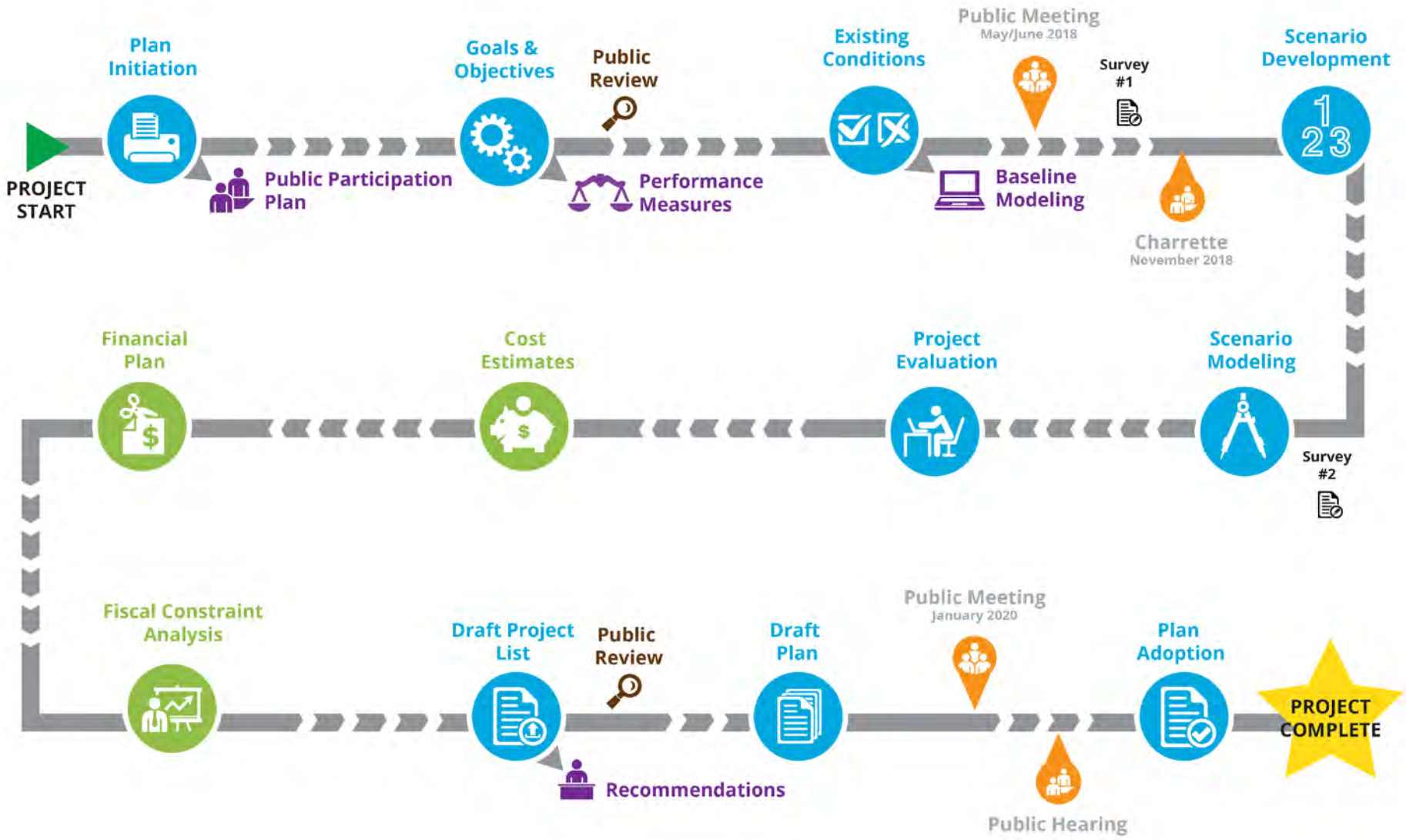
Alternatives Development

Solicited information about the type and location of needed multi-modal improvements through small gorup meetings, interactive exercises, and a survey.

Alternatives Evaluation and Preferred Alternative

Obtain feedback on fiscally-constrained recommendations and implementation plan.

Figure 2-1 Plan Development and Public Participation Process



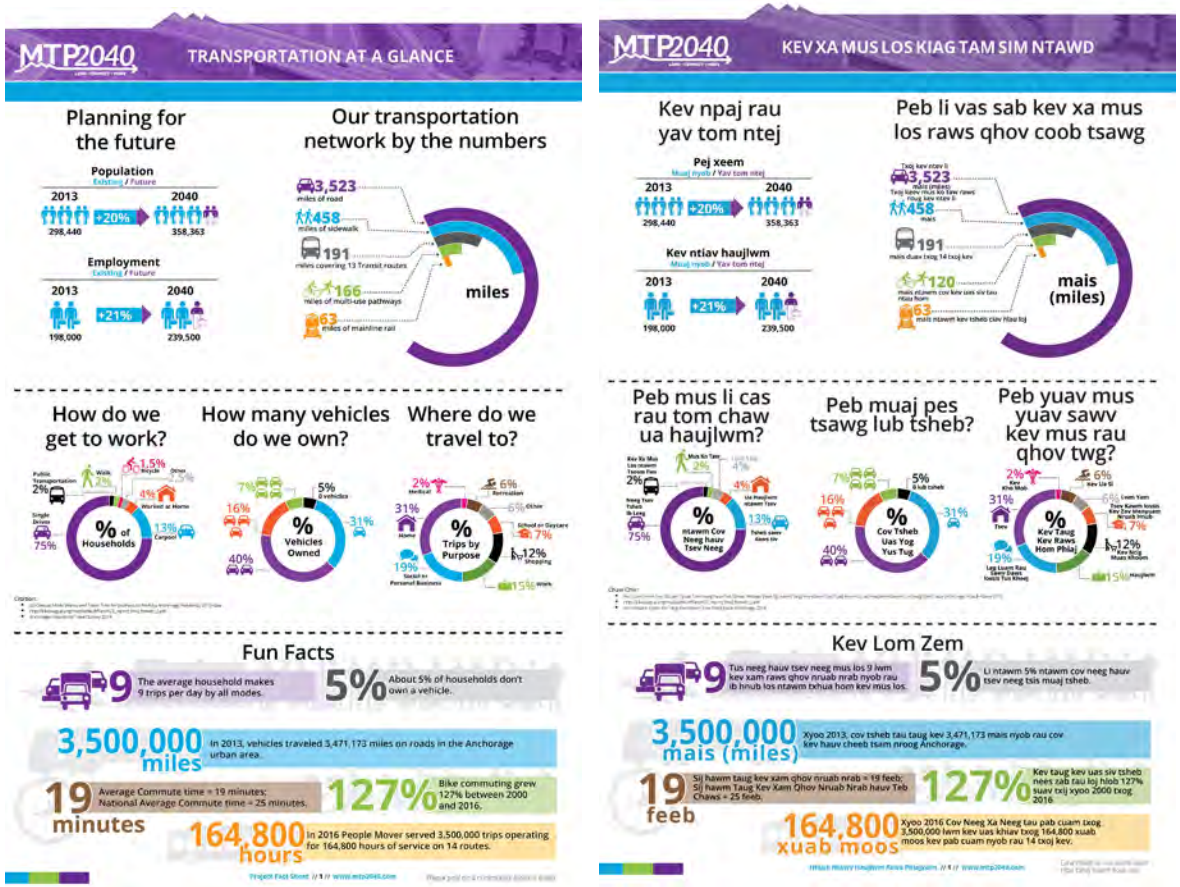
Communication Tools

This section summarizes the communication tools used to provide information to and solicit feedback from the public about the plan.

Fact Sheets/Frequently Asked Questions

For the project kick-off, the project team developed a fact sheet that used infographics to communicate information about Anchorage's existing transportation system (see Figure 2-2). The fact sheet was made available in English, Hmong, Tagalog, Spanish, and Korean. The project team also developed a Frequently Asked Questions handout that provided general plan information and explained how the public can comment on the proposed plan (see Figure 2-3).

Figure 2-2 Project Fact Sheets in English and Hmong



Fact sheets are available online at http://mtp2040.com/library.html

Figure 2-3 Frequently Asked Question Handouts in English and Tagalog.

FREQUENTLY ASKED QUESTIONS MTP2040

What is the MTP? Why does it matter to me?

The Metropolitan Transportation Plan (MTP) is the plan for transportation improvements over the next twenty years. The plan is updated every four years by the Anchorage Metropolitan Area Transportation Solutions (AMATS). AMATS oversees the planning and programming of Federal dollars to improve the surface transportation system in the Anchorage Bowl and Chugiak-Eagle River.

The 2040 MTP will identify transportation needs that reflect our region's changing population and demand for housing, land use, and transportation choices. The MTP will develop multi-modal recommendations for transportation improvements needed within the region over the next 20 years. By prioritizing transportation projects, the 2040 MTP will create a safe and efficient transportation network that will provide transportation choices, support the local economy, and enhance our quality of life.

How is the MTP updated?

The MTP will be developed in six phases, and public input plays a role in each phase. The graphic below shows the main phases and key activities:

MTP2040 PROJECT PHASES AND MILESTONES

Public Input

1 2 3 4 5 6

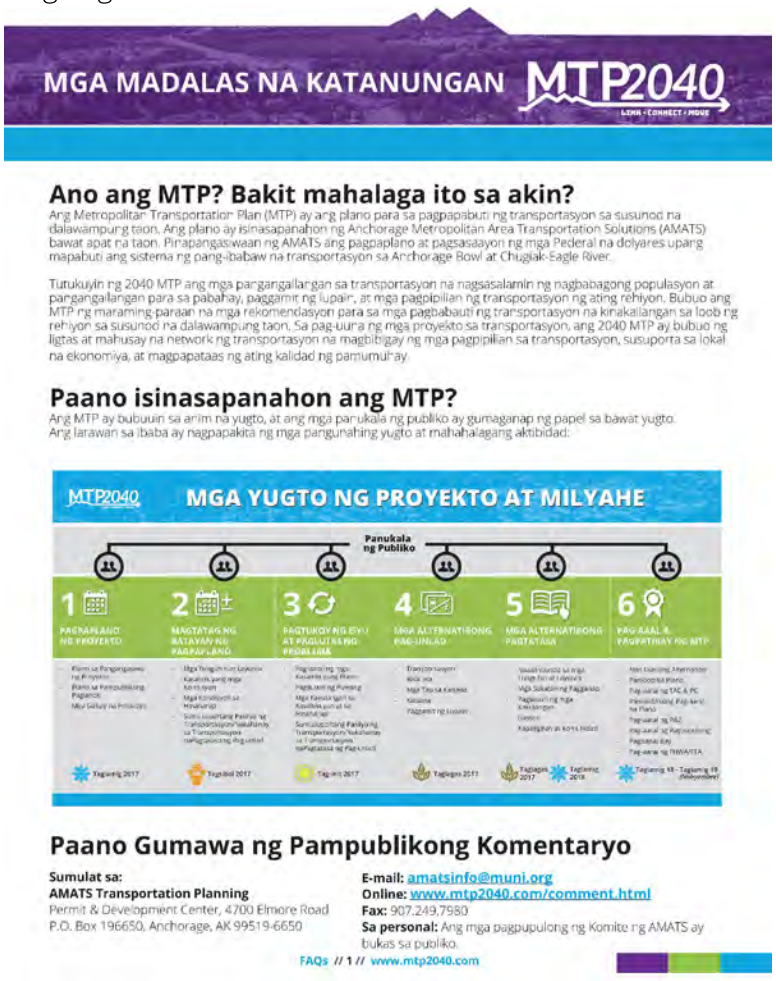
Winter 2017 · Spring 2017 · Summer 2017 · Fall 2017 · Fall 2017 Winter 2018 · Winter 18 - Winter 19 (Rewended)

How to Make a Public Comment

Mail to:
AMATS Transportation Planning
Permit & Development Center, 4700 Elmore Road
P.O. Box 196650, Anchorage, AK 99519-6650

E-mail: amatsinfo@muni.org
Online: www.mtp2040.com/comment.html
Fax: 907.249.7980

FAQs // 1 // www.mtp2040.com



MGA MADALAS NA KATANUNGAN MTP2040

Ano ang MTP? Bakit mahalaga ito sa akin?

Ang Metropolitan Transportation Plan (MTP) ay ang plano para sa pagpapabuti ng transportasyon sa susunod na dalawampung taon. Ang plano ay isinasapanahon ng Anchorage Metropolitan Area Transportation Solutions (AMATS) bawat apat na taon. Pinapangasiwaan ng AMATS ang pagpaplano at pagsasayon ng mga Federal na dolyares upang mapabuti ang sistema ng pang-ibabaw na transportasyon sa Anchorage Bowl at Chugiak-Eagle River.

Tutukuyin ng 2040 MTP ang mga pangangailangan sa transportasyon na nagsasalamin ng nagbabagong populasyon at pangangailangan para sa pabahay, paggamit ng lupain, at mga pagpipilian ng transportasyon ng ating rehiyon. Bubuo ang MTP ng maraming paraan na mga rekomendasyon para sa mga pagbabauti ng transportasyon na kinakailangan sa loob ng rehiyon sa susunod na dalawampung taon. Sa pag-uuna ng mga proyekto sa transportasyon, ang 2040 MTP ay bubuo ng ligtas at mahusay na network ng transportasyon na magbibigay ng mga pagpipilian sa transportasyon, susuporta sa lokal na ekonomiya, at magpapataas ng ating kalidad ng pamumuhay.

Paano isinasapanahon ang MTP?

Ang MTP ay bubuuin sa anim na yugto, at ang mga panukala ng publiko ay gumaganap ng papel sa bawat yugto. Ang larawan sa ibaba ay nagpapakita ng mga pangunahing yugto at mahahalagang aktibidad:

MTP2040 MGA YUGTO NG PROYEKTO AT MILYAHE

Panukala ng Publiko

1 2 3 4 5 6

Paano Gumawa ng Pampublikong Komentaryo

Sumulat sa:
AMATS Transportation Planning
Permit & Development Center, 4700 Elmore Road
P.O. Box 196650, Anchorage, AK 99519-6650

E-mail: amatsinfo@muni.org
Online: www.mtp2040.com/comment.html
Fax: 907.249.7980
Sa personal: Ang mga pagpupulong ng Komite ng AMATS ay bukas sa publiko.

FAQs // 1 // www.mtp2040.com

Handouts are available online at http://mtp2040.com/library.html

Videos

Three videos were produced for the 2040 MTP webpage:

Kickoff and Deficiency Analysis: The first video (Figure 2-4) introduced the MTP process through vignettes of local people describing their vision for future transportation. This video encouraged people to visit the project website and sign up for future updates. The video was circulated on AMATS' social media channels.

Alternatives: The second video advertised the public charrette and encouraged people to attend in person or via the online open house. The video was circulated on AMATS' social media channels.

Draft MTP: The third video highlighted the public review draft MTP and how the project selection process reflects what the project team heard from stakeholders throughout the planning process. The video was circulated on AMATS' social media channels.

Figure 2-4 MTP Video

To view the video, please visit https://vimeo.com/254782422

Interactive Website

The project's official website, www.mtp2040.com, shown in Figure 2-5, provided electronic information and documentation about the MTP and the plan development process. The website allowed people to participate in surveys and watch MTP informational videos. It also allowed them to share their thoughts with the project team via a comment form. All events were advertised on the website, and all project meeting materials and documents were available as well. In 2018, the MTP website won an Award of Excellence from the Alaska Chapter of the Public Relations Society of America.

Figure 2-5 MTP Interactive Website

E-blasts

The email list was built by identifying key stakeholders and sending them an invitation to sign up for 2040 MTP updates. E-blasts about upcoming MTP-related events and opportunities for public comment were emailed to the project and AMATS contact lists. By the end of the project, there were approximately 325 email addresses on the project contact list, over 660 on the AMATS e-mail list, and 19 E-blasts were sent.

Social Media

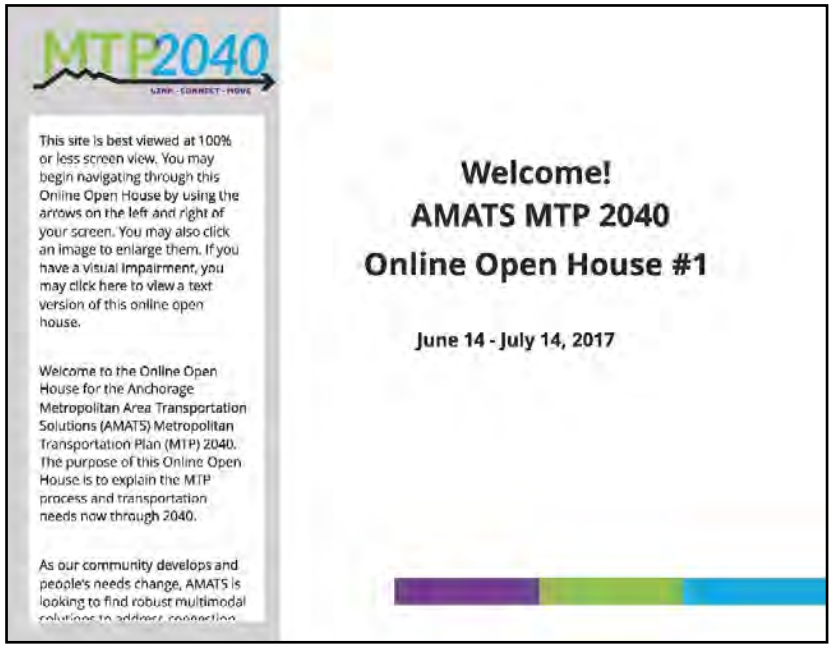
Facebook events were created for public meetings and advertised via boosted posts (a paid Facebook post) focused on audiences in Eagle River and Anchorage. Opportunities for public comment were published on AMATS' social media sites. MTP information was also shared on DOT&PF's Facebook site. In addition, public meetings #1 and #3 were broadcast via Facebook Live for people who could not attend the meeting in person.

Public and Online Meeting

The project team held three rounds of public and online meetings.

Meeting #1, Summer 2017: This round of meetings focused on introducing the plan, describing the planning process, and presenting the draft goals and needs assessment. Meetings were held in the Anchorage Bowl and Chugiak-Eagle River, as well as online (see Figure 2-6). Approximately 30 attendees participated in the meetings. An open house format was used, with posters available, followed by a presentation and question and answer session. During the presentation, audience members were able to participate and give feedback using their mobile devices. Results were tabulated instantly and displayed for the entire audience.

Figure 2-6 Online Open House #1



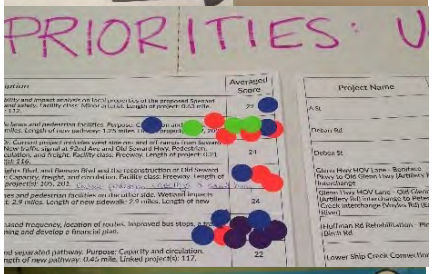
Meeting #2 (Charrette), November 2017: This 3-day charrette was held to gather input on potential solutions for addressing the issues and needs of the Anchorage metropolitan transportation system and to formulate draft alternatives. The charrette provided a variety of engagement opportunities—weekend and weekday (Saturday, Monday, and Tuesday) as well as daytime and evening. The public were invited to drop by any time during the 3-day charrette to engage with staff from AMATS, MOA Public Transportation Department, DOT&PF, and HDR; to participate in individual planning exercises; and to engage with fellow residents during several break-out sessions exploring solutions and strategies to resolve issue areas identified earlier in the MTP process. The charrette included a series of breakout groups with discussion focused around specific modes and topics:

- Public Transportation
- Bicycle
- Pedestrian
- Roadways
- Land Use/Transit Connection
- Emergency Services
- Human Services Coordinated Transportation
- Freight

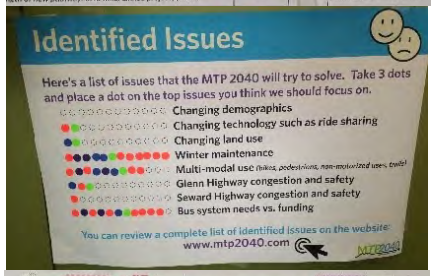
Charrette attendees also provided input through a series of open house stations (see Figure 2-7). Two evening community public meeting opportunities were offered, as well as a work session for AMATS TAC and PC members. Overall, 86 people signed in over the 3-day period, with the majority attending sessions on Saturday, November 4. Mayor Ethan Berkowitz also attended the charrette and provided support for the planning process.

Figure 2-7 Charrette Activities

"Play" Money



Dot Exercise - Prioritize Projects



Dot Exercise - Prioritize Issues

Creation Station

Meeting #3, November 2019: The final public meeting presented the draft plan. Content to be added later.

Each meeting was advertised a minimum of 15 days prior to the meeting using the following methods:

- Email notifications to the project and AMATS contact lists
- Dates added to community calendars, including ADN and Alaska Public Media
- Flyers posted at the YMCA and local libraries
- Notices posted through Federation of Community Councils and What's Up ListServ emails
- Advertisements via paid media, including:
  - ADN print ad
  - ADN online ad
  - Alaska Public Media paid radio advertisement
  - AMATS Facebook post
  - Chugiak-Eagle River Star online ad
  - DOT&PF Facebook post
  - Facebook ads

Surveys

Two surveys were conducted for the MTP 2040 Update. Survey summaries were posted to the project website

Survey #1: In conjunction with the first public and online meeting, a MetroQuest survey was conducted. A MetroQuest survey is comprised of a series of standardized screens that guide individuals through key project information and request input from the public and stakeholders. The first MTP MetroQuest survey included the following topics:

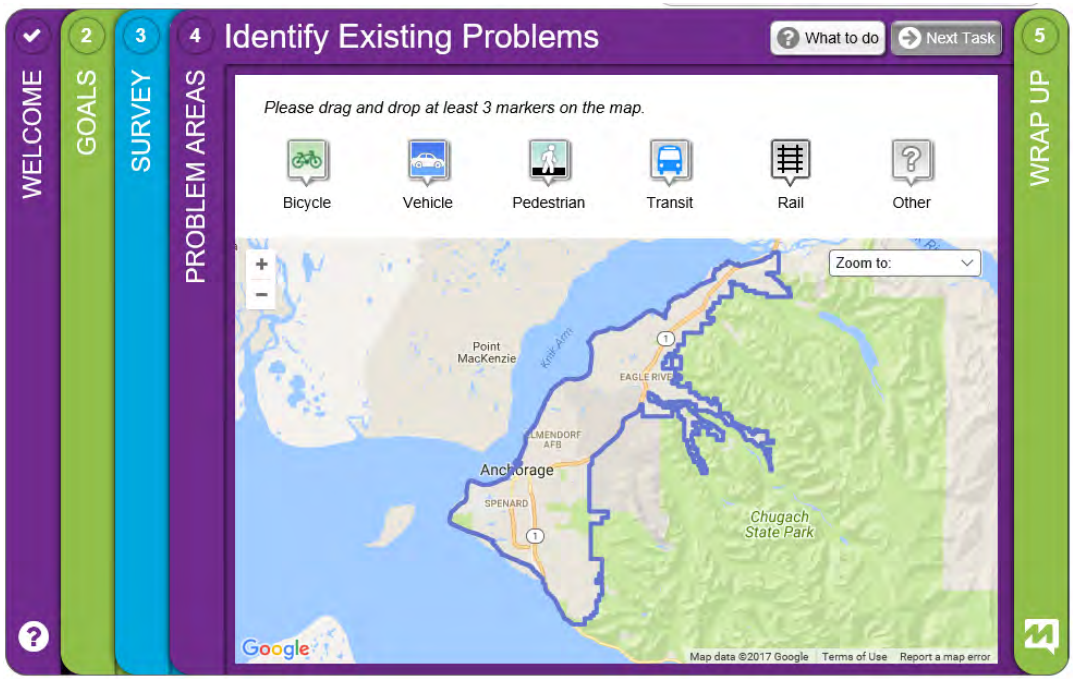
- **Welcome – MTP 2040:** Visitors were introduced to the project and presented with pertinent facts about the MTP and how it will benefit the community.

- **Goals** – Share Your Values: Visitors were asked to rank draft goals and objectives according to their priorities, and to provide comments on those goals, if desired. They could also suggest additional priorities.

- **Survey** – Tell Us What You Think: Visitors ranked (on a scale from 1 to 5 stars) whether they like, dislike, or are neutral on several transportation topics. Topics included ways of meeting travel needs, obstacles to solving transportation issues, and important trends and opportunities. They could also provide comments and suggest additional items.

- **Problem Areas** – Identify Existing Problems: Visitors were asked to drag and drop at least three markers to identify existing problems with our transportation network and potential solutions (see Figure 2-8). They could

Figure 2-8 Metroquest screen from Survey #1



also provide comments.

- **Wrap Up** – About You: Visitors were asked to provide a variety of demographic information about themselves (optional) and were given an opportunity to provide final comments.

Survey #2: A second MetroQuest survey (Figure 2-9) was held after the charrette to obtain feedback on the draft alternatives developed at the charrette. This survey included the following five topics:

- **Welcome** – 2040 MTP: Visitors were introduced to the two alternatives being considered for the 2040 MTP and presented with links to detailed descriptions of those alternatives.

- **Alternative Rating** – Meeting Transportation Goals: Visitors were presented with two alternative scenarios, Building on Today and Pushing the Envelope (later renamed to Focus on Moving Motor Vehicles and Include Broader Transportation Solutions), and asked to rate each scenario (from 1 to 5 stars, worst to best). Five indicators were provided for each alternative, and visitors were shown how each indicator might perform under that alternative ("worse than today" or "better than today"). Visitors were asked to rate how they liked each of the indicators (from 1 to 5 stars, worst to best) and provide comments, if desired.

- **Potential Strategies:** Visitors were asked to rate seven potential strategies to implement each of the two previous scenarios (Building on Today and Pushing the Envelope). They ranked the strategies on a scale (from 1 to 5 stars) on whether they like, dislike, or are neutral on those strategies. Strategies included options such as Congestion Management, High-Occupancy Vehicle Lanes, Better Pedestrian Access, Autonomous Vehicles, Increasing the Cost of Parking, Expanding Transit Service, and more. They were encouraged to comment and suggest additional strategies.

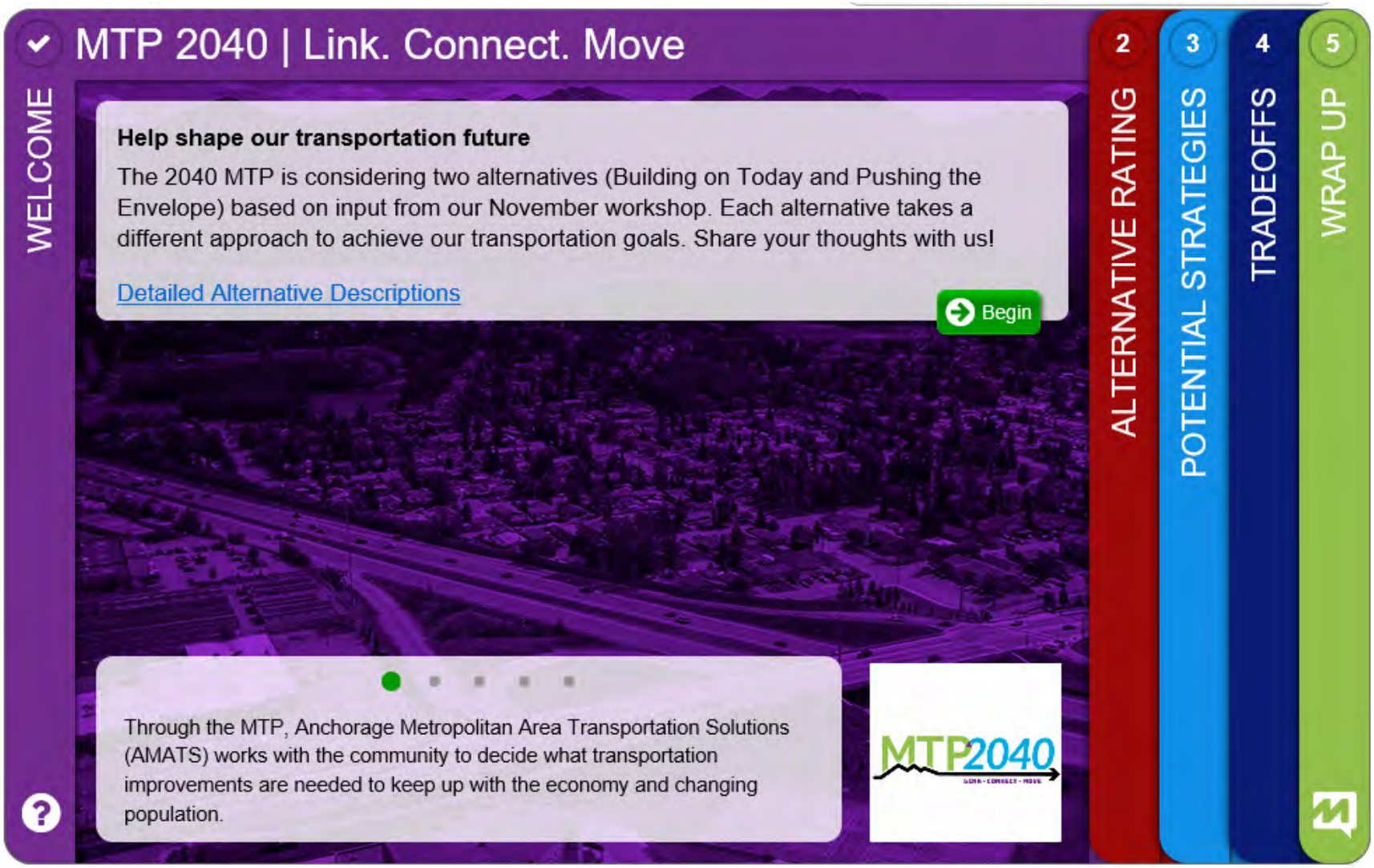
- **Tradeoffs:** Visitors were shown five high-traffic areas identified by the MTP 2040 modeling results (U-MED Area Access, Glenn Highway, Northern Lights, A/C Street, and Minnesota Drive) and a pair of options ("tradeoffs") for each area. They were asked to indicate which option they would prefer (and to rate the strength of that preference), or whether they were "neutral" regarding that tradeoff. They were also allowed to provide optional comments.

- **Wrap Up** – About You: Visitors were asked to provide a variety of demographic information about themselves (optional) and were given an opportunity to provide final comments.

Almost 500 people responded to our surveys.

They submitted 853 comments.

Figure 2-9 Metroquest screen from Survey #2



Listening Posts

To reach people who do not usually participate in public meetings or planning processes, the team staffed listening posts at existing events. A booth was hosted by one or two staff members equipped with project materials, posters, and online surveys on iPads (see Figure 2-10). Six listening posts were held at community events/locations: Anchorage Transportation Fair (2017, 2018, and 2019), Mountain View Street Fair, Jitters in Eagle River, and the Eagle River Bear Paw Festival.

Figure 2-10 Listening Post

Comments

Comments were accepted throughout the MTP 2040 planning process at the AMATS email address: AMATSInfo@ci.anchorage.ak.us. XXX comments were received.

Other

The project team reached out to the public in other ways, including posting information about events on Anchorage Daily News (ADN) and the Alaska Public Media community calendars, posting flyers at the YMCA and local libraries, having information distributed via the What'sUp and Federation of Community Council listservs, placing ads in the ADN (online and print) and Chugiak-Eagle River Star, and purchasing radio advertisements through Alaska Public Media. A chronology of the public outreach activities can be found in Appendix B. Figure 2-11 highlights how the 2040 MTP has addressed some of the public comments.

Figure 2-11 Comment Overview

AMATS and MOA Reviews and Approval

Throughout the planning process, the AMATS committees reviewed and approved draft technical documents to provide guidance to the project team. This review process included opportunities for the public to listen to committee discussions and provide input directly to the committees. The project team first provided draft deliverables to the TAC. The TAC reviewed each draft, and considered comments from the various AMATS committees and the general public (including written comments and comments provided during TAC meetings). Once the TAC approved the draft, it was advanced to the PC for their approval. As part of the approval process, the public were also provided opportunities to submit written comments or speak at the PC and TAC meetings about the draft material. A document became final only after PC approval.

Several joint work sessions were held as part of the review and approval process to provide members of different committees an opportunity to discuss MTP-related issues. Every work session was open to the public.

The plan review and approval process produced two draft iterations of the MTP: the Public Review Draft Plan and the Public Hearing Draft Plan. The Public Review Draft Plan was released on TBA , which began an intensive public comment period. During that time, the recommendations contained in the draft plan were discussed extensively at a number of public forums, including Public Meeting #3 (discussed earlier in this chapter). The comments received were used to revise the Public Review Draft Plan and produce a Public Hearing Draft Plan. A comment response summary, provided to AMATS committees for review and approval, summarized the changes made to the plan during this process.

Two formal public hearings were held: one for the MOA Planning and Zoning Commission and the other for the Municipal Assembly. The public was also able to provide comment at AMATS TAC and PC meetings that considered approval of the Public Hearing Draft.

The Municipal Assembly and AMATS PC reviewed and adopted the Public Hearing Draft Plan on XXX . The accompanying Draft Air Quality Conformity Determination, discussed in Chapter 9, was approved by the AMATS PC on XXX and by the Federal Highway Administration and Federal Transit Administration on XXX.

Outreach to Specific Groups

The 2040 MTP project team took special measures to ensure inclusion of traditionally under-represented populations, policy makers, and regulatory/resource agencies.

Traditionally Under-represented: The MTP wanted to involve minority, low-income, and limited-English-proficiency populations into the transportation decision-making process. To increase participation by underserved populations, several tools were used including:

- Translating the Fact Sheet into Spanish, Tagalog, Korean, and Hmong. Meetings were held in transit-accessible locations,
- Dedicating a focus group session during the charrette on the needs of the traditionally under-representated, and
- Email outreach.

The project team also coordinated with local Alaska Native organizations.

Policymaker Participation: Regular updates and work sessions involving the Anchorage mayor and the rest of the AMATS PC were conducted as part of the planning process. The active involvement of these policymakers served to provide informed communications to their constituencies as well as to return vital feedback to the MTP team.

Regulatory/Resource Agencies: State and local resource agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation were consulted during the MTP's Public Review process. The intent of this meeting was to solicit input on potential environmental mitigation measures and strategies to be considered in conjunction with implementation of the transportation projects listed in the MTP. The list of agencies is available on page 8-18.

Visualization Techniques

TThe use of graphics in a plan is also a federal requirement. The 2040 MTP used videos, along with graphics, to help engage people. Examples of maps and graphics used throughout the planning process include congestion-level maps, maps of recommended roadway projects, charts to present data, and graphics to depict a variety of topics. Figure 2-12 shows a graphic used on the 2040 MTP website while Figure 2-13 shows a slide used in Public Meeting #1.

Figure 2-12 Graphic from Website

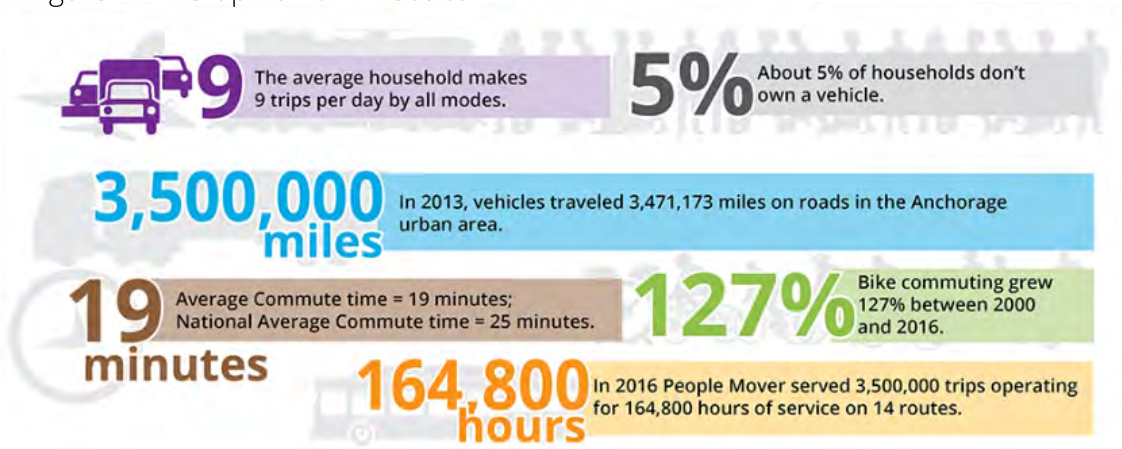


Figure 2-11 Slide from Public Meeting #1

Chapter

3

Plan Goals, Objectives, and Performance Measures

MTP2040

LINK - CONNECT - MOVE

The 2040 MTP establishes a set of goals and objectives that are developed based on local plans, with public involvement, designed to address federal transportation planning goals and factors, and provide a means for performance based planning.

This chapter outlines the 2040 MTP goals and objectives and confirms they are consistent with current transportation planning regulations.

Chapter

3

Developing Goals and Objectives

Goals provide general guidelines about what the community intends to achieve through the transportation plan, while objectives define the strategies to attain the identified goal.

The basis for the 2040 MTP goals and objectives are those developed for the 2035 MTP and confirmed by the Interim 2035 MTP for the Anchorage Bowl and Chugiak-Eagle River. Those goals were refined to make them more measurable and to minimize redundancies (i.e., having the same measure for multiple objectives). They were refined based on public input and to also have a more direct relationship with the Moving Ahead for Progress in the 21st Century Act (MAP-21) (Public Law 112-141) and Fixing America's Surface Transportation Act (FAST Act) (Public Law 114-94) national goals, planning factors, and local comprehensive plan goals (see Figure 3-1). These goals (Figure 3-2) and objectives are the foundation from which recommended project and policies will be developed. and approved

Figure 3-1 Goal Development

Figure 3-2 2040 MTP Goals

2040 Goals and Objectives

Goal 1 Preserve the Existing System

Maintain the transportation system in a state of good repair.

1A. Maintain and rehabilitate the existing transportation system to achieve and maintain a state of good repair for all modes.

Goal 2 Improve Safety

Increase the safety and security of the transportation network.

2A. Reduce vehicle, pedestrian, and bicyclist crashes, especially those resulting in traffic fatalities and serious injuries.

2B. Decrease emergency response time.

2C. Reduce vulnerability and increase resiliency of transportation infrastructure from natural hazards and disasters.

2D. Minimize conflicts between freight and other motorized and non-motorized travelers.

VISION ZERO ANCHORAGE

Goal 3 Improve Travel Conditions

Develop an efficient multi-modal transportation system to reduce congestion, promote accessibility, and improve system reliability.

3A. Decrease travel time.

3B. Improve, as necessary, expressway, arterial, and collector roads and intersections to safely and efficiently handle projected traffic.

3C. Establish an adequate number of access points from subdivisions to adjacent higher-order streets.

3D. Improve the existing transportation system efficiency through the implementation of effective and innovative transportation system management (TSM), transportation

demand management (TDM), and Intelligent Transportation System (ITS) strategies.

3E. Promote bicycle, pedestrian, and transit use.

3F. Improve accessibility to major education, recreation, employment, commercial, health care, and other public facilities.

3G. Enhance the physical connectivity between neighborhoods by increasing the number of roadway, pedestrian, bicycle, and transit connections.

3H. Reduce congestion.

3I. Reduce the passenger vehicle miles traveled (VMT) and passenger vehicle hours traveled (VHT) per capita.

3J. Increase competitiveness of transit.

3K. Improve year-round mobility.

3L. Improve incident clearance time.

3M. Improve system reliability for all modes.

Goal 4
Support the Economy

Develop a transportation system that supports a thriving, sustainable, broad-based economy.

4A. Optimize the transportation system to meet the needs of the Port of Alaska, Ted Stevens Anchorage International Airport, the Alaska Railroad, the military bases, employment centers, and industrial and commercial areas, as well as enhancing intermodal capabilities.

4B. Enhance travel and tourism.

4C. Promote a dynamic transportation system that supports the local and regional economy and job growth.

4D. Set policy and plan for new technology such as autonomous vehicles and electric vehicles.

Goal 5
Promote Environmental Sustainability

In developing the transportation network, protect, preserve, and enhance the community's natural and built environment and quality of life, including the equity of all users and social justice, while considering our northern climate and supporting planned land use patterns.

5A. Promote transportation improvements that provide for the needs of traditionally underserved populations.

5B. Preserve and improve air quality to maintain the health and welfare of citizens.

5C. Reduce or mitigate storm water impacts of surface transportation.

5D. Use coordinated transportation and land use planning techniques that support intermodal connections to reduce reliance on auto trips.

5E. Coordinate transportation and land use decisions to support livable northern communities.

5F. Minimize adverse impacts on existing communities, such as neighborhood through-traffic movements, speeding, noise, and light pollution, etc.

5G. Minimize and mitigate impacts on the natural environment, such as water resources, fish and wildlife habitat, watersheds and wetlands, and parklands.

5H. Enhance aesthetics through transportation improvements consistent with community character.

5I. Match street design to the use and character of the community/ neighborhood through Complete Streets, recognizing that characters may vary from primarily commercial to primarily residential and from primarily urban to primarily rural.

Goal 6
Quality Decision-Making

Make sound public investments.

6A. Prioritize the projects within the MTP to optimize the benefit-cost ratio.

6B. Consider the life-cycle costs of projects when evaluating and selecting them within the MTP.

6C. Optimize benefits of capital expenditures.

6D. Continue to improve regional cooperation and planning to address important transportation issues.

6E. Reduce unnecessary project delivery delays (which add to project costs) through efficient coordination.

6F. Coordinate planning efforts across disciplines (such as transportation, land use, economic development, emergency management, parking management, public health, and the military) and geographic areas.

Federal Planning Requirements

The MTP is required to meet current federal transportation planning requirements when the plan is written and approved. Development of the 2040 MTP was guided by regulations implementing the FAST Act, which was passed on December 4, 2015. The FAST Act has a 5-year authorization and extends through Federal fiscal year 2020 (September 30, 2020).

MAP-21, signed into law in 2012, was a 2-year authorization to govern United States federal surface transportation spending. MAP-21 reinforced the eight planning factors introduced by SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users; 2005), and established a performance- and outcome-based program with an objective for states and MPOs to invest in projects that will make progress toward national performance goals for the Federal highway program. The FAST Act also continues the national goals (and themes) from MAP-21. These goals include:

- Safety
- Infrastructure condition
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays

The FAST Act continues MAP-21's overall performance management approach and added two additional factors. The 10 planning factors that metropolitan areas have to consider in their long range transportation planning process are listed in Table 3-1.

The AMATS MTP is consistent with the national transportation program, addresses priority issues, and leverages funding opportunities and initiatives incorporated in the national program. This update was prepared in accordance with the federal requirement that AMATS update its MTP every 4 years.

Table 3-1 shows the relationship between the national planning factors and the 2040 MTP goals.

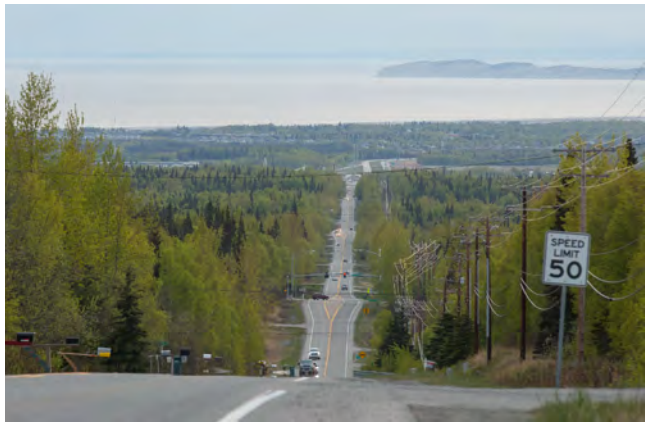


Table 3-1 Comparison of FAST Act Planning Factors to 2040 MTP Goals

FAST ACT Planning Factor	2040 MTP Goal
Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.	4, 6
Increase the safety of the transportation system for motorized and non-motorized users.	2
Increase the security of the transportation system for motorized and non-motorized users.	2
Increase accessibility and mobility of people and freight.	3, 4
Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	5, 6
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	3, 4, 5
Promote efficient system management and operation.	3
Emphasize the preservation of the existing transportation system.	1
Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation	2, 5
Enhance travel and tourism.	4

Performance Measures and Targets

Under MAP-21 and later updated with the FAST Act, Congress directed FHWA and FTA to develop a set of Performance Measures that address safety, infrastructure condition, system performance, traffic congestion, on-road mobile source emissions, and freight movement. These performance measures are to be used for a data-driven process to increase transparency of federal funding and provide a framework for data driven decisions. Through various rulemakings FHWA and FTA developed performance measures that State DOTs, MPOs, and Transit Providers who receive federal funding are required to incorporate into their planning processes. MPOs are given an option to set their own targets or support the State DOTs with their targets. AMATS has elected to support the Alaska DOT in their FHWA targets and set targets for the FTA required measures.

Table 3-2 shows the Federally required performance measures and approved targets for AMATS.

Figure 3-2 2040 Relationship between Goals, Performances Measures, and Targets

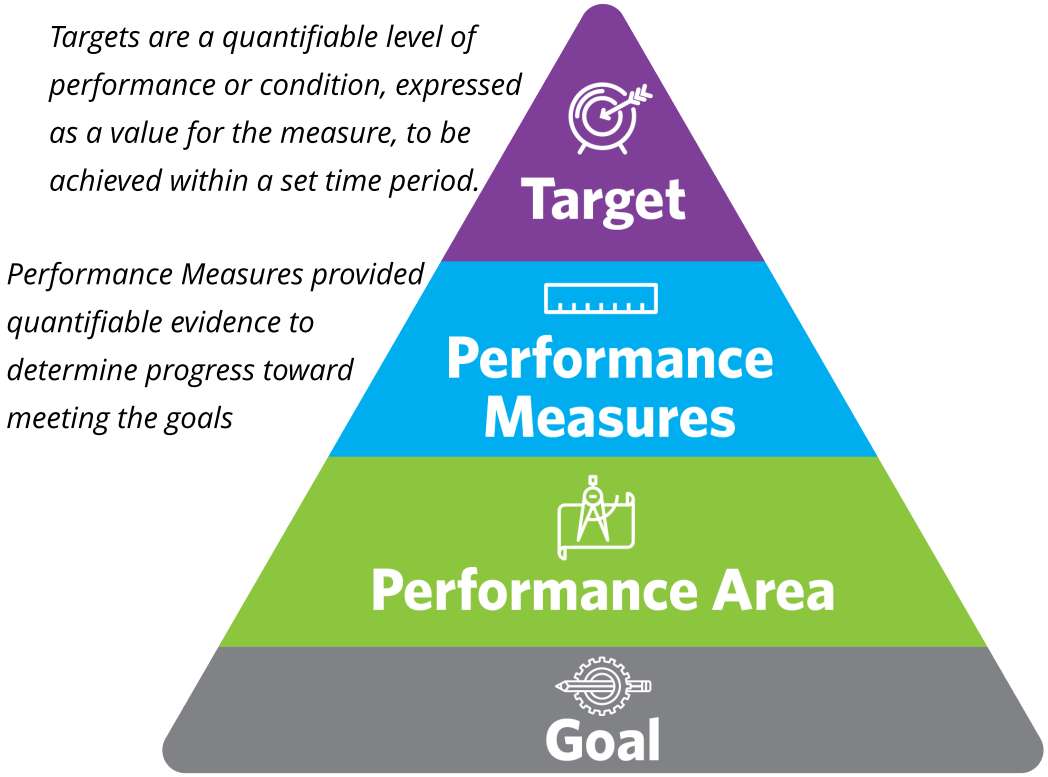


Table 3-2 Federally required performance measures and approved targets

FHWA Goal	Performance Area	Performance Measure	2018 Targets	2019 Targets	2020 Targets	2021 Targets	2022 Targets	2023 Targets	2024 Targets
Safety (PM1)	Injuries & Fatalities	■ Number of fatalities	75	75	80 or less	--	--	--	--
		■ Fatality rate (per 100 million vehicle miles traveled)	1.5	1.5	1.5 or less	--	--	--	--
		■ Number of serious injuries	375	350	400 or less	--	--	--	--
		■ Serious injury rate (per 100 million vehicle miles traveled)	7.5	7	7.5 or less	--	--	--	--
		■ Number of non-motorized fatalities and non-motorized serious injuries	55	55	70 or less	--	--	--	--
Infrastructure Condition (PM2)	Pavement Condition	■ Percentage of pavements on the Interstate System in Good condition	20%	20%	20%	20%	--	--	--
		■ Percentage of pavements on the Interstate System in Poor condition	10%	10%	10%	10%	--	--	--
		■ Percentage of pavements on the non-Interstate NHS in Good condition	15%	15%	15%	15%	--	--	--
		■ Percentage of pavements on the non-Interstate NHS in Poor condition	15%	15%	15%	15%	--	--	--
	Bridge Condition	■ Percentage of NHS bridges classified as in Good condition	40%	40%	40%	40%	--	--	--
		■ Percentage of NHS bridges classified as in Poor condition	10%	10%	10%	10%	--	--	--
Performance of the NHS, Freight, and CMAQ Meaures (PM3)	Performance of the National Highway System	■ Percent of person miles traveled on the Interstate System that are reliable	92%	92%	92%	92%	--	--	--
		■ Percent of person miles traveled on the non-Interstate NHS that are reliable	70%	70%	70%	70%	--	--	--

Table 3-2 Federally required performance measures and approved targets cont.

FHWA Goal	Performance Area	Performance Measure	2018 Targets	2019 Targets	2020 Targets	2021 Targets	2022 Targets	2023 Targets	2024 Targets
	Freight Movement/ Economic Vitality	■ Truck Travel Time Reliability Index	2.0	2.0	2.0	2.0	--	--	--
	Congestion Reduction	■ Annual Hours of Peak-Hour Excessive Delay Per Capita*	N/A	N/A	N/A	N/A	--	--	--
		■ Percent of non-Single-Occupant Vehicle Travel*	N/A	N/A	N/A	N/A	--	--	--
	Environmental Sustainability	■ On-Road Mobile Source Emissions Reduction - Carbon Monoxide	20	20	40	40	--	--	--
		■ On-Road Mobile Source Emissions Reduction - PM_{10}	2	2	4	4	--	--	--
FTA Goal	**Performance Area**	**Performance Measure**	**2018 Targets**	**2019 Targets**	**2020 Targets**	**2021 Targets**	**2022 Targets**	**2023 Targets**	**2024 Targets**
Transit Asset Management	Rolling Stock	■ Bus	--	--	12%	20%	24%	10%	8%
		■ Cutaway Bus	--	--	38%	9%	n/a	4%	21%
		■ Mini-Van	--	--	1%	1%	1%	1%	1%
		■ Van	--	--	1%	1%	1%	1%	1%
		■ Passenger Railcars	--	0%	--	--	--	--	--
		■ Locomotives	--	28%	--	--	--	--	--
	Equipment	■ Non Revenue/Service Automobile	N/A	N/A	33%	26%	26%	26%	26%
		■ Truck and other Rubber Tire Vehicles	N/A	N/A	100%	100%	100%	100%	100%
		■ Truck & Rubber Tired	N/A	38%	--	--	--	--	--
		■ Steel Wheel Vehicle	N/A	47%	--	--	--	--	--
		■ Automobile	N/A	42%	--	--	--	--	--

Table 3-2 Federally required performance measures and approved targets cont.

FTA Goal	Performance Area	Performance Measure	2018 Targets	2019 Targets	2020 Targets	2021 Targets	2022 Targets	2023 Targets	2024 Targets
	Facilities	■ Administration	--	--	1%	1%	1%	1%	1%
		■ Maintenance	--	--	1%	1%	1%	1%	1%
		■ Parking Structure	--	--	1%	1%	1%	1%	1%
		■ Passenger Facilities	--	--	1%	1%	1%	1%	1%
		■ Admin & Maintenance	--	0%	N/A	N/A	N/A	N/A	N/A
		■ Passenger & Parking	--	0%	N/A	N/A	N/A	N/A	N/A
	Infrastructure	■ Track	--	2.59%	--	--	--	--	--
Safety (Transit)	Fatalities	■ Total number of reportable fatalities and rate per total vehicle revenue mile by mode**	N/A	N/A	--	--	--	--	--
	Injuries	■ Total number of reportable injuries and rate per total vehicle revenue miles by mode**	N/A	N/A	--	--	--	--	--
	Safety Events	■ Total number of reportable events and rate per total vehicle mile by mode**	N/A	N/A	--	--	--	--	--
	System Reliability	■ Mean distance between major mechanical failures by mode**	N/A	N/A	--	--	--	--	--

Note: N/A means that a target is not required for that year. -- means that a target is not set yet, but will be at a later date.

* Targets are not required for AMATS until after January 1, 2022

** Targets are not due until after July 20, 2020

Air Quality

Federal funding for local transportation projects is statutorily tied to achieving and maintaining minimum National Ambient Air Quality Standards (NAAQS). The AMATS region currently meets requirements for all six air pollutants for which there are standards. However, levels of PM-10 and CO sometimes approach or exceed standards. Although a standard has not been established for benzene, it is also a concern to area residents.

The Anchorage Bowl urbanized area is designated as a CO Maintenance Area. On January 7, 2013, the Environmental Protection Agency redesignated Eagle River area as a PM_{10} maintenance area, signifying that the area which historically violated the PM_{10} NAAQS is not in attainment of that standard and has an EPA-approved PM_{10} air quality maintenance plan to remain so. Because motor vehicles are primary sources of air pollution, AMATS must demonstrate that this MTP will not cause the region to fail to meet standards. Particular attention must be paid to PM_{10}, CO emissions, and compliance with the Anchorage CO Maintenance Plan prepared by the MOA for the CO Maintenance Area and the Eagle River Limited PM_{10} Maintenance Plan. A limited maintenance plan is a maintenance plan option with a streamlined NAAQS compliance demonstration process that EPA allows areas with sufficiently low potential to incur a future exceedance of the applicable NAAQS. This process is known as an Air Quality Conformity Determination and is discussed in detail in Chapter 9.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) is a tool for assuring the transportation planning process is consistent with Title VI of the Civil Rights Act of 1964. Each federal agency is required to identify high and adverse health or environmental effects of its programs on minority populations and low-income populations. As a result, MPOs, like AMATS, have to identify and address disproportionately high and adverse public health and environmental effects of transportation policies, programs, and activities on minority and low-income populations. How these issues are addressed by this plan is discussed in Appendix C.

Safety and Security

The FAST Act expanded on the safety and security provisions contained in SAFETEA_LU and MAP-21. Safety and Security is discussed in Appendix D.

Chapter

4

Existing Conditions

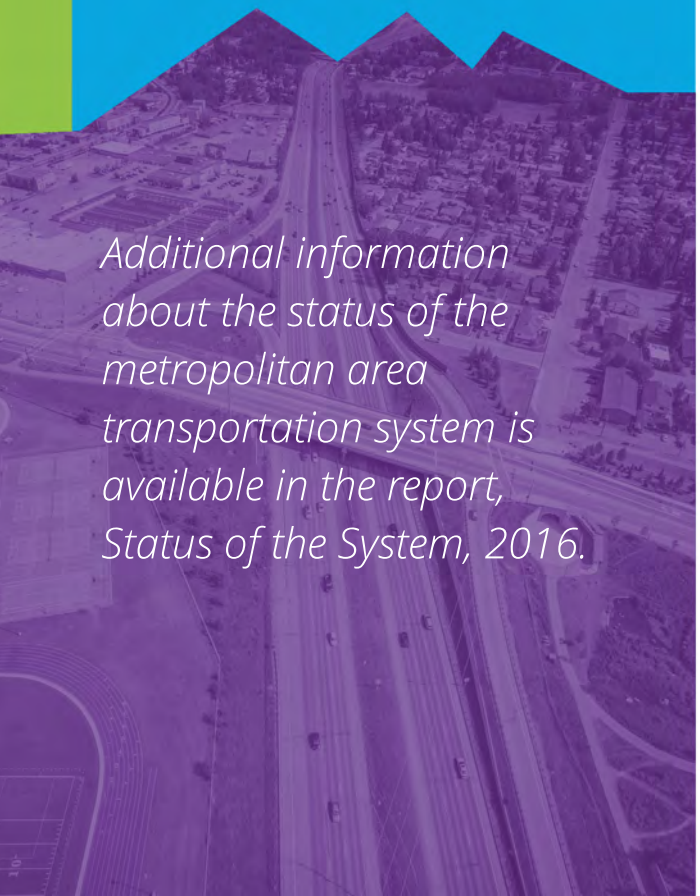
MTP2040

LINK - CONNECT - MOVE

The existing transportation system affects how we live, work, and play in the region. Understanding how the existing system works can help us identify trends that may become more serious problems in the future.

Chapter

4



Additional information about the status of the metropolitan area transportation system is available in the report, Status of the System, 2016.

Transportation System Today

The Anchorage metropolitan area relies on a well-performing transportation system to efficiently move people and goods. At its best, an efficient transportation system can provide a quality experience for all users, enhance their safety, and influence the cost and speed of freight shipments.

The Anchorage transportation system is shaped by infrastructure, available travel options, and how we manage the system. Consistent with the 2035 MTP and Interim 2035 MTP, this chapter describes the overall transportation network and the performance of these essential elements:

- Roads
- Public transportation
- Non-motorized system
- Freight distribution and regional connections

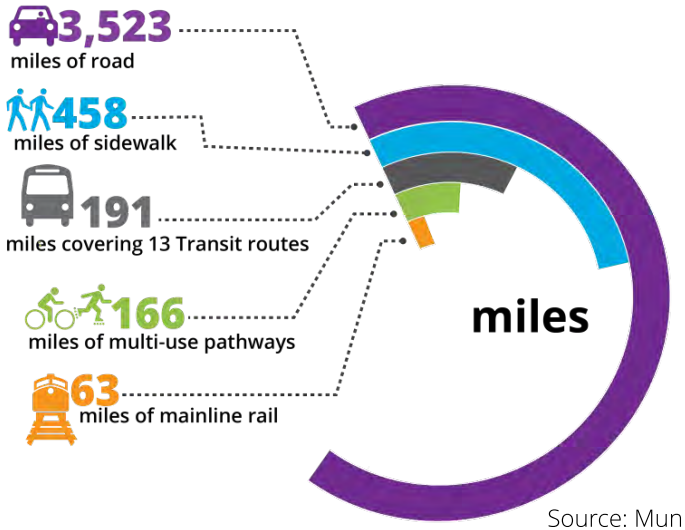
This chapter also describes changes to the system since the adoption of the 2035 MTP in 2012. Additional information about the status of the metropolitan area transportation system is available in the 2016 AMATS Status of the System report.

System Overview

The Anchorage transportation system is made up of a network of roadways, transit facilities and services, rail and goods movement facilities, airports, a seaport, and bicycle and pedestrian facilities. Figure 4-1 depicts the physical attributes of Anchorage's current system. The transportation system allows residents and visitors to safely and efficiently access the goods and services they need.

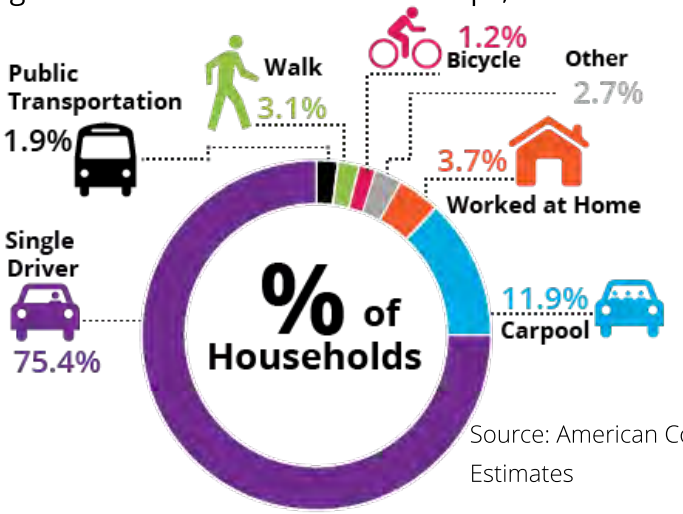
While each mode is important, the latest data from the U.S. Census Bureau highlights the importance of roads for commuting purposes in the Anchorage region (see Figure 4-2). Auto travel remains the dominant mode of travel for work trips, though carpool rates are significant, and other modes, while used less, are important for commute travel in and around Anchorage (see Figure 4-2). The transportation system also supports diverse land uses needed to meet the residential, employment, commercial, service, and recreational needs of the community.

Figure 4-1. Miles of Existing System by Mode



Source: Municipality of Anchorage GIS Data

Figure 4-2. Mode Share for Work Trips, 2015



Source: American Community Survey, 2015, 5-Year Estimates

Transportation Improvements Since 2012

Improvements to the region's roadways are vital for the continued growth and sustainability of the area. Roadway and bridge rehabilitations and expansions have the potential to reduce congestion and increase the mobility and safety of Anchorage residents. Table 4-1 and Figure 4-3 detail the roadway projects completed in the Anchorage Bowl and Chugiak-Eagle River since 2012, when the 2035 MTP was released.

Table 4-1. MTP Road Projects Completed Since 2012 - Anchorage Bowl and Chugiak-Eagle River

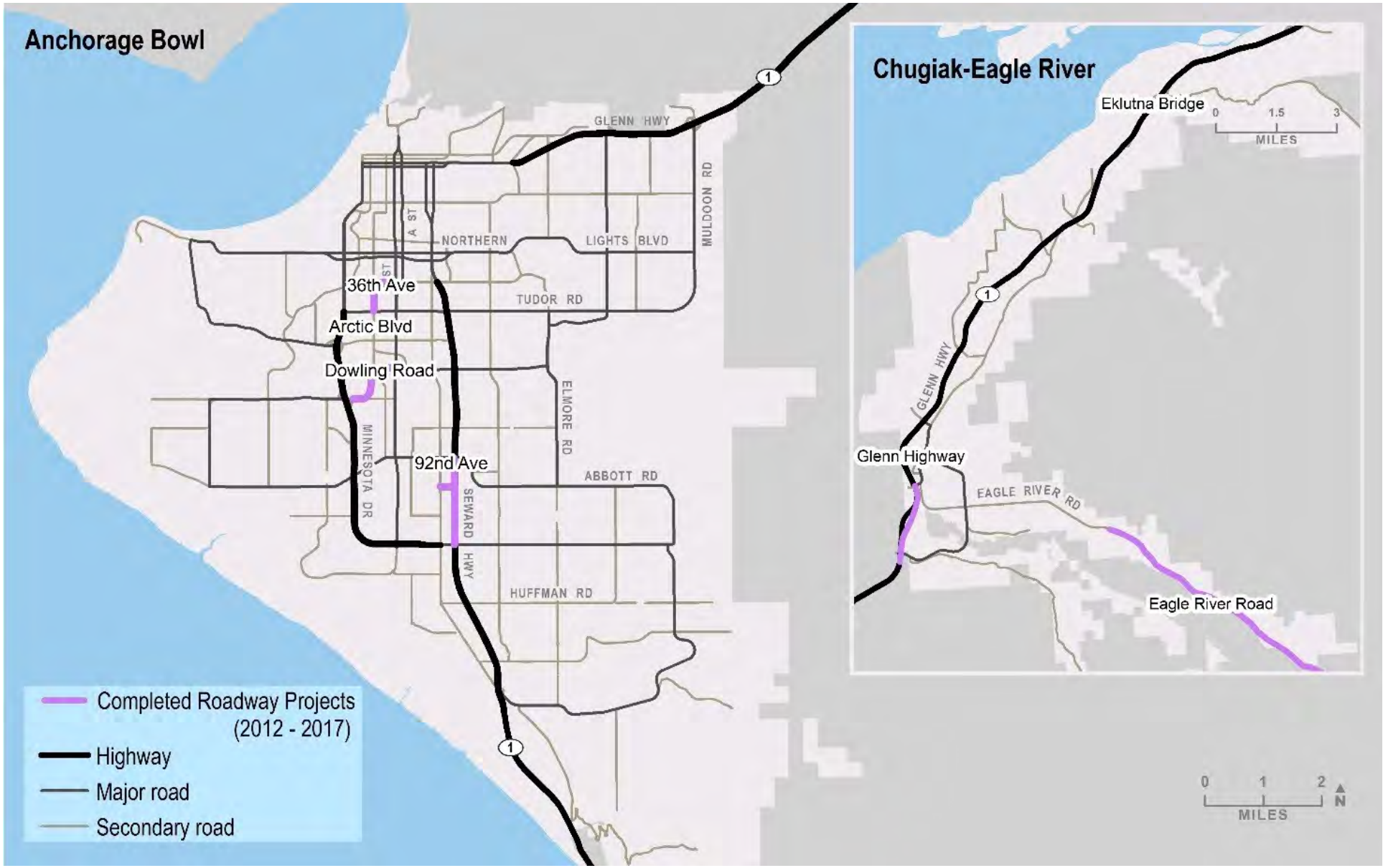
MTP 2035 #	Project Name	Location	Project Description
101	Seward Highway - Dimond Blvd to Dowling Road	Dimond Blvd to Dowling Road	Reconstruction
102	Dowling Road Extension - Phase II	C Street to Minnesota Drive	Add new facility
103	100th Ave Extension – Minnesota Dr to C St	Minnesota Dr to C St	Add new facility
105*	Glenn Hwy – Hiland Rd to Old Glenn Hwy (Artillery Rd – Eagle River)	Hiland Rd to Old Glenn Hwy (Artillery Rd)	Add new facility
106	Muldoon Rd Interchange	Glenn Hwy at Muldoon Rd	Reconstruction
109	Jewel Lake Rd – Dimond Blvd to International Airport Rd	Dimond Blvd to International Airport Rd	Rehabilitation
110	Arctic Blvd Rehabilitation – 36th Ave to Tudor Rd	36th Ave to Tudor Rd	Rehabilitation

* Project is currently in construction.

Table 4-1. MTP Road Projects Completed Since 2012 - Anchorage Bowl and Chugiak-Eagle River cont

MTP 2035 #	Project Name	Location	Project Description
112	Spenard Rd Rehabilitation – Hillcrest Dr to Benson Blvd	Hillcrest Dr to Benson Blvd	Rehabilitation
113	O'Malley Rd – Seward Hwy to Lake Otis Pkwy	Seward Hwy to Lake Otis Pkwy	Reconstruction
122	Eagle River Rd Rehabilitation – MP 5.3-MP 12.6 (Eagle River)	MP 5.3-MP 12.6	Rehabilitation
123	Eklutna River Bridge Rehabilitation/Replacement (Eagle River)	Old Glenn Hwy	Rehabilitation
124	Abbott Rd – Lake Otis Pkwy to Birch Rd	Lake Otis Pkwy to Birch Rd	Rehabilitation
135	Regional Travel Survey	Southcentral Region	Survey
135	Travel Options Report Recommendations	Southcentral Region	Report
135	South Anchorage and Hillside Intersection Study	Nine intersections in South Anchorage and Hillside communities	Study
135	Complete Streets Plan	AMATS	Policy
135	Freeway Incident Management Plan	Glenn Highway	Incident Management Plan

Figure 4-3. MTP Road Projects Completed Since 2012 - Anchorage Bowl and Chugiak-Eagle River



The MOA and DOT&PF have been working together to fund and construct bicycle and pedestrian projects. Since 2012, there have been a number of significant non-motorized projects completed and in construction. Table 4-2 summarizes these projects.

Table 4-2. MTP Non-Motorized Projects Completed Since 2012 - Anchorage Bowl and Chugiak-Eagle River

MTP 2035 #	Project Name	Location	Project Description
503	Northern Lights Blvd	LaHonda Dr to Lois Dr	New Sidewalk
504	Checkmate Dr	Tudor Rd to Emmanuel Ave	New Sidewalk
513	10th Ave	P St to Medfra St	Bicycle Blvd
514	Arctic Blvd	Northern Lights Blvd to Fireweed Lane	Bicycle Lanes
524	Arctic Blvd	Fireweed Lane to 10th Ave	Bicycle Lanes
544	Wisconsin St	Spenard Rd to Northern Lights Blvd	Bicycle Lanes
554	Elmore Rd	Huffman Rd to O'Malley Rd	Shoulder
554	Elmore Rd	DeArmoun Rd to Huffman Rd	Bicycle Lane
555	Hillside Drive/Rabbit Creek Road	Clarks Rd to Abbott Rd	Shoulder
561	Peterkin Ave	Meyer to N. Bunn	Bicycle Blvd
564	Raspberry Rd	Jewel Lake Rd to Minnesota Drive	Bicycle Lanes
573	Boniface Pkwy	Debarr Rd to Carrs	New Sidewalk
606	DeArmoun Rd	Old Seward Hwy to 140th Ave	Bicycle Lane
609	Old Seward Hwy	Rabbit Creek to Hamilton	Bicycle Lane and Shoulder

Table 4-2. Non-Motorized Projects Completed Since 2012 - Anchorage Bowl and Chugiak-Eagle River cont.

MTP 2035 #	Project Name	Location	Project Description
564	Raspberry Rd	Jewel Lake Rd to Minnesota Drive	Bicycle Lanes
573	Boniface Pkwy	Debarr Rd to Carrs	New Sidewalk
606	DeArmoun Rd	Old Seward Hwy to 140th Ave	Bicycle Lane
609	Old Seward Hwy	Rabbit Creek to Hamilton	Bicycle Lane and Shoulder
610	Turnagain Pkwy	Northern Lights Blvd to Illiamna Ave	Shared Road Bicycle Facility
620	4th Ave	Bunnell St to Boniface Blvd	New Sidewalk
N/A	Eagle River Road	VFW Rd to Eagle River Loop	Bicycle Lanes
N/A	Eagle River Loop	Glenn Hwy to Eagle River Rd	Install bike lanes and bike shoulder

Roadways

Anchorage's public roadway network remains the primary resource for the movement of people and goods throughout the region. The importance of regional mobility and economic development cannot be overstated; the latest commute data from the U.S. Census Bureau indicates that driving is the most common mode for accessing employment, with over 75% of employees driving alone and an additional 12% carpooling[1]. The 2014 Regional Household Travel Survey found that 86% of all trips were made by private vehicle[2]. Total travel volume is a function of population and mode choice. According to the 2016 Status of the System report, the average annual population growth rates between 2010 and 2013 averaged 1.3% for the MOA and 2.8% in the Matanuska-Susitna Borough, and traffic on Glenn Highway increased by 1.4%. In total, between 2004 and 2013, the total population of the two regions increased 11%, and traffic on the Glenn Highway increased 15%.

Road Characteristics

Approximately one-third of vehicular travel occurs on the freeway system, and much of the remaining traffic occurs on the region's primary arterials.

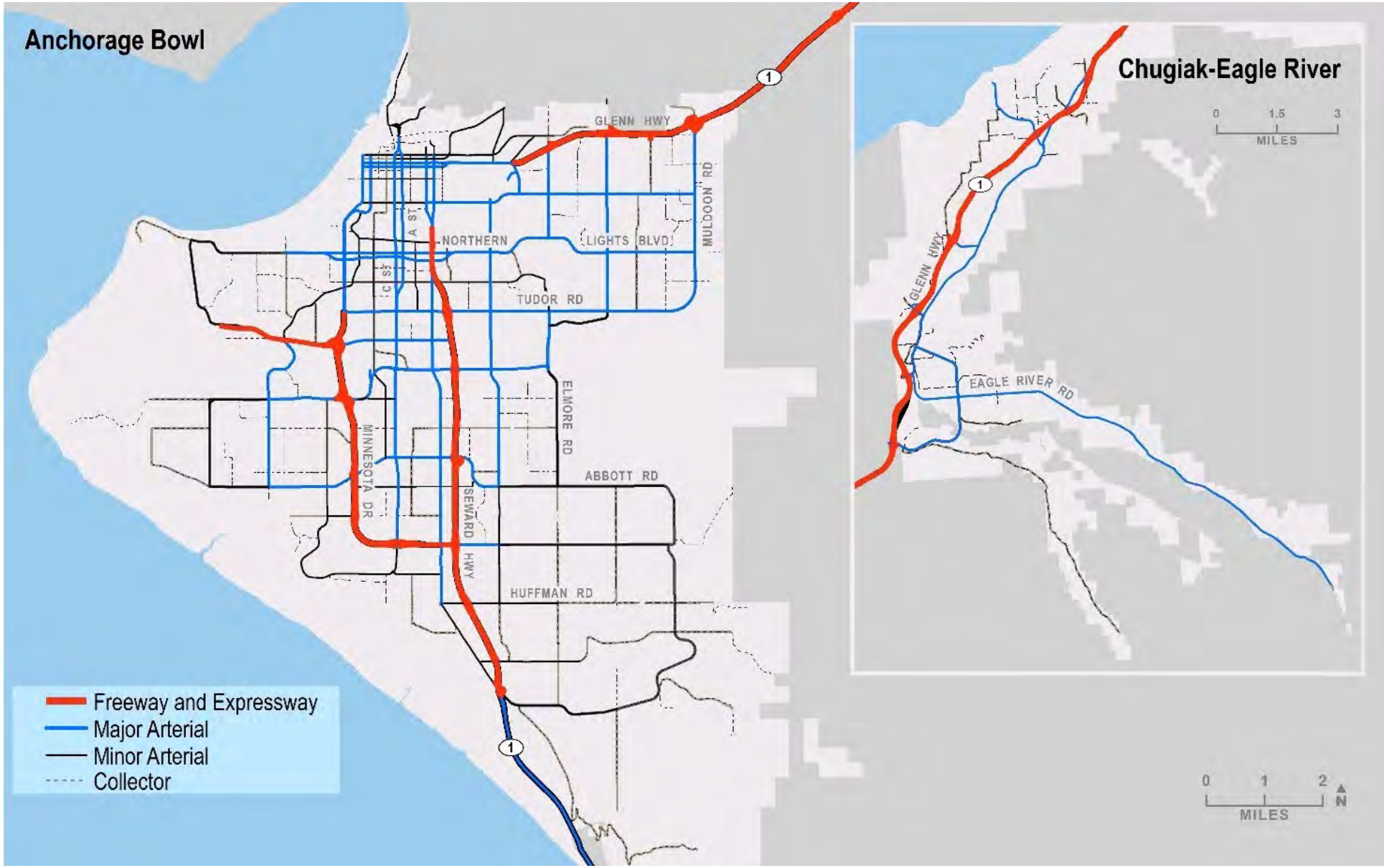
The region's roadway segments can be categorized by functional class , indicating the general capacity and purpose of the roadway, as described in Table 4-3 and shown on Figure 4-4.

Additionally, some of the roadways are designated as part of the National Highway System (NHS), indicating their strategic importance for the movement of goods and people (see Figure 4-5). Road ownership and maintenance are the responsibility of local, state, and federal agencies, as well as private entities. The State of Alaska owns many of the primary roadways that carry heavy traffic volumes, including the majority of the designated NHS roads, but the MOA owns and maintains a higher percentage of the total mileage.

Table 4-3. Road Classification

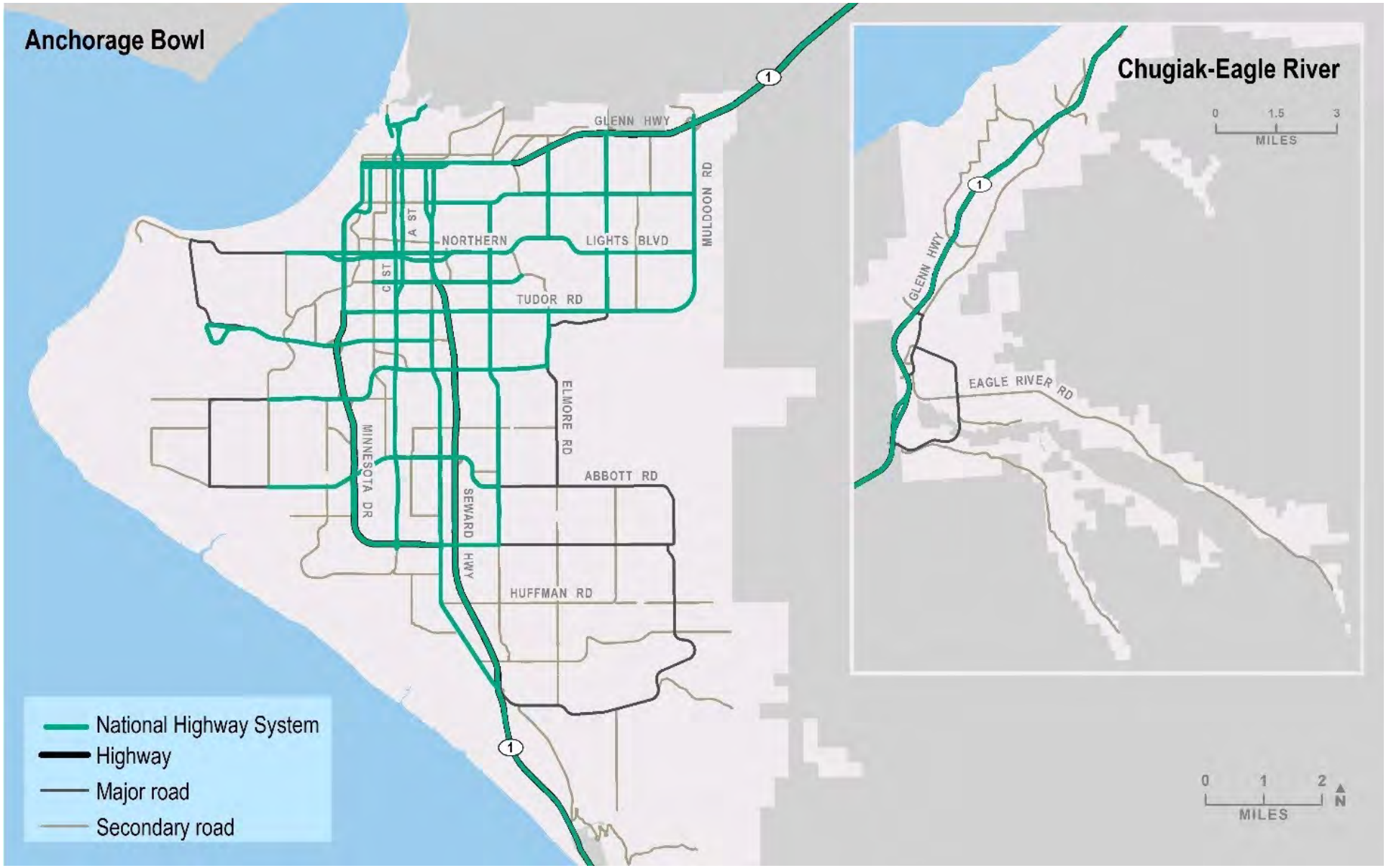
Facility Type	Characteristics	Examples
Freeway	Over 40,000 daily cars, variable number of lanes	Glenn and Seward Highways, Minnesota Drive
Expressway	Over 20,000 daily cars, 4 to 6 lanes	International Airport Road between Minnesota Drive and the airport
Major Arterial	Over 20,000 daily cars, 4 to 6 lanes	Tudor Road, Northern Lights Blvd, Old Seward Highway
Minor Arterial	10,000 to 20,000 daily cars, 2 to 4 lanes	Huffman Road
Collector	2,000 to 10,000 daily cars, 2 to 4 lanes	Baxter and Wisconsin Roads
Local	Less than 2,000 daily cars, 1 to 2 lanes	Neighborhood streets

Figure 4-4. Roadway Functional Classification



Source: Municipality of Anchorage GIS Data; Official Streets and Highways Plan 2014

Figure 4-5. National Highway System



Source: Municipality of Anchorage GIS Data

Roadway Congestion

Congested roadways hinder the ability of residents, employees, and logistics companies to complete daily activities. Reducing congestion and increasing mobility are important in maintaining Anchorage's economic competitiveness and residents' quality of life. This section highlights the average congestion levels, in terms of Level of Service, during commute hours for highways and intersections. Additionally, it discusses the average travel times for key corridors and the effects of collisions on non-recurring congestion.

Highway Level of Service

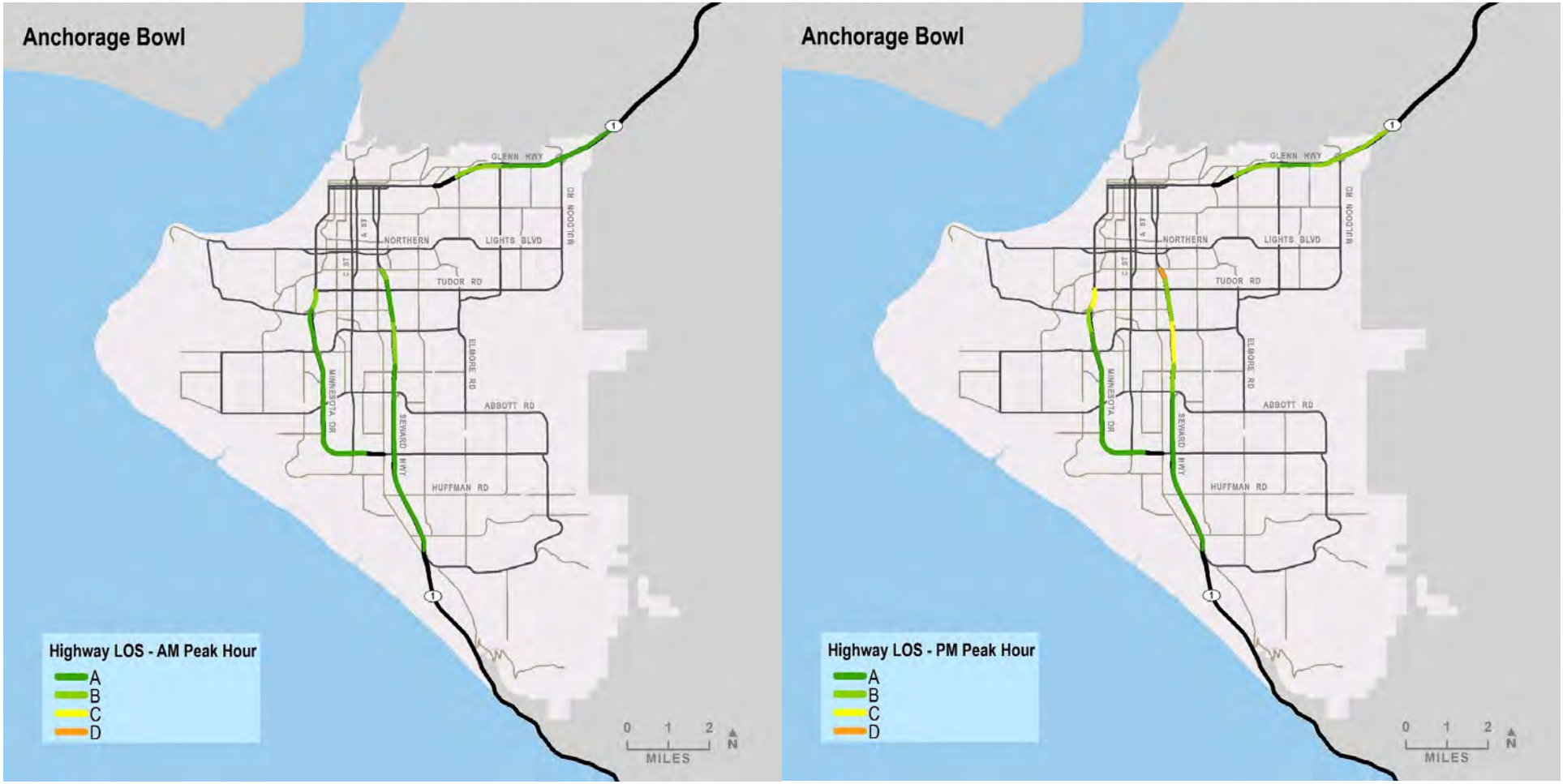
A measure of congestion for roads, where access is limited and flow is continuous, can be expressed using the Highway Segment Level of Service (LOS). The LOS for highways is based on traffic density, in terms of passenger cars per mile per lane, taking into account the freeway geometry and peak traffic volumes. This measure characterizes the extent to which the traffic flow exceeds the design capacity of the roadway. Table 4-4 shows the relationship of density and LOS; anything rated D, E, or F is typically considered congested.

Figure 4-6 shows the morning and afternoon LOS for the highways in the Anchorage region. During the AM peak hour commute, conditions on the main highways in Anchorage are uncongested (above LOS C). For the PM peak hour, Seward Highway experiences congested conditions, with the highest level of congestion occurring on Seward Highway between 36th Avenue and Tudor Road.

Table 4-4. Level of Service Criteria for Highway Segments

Level of Service	Density (passenger cars per hour per lane)	Speed (mph)	Traffic Volume (passenger cars per hour per lane)
A	0-11	65	0-410
B	11-18	65	710-1,170
C	18-26	65	1,170-1,680
D	26-35	60-65	1,680-2,090
E	35-45	52-60	2,090-2,350
F	>45	<52	>2,350

Figure 4-6. Highway LOS, Average AM and PM Peak Hours, 2013



Source: Status of the System Report, 2016, based on Municipality of Anchorage Traffic Department Travel Time Reports, Volumes from DOT&PF Annual Traffic Volume Reports.

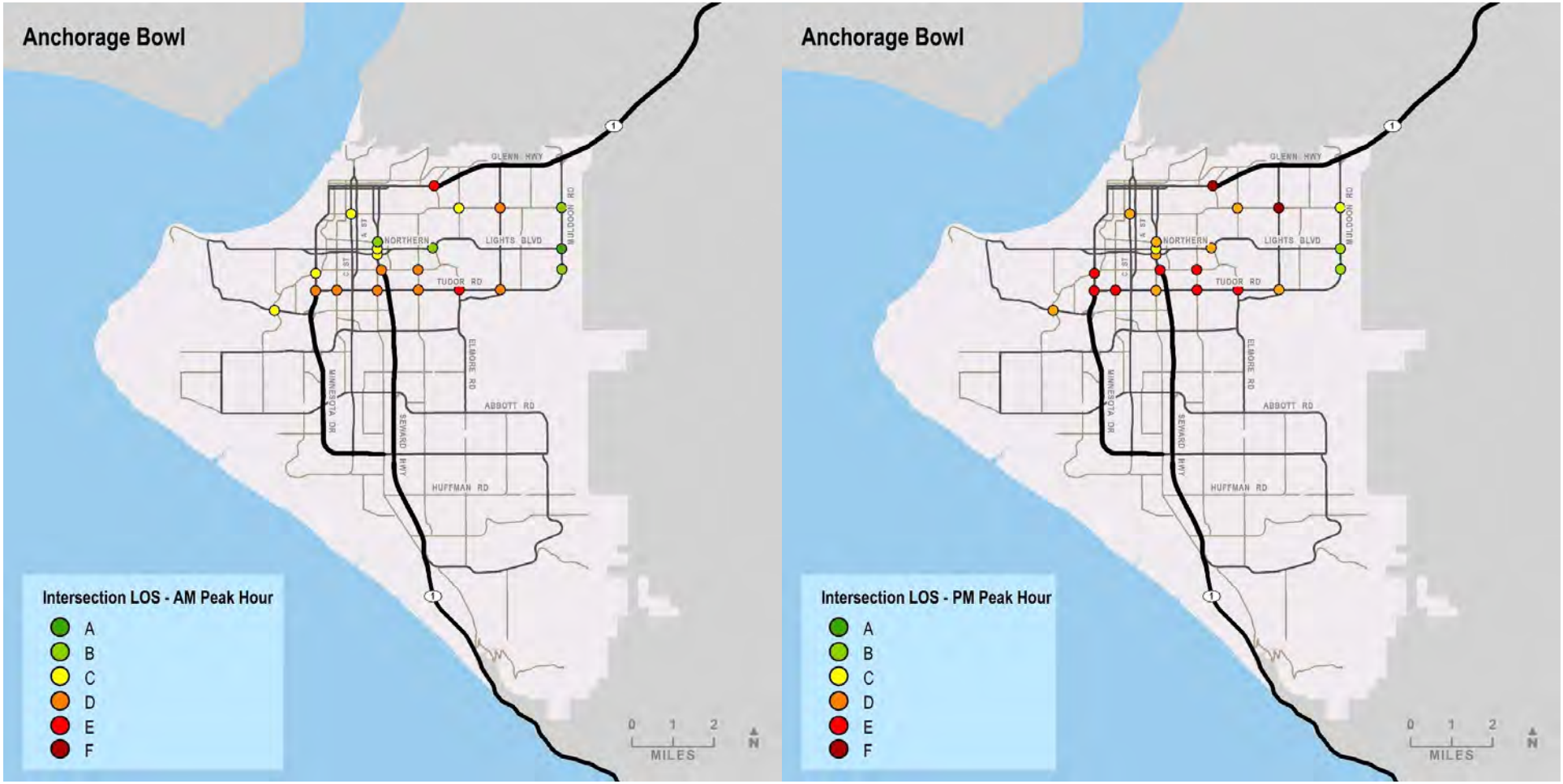
Note: No segments meeting Level of Service E or F were identified

Intersection Level of Service

Intersection LOS evaluates traffic conditions on roadways with traffic signals or stop signs. Similar to highway LOS, this metric reflects congestion levels at intersections, according to the available roadway capacity, speed, or delay experienced. In the case of an intersection, LOS A is uncongested, meaning that all vehicles will move through an intersection during a single green-light cycle, while an LOS of F is saturated, indicating that drivers have to wait for multiple cycles or at least experience significant delay. It is important to note that LOS measures delay, which is correlated with congestion, but long delays could be caused by other factors such as poorly timed traffic signals, multi-modal traffic, or particular operational conditions.

Figure 4-7 shows the intersection LOS for the peak hour morning and afternoon commutes in 2013. In general, intersection delay in the afternoon is worse than during the morning commute periods. In the morning, the intersections with the highest level of delay, with an LOS E rating, are Glenn Highway at Airport Heights Drive, and Tudor Road at Elmore Road. Tudor Road experiences LOS D for much of the corridor. Unsurprisingly, similar to when the Glenn Highway becomes stop controlled, the Seward Highway experiences an LOS of D when it encounters a traffic signal at 36th Avenue. In the afternoon, all intersections experience the same or worse delay than in the morning. Two intersections are LOS F (Glenn Highway at Airport Heights Drive and Boniface Parkway at Debarr Road), and intersections along the Tudor Road corridor experience LOS D or E.

Figure 4-7. Intersection LOS, Average AM and PM Peak Hours, 2013

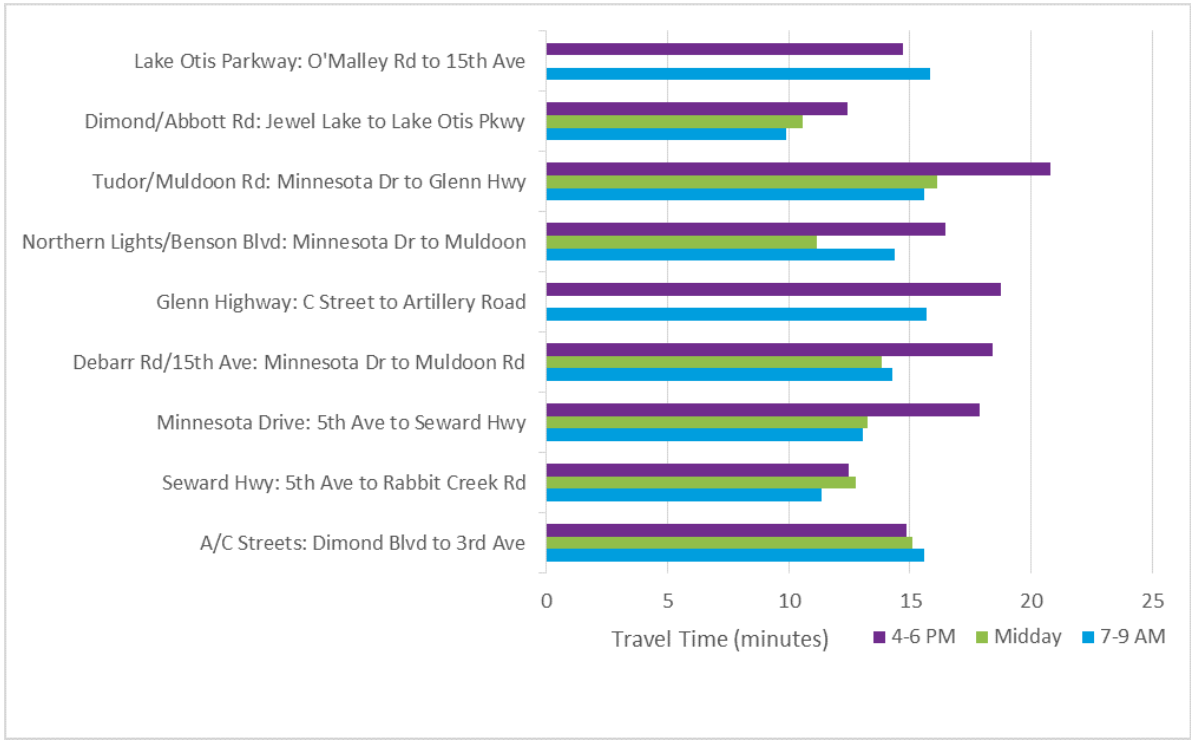


Source: Status of the System Report 2016, based on Municipality of Anchorage Traffic Department Travel Time Reports, Volumes from DOT&PF Annual Traffic Volume Reports.

Roadway Travel Times

Corridor travel time is another method for assessing roadway conditions and congestion levels. This measure shows the average time it takes to travel from an origin to a destination, and can be used to assess vehicular, transit, or non-motorized travel times. Generally, longer travel times and more congestion occur during commuting hours, when many users are getting to and from home and work. Travel times during these peak periods and all times of day should be minimal for optimal roadway conditions. To track travel time changes over time, the AMATS Status of the System reports collects travel times on the same corridors for each report. The latest travel time data by time of day, collected in 2013 by MOA, is displayed in Figure 4-8. A comparison of afternoon travel time data from previous years is displayed in Figure 4-9.

Figure 4-8. Automobile Travel Times by Time of Day, Fall 2013



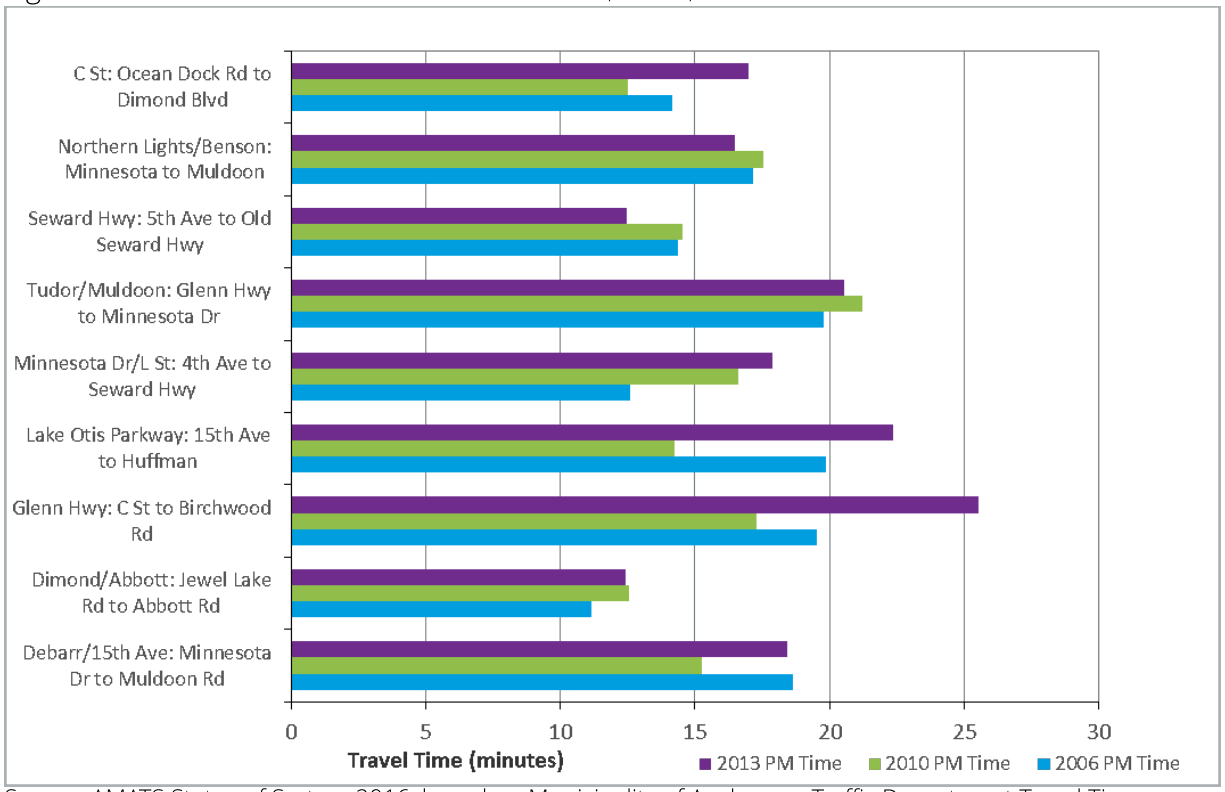
Source: AMATS Status of System 2016, based on Municipality of Anchorage Traffic Department Travel Time Reports.

Consistent with the highway and intersection LOS analyses, as seen in Figure 4-8, afternoon congestion is higher and travel times are longer than during other time periods. For all but two of the road segments listed, the travel time is 10% to 37% higher during the 4–6 PM travel time than during the 7–9 AM travel time. Notably, midday travel is generally slightly more congested than morning travel on four of the seven roads for which mid-day data is available.

Figure 4-9 shows changes in the peak afternoon travel time in 2006, 2010, and 2013. After the general decrease in travel times from 2006 to 2010, most corridors saw an increase in travel times by 2013. This trend means that the majority of corridors in 2014 had higher travel times than in 2006. Minnesota Drive/L Street and Glenn Highway had the most significant travel time increases over the 9 years, with travel time increases of more than 20%.

It is notable that travel times are largely dependent on speed and roadway improvements. Also, infrequent events, such as crashes or severe weather, can cause delays that affect all users. All users also include public transportation vehicles, emergency vehicles, school buses, and freight shipments, which could mean increased costs of shipment. Both predictable delays, such as rush-hour congestion, and unpredictable delays increase congestion and are cumbersome to users taking all types of trips.

Figure 4-9. PM Peak Period Travel Times: 2006, 2010, 2013



Source: AMATS Status of System 2016, based on Municipality of Anchorage Traffic Department Travel Time Reports.

The majority of corridors in 2014 had higher travel times than in 2006. Minnesota Drive/L Street and Glenn Highway had the most significant travel time increases over the 9 years, with travel time increases of more than 20%.

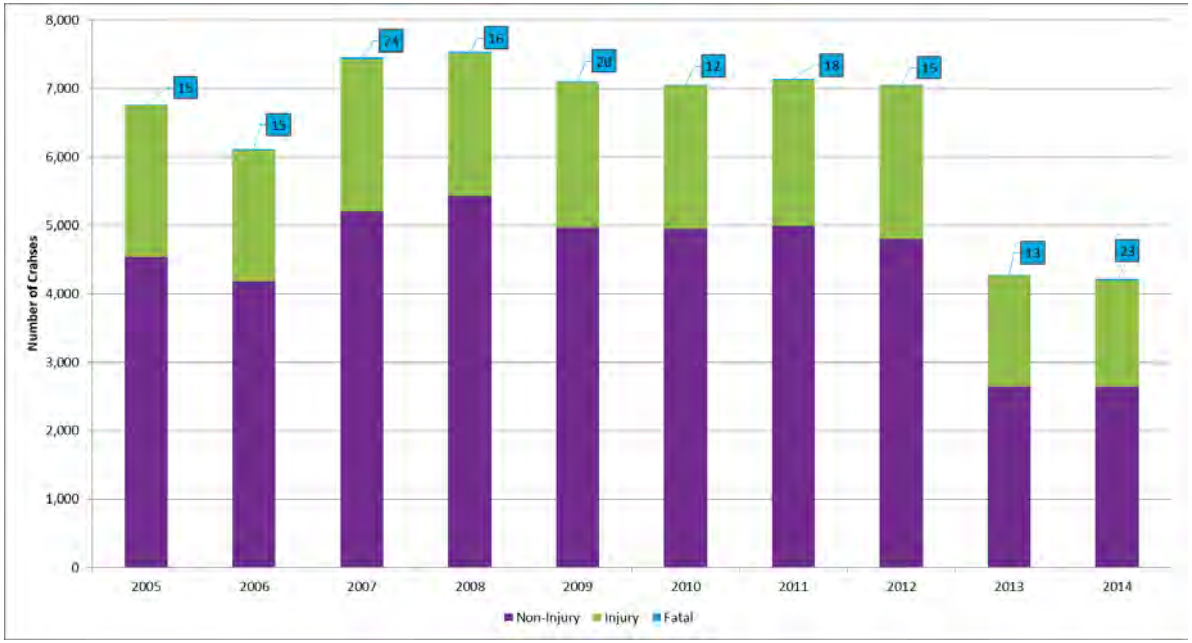
Traffic Safety and Non-recurring Congestion

One of the primary goals of transportation managers is to maintain systems that are safe and reliable for the movement of people and goods. Monitoring traffic collisions over time allows planners and engineers to identify unsafe roadways or conflict zones. Data in Figure 4-10 show vehicle crash trends in the MOA.

Between 2005 and 2012, total crashes ranged from 6,000 to 8,000 crashes per year; however, since 2013, there has been a significant reduction in total reported crashes. Note: in 2013, collision reporting methodology changed to comply with State mandates. As a result, comparing information to previous years could be erroneous.

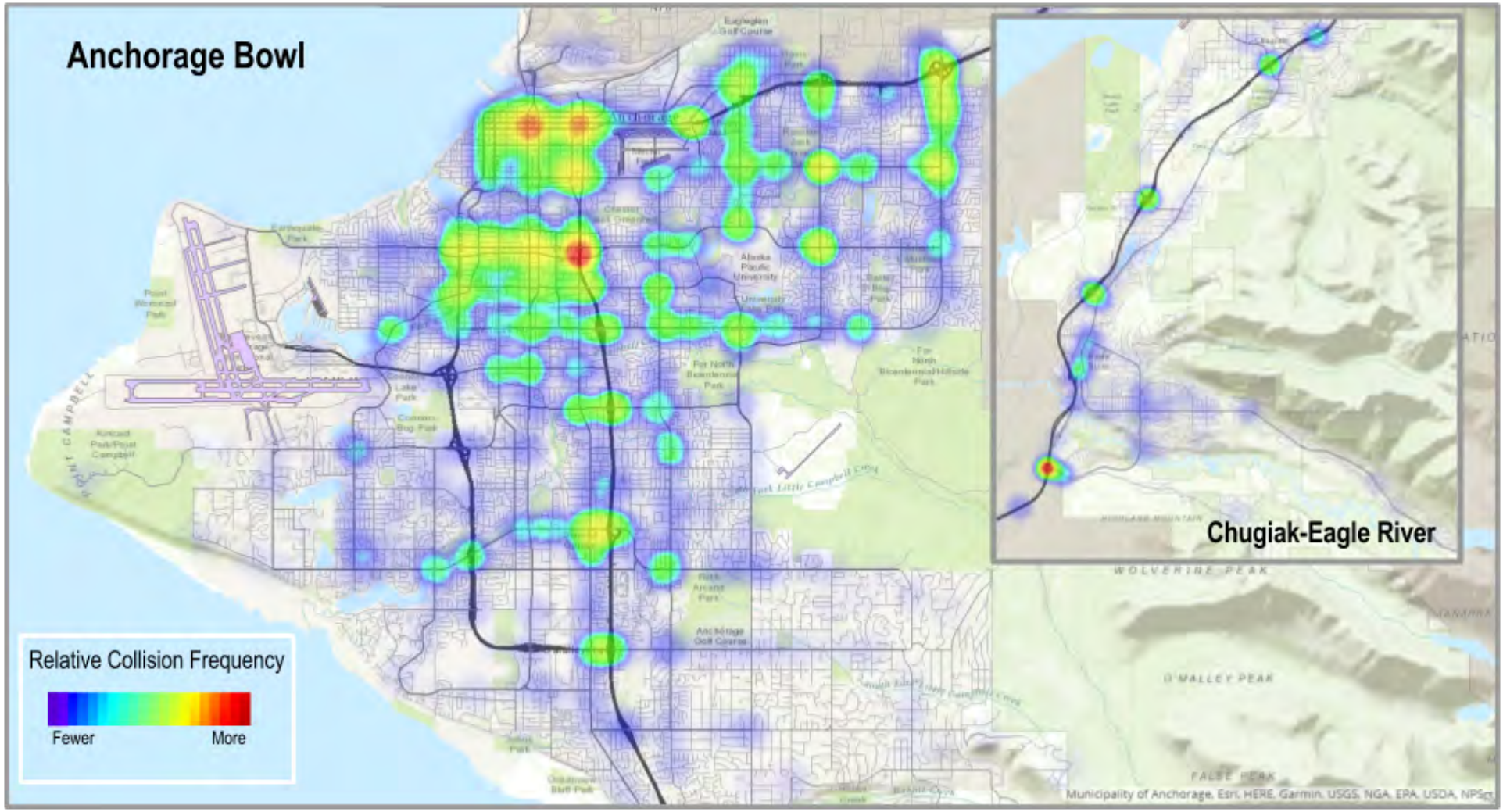
In terms of fatal crashes (indicated in Figure 4-10 call-outs), the number of fatalities is low but varies significantly by year, and there is no evident pattern suggesting that this type of crash has increased or decreased. Despite a decrease in overall vehicle crashes since 2013, the number of total fatal crashes remained steady with the previous 8 years. Traffic crashes can occur on any roadway; however, they cluster in areas with higher volumes. Figure 4-11 highlights areas with high and low crash frequencies in 2014. Crash frequencies are higher on major arterials and freeways, where average speeds are higher. In 2014, the intersection of East Benson Boulevard and Seward Highway had the highest number of incidents, and eight additional locations had at least 25 collisions. These include Boniface Parkway and Debarr Road, C Street and West 6th Avenue, Airport Heights Drive and Glenn Highway, Boniface Parkway and East Northern Lights Boulevard, East 36th Avenue and Seward Highway, East Northern

Figure 4-10. Vehicle Crashes by Type, 2005-2014



Note: Number in call-out boxes represents the number of crashes involving fatalities.
Source: MOA Traffic Report, 2014

Figure 4-11. Vehicle Crash Frequencies, 2014



Source: Municipality of Anchorage, Traffic Data Management System

Lights Boulevard and Seward Highway, and the Glenn Highway and Muldoon Road ramps. In the Chugiak-Eagle River region in 2014, the locations with greatest number of crashes were the intersection of Glenn Highway and Hiland Road/Eagle River Loop, followed by the Glenn Highway and the South Birchwood Loop and North Birchwood Loop ramps.

Table 4-5 shows the number of vehicular crashes, and their severity, on the Glenn Highway between 2005 and 2014. The severity of crashes on highways, given the increased speeds, are worse than that on arterial roadways. Crashes on the Glenn Highway were twice as likely to be fatal than crashes on all other roadways during the same period.

Traffic safety is not only important for the health and well-being of the Anchorage and Chugiak-Eagle River communities, it is also important for the operations of the roadway system. Unpredictable traffic conditions and beyond-normal rush hour traffic can be especially frustrating for commuters or travelers, as the extra time may cause them to be late for work or miss appointments. Non-recurring congestion has numerous causes, such as severe weather, road work, special events, stalled vehicles, and vehicle crashes. Table 4-5 shows that the stretch of Glenn Highway in the MOA generally sees more than 200 crashes per year, increasing the probability of congestion due to unpredictable events. While MOA lacks specific data for the overall impact of these events, reducing non-recurring delay through incident management is a high priority in maintaining the efficiency of the regional transportation system.

Table 4-5. Glenn Highway Crash Fatalities, 2005-2014

Year	Fatalities	Total
2005	1	419
2006	0	195
2007	0	198
2008	2	299
2009	4	522
2010	4	205
2011	2	354
2012	0	230
2013	1	165
2014	0	178

Source: Municipality of Anchorage, Traffic Data Management System.

Public Transportation

The Municipality of Anchorage's Public Transportation Department (PTD) aims to connect the region with safe, reliable transportation options through People Mover, AnchorRIDES, and RideShare. People Mover provides fixed-route bus service in Anchorage and Eagle River. Paratransit services are provided through AnchorRIDES for seniors age 60 and over, and for people with disabilities who need an alternative to People Mover. RideShare is a subsidized vanpooling program for groups of five or more riders who work and travel at agreed-upon times, days, and locations.

Ridership has increased from 172,972 passenger in 2001,to a peak demand of 198,510 passengers in 2011. However, in recent years - 2012 and 2013 passenger trips have been decreasing. However, the decrease in demand has not affected the

productivity index, or passenger per revenue hour, as the system has adjusted to the demand, an important characteristic of on-demand paratransit services.

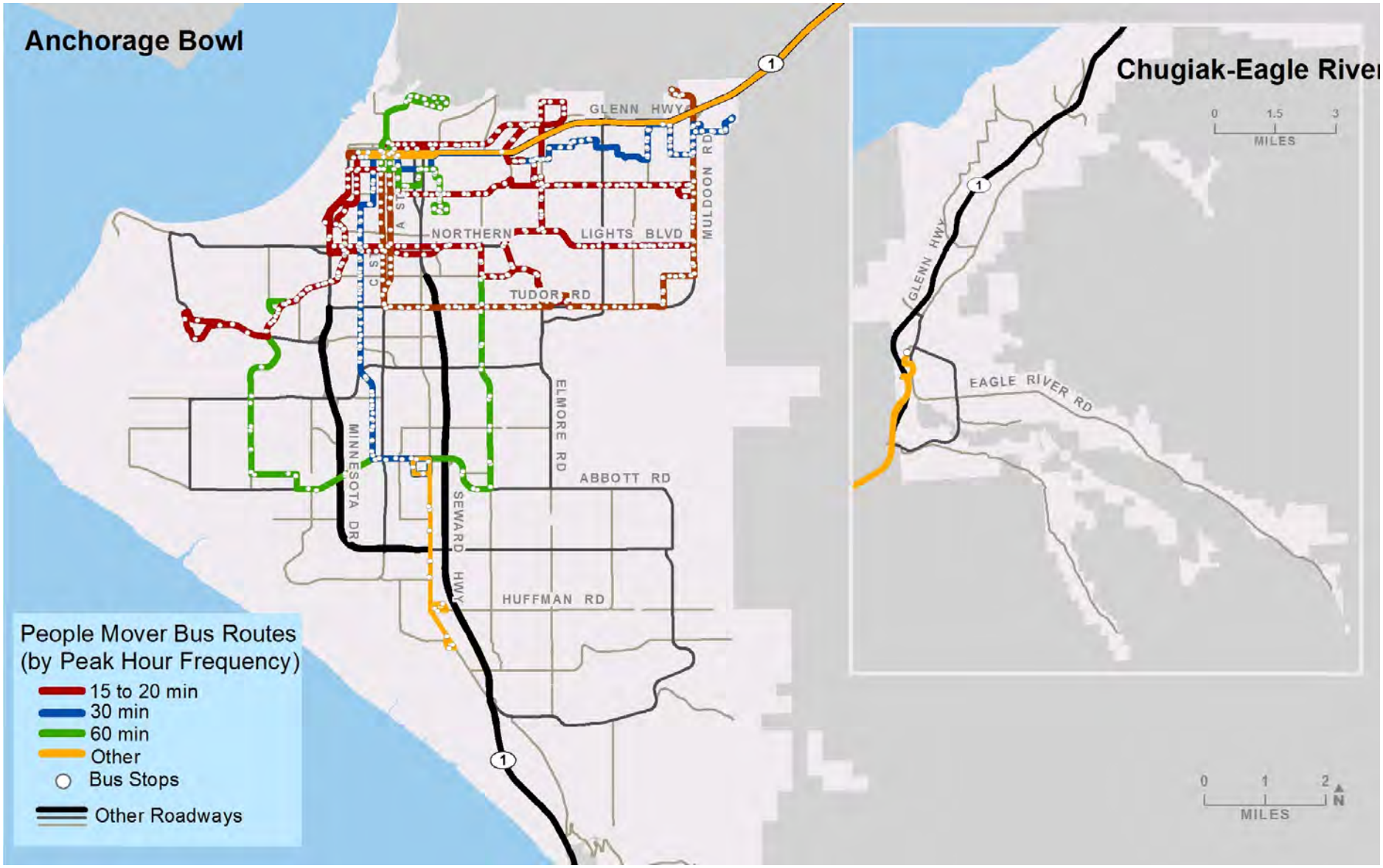
Bus Service

On October 23, 2017, a new transit system was implemented that improves bus frequency on many routes in the region. Prior to October 2017, People Mover operated one route on 20-minute headways (minutes between bus service), three on 30-minute headways, nine on 60-minute headways, and one commuter route with limited service. The new system has more frequent service, including, between the hours of 6 AM and 8:30 PM: four frequent routes with headways of 15 minutes, one route with 20-minute headways, three with 30-minute headways, three with 60-minute headways, and two commuter routes that operate during peak periods only. Figure 4-12 shows the location of the 13 different fixed bus routes in Anchorage as of October 2017. Frequencies of bus services for commuter routes and all lines after 8:30 PM and on weekends range from 30 to 60 minutes. Routing assistance, as well as service times and locations, can be found on the People Mover website or by calling 343-6543.

Prior to the launch of the new bus system in October 2017, there were two transit connections between Chugiak-Eagle River and the Anchorage Bowl. Riders could take People Mover Route 102, a fixed-route service during peak hours, or Eagle River Connect, a fixed-route service combined with a dial-a-ride service for the link between Chugiak-Eagle River and the University Medical (U-Med) area. As of October 2017, People Mover Route 92 provides the Anchorage Bowl to Eagle River connection with 30-minute (morning) and 30/60-minute (afternoon) headways during peak hours.

The latest People Mover map can be found at on the People Mover website.

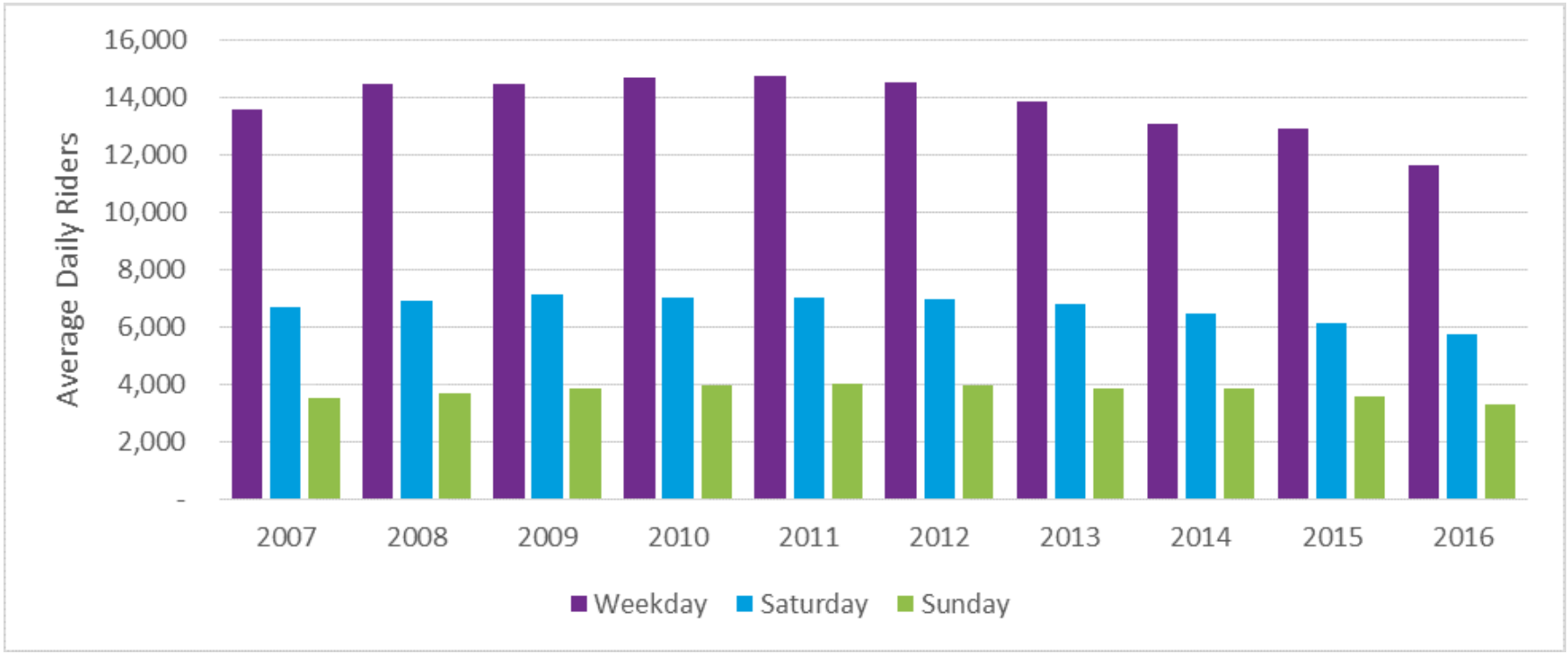
Figure 4-12. People Mover Bus Routes, as of October 2017



Source: Municipality of Anchorage

In 2008, for the first time since 1983, the system surpassed an annual ridership of 4 million. People Mover has experienced slightly declining ridership ever since. Transit ridership is affected by many factors, some outside the control of the transit agency. Factors include the population and employment density, the fare cost compared to other transportation costs, travel time, reliability of service, frequency of service, and other amenities. Figure 4-13 shows the average daily riders by People Mover for weekday and weekend trips between 2007 and 2016.

Figure 4-13. People Mover Average Daily Riders, 2007-2016

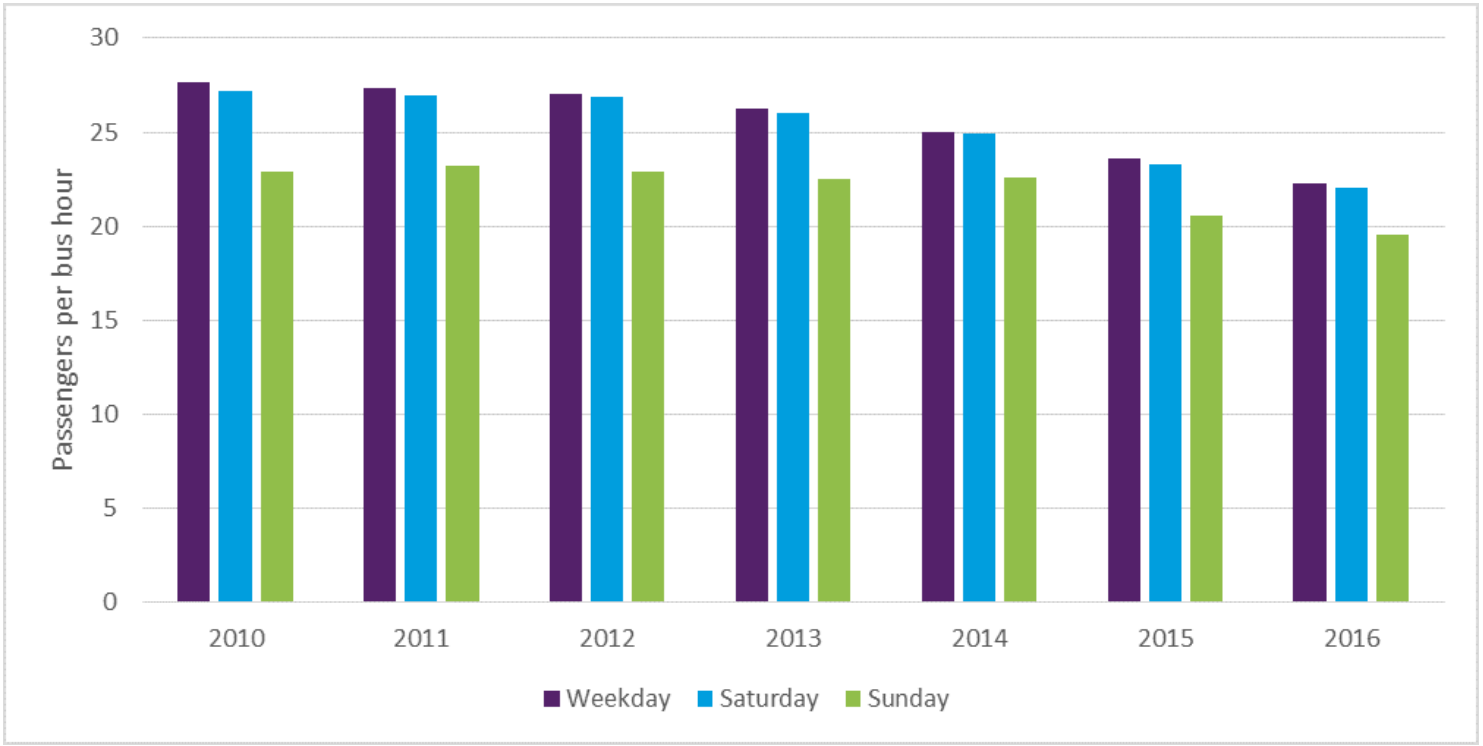


Source: National Transit Database

Looking beyond ridership alone, agencies track other metrics to determine how cost-effective their services are compared to similarly sized agencies. One such metric, transit system productivity, is a ratio of ridership to revenue hours. Transit systems aimed at maximizing ridership typically have higher productivity than those that are designed to provide service coverage. Prior to October 2017, People Mover operated a system aimed at providing service coverage over maximizing ridership. Between 2010 and 2014, bus revenue hours increased, while ridership declined slightly; Figure 4-14 illustrates the slight decline in productivity from 28.8 passengers per bus hour in 2010 to 25 passengers per bus hour in 2014.

PTD also offers AnchorRIDES, a demand responsive, curb-to-curb transportation service for seniors and people with disabilities. AnchorRIDES is a service that meets the requirements of the American's with Disabilities Act (ADA) and is eligible for FTA paratransit funding. It also receives state and federal subsidies. Trips on AnchorRIDES increased from 173,000 passengers in 2001 to a peak in 2011 of 198,500 passengers, dropping to 167,000 in 2016.

Figure 4-14. People Mover Productivity, 2010-2016



Source: Municipality of Anchorage

Ride Sharing

Ride sharing, also known as carpooling, is an important component of a multi-modal transportation network. According to the most recent census data, almost 12% of all employees in the Anchorage area carpool to work. Most carpooling occurs among friends and family; the 2014 regional household travel survey found that only 17% of those Anchorage area carpool commute trips include driving with a non-household member (a total of 2% of all commute trips). To complement informal carpooling, organized ride sharing services are an increasingly important transportation mode. Anchorage's ride sharing system, RideShare, offers participants the opportunity to commute in organized carpools and vanpools. As shown in Table 4-6, there was a significant increase in vanpooling participation over the past 10 years, from 375 to 1,152 in 2011, though participation decreased in 2014 to 840. However, active vanpools remain steady at 65 and has experienced a steady increase since 2006. Active carpoolers have decreased steadily over time, from 659 to 250, though it may be possible that informal carpools have been established outside the formal RideShare system.

Table 4-6. Anchorage Ride Sharing Statistics, 2005-2014

Year	Registered Applicants	Active Carpools	Active Carpoolers	Active Vanpools	Active Vanpoolers
2005	4,602	328	659	24	375
2006	4,822	278	557	41	569
2007	4,946	181	365	42	637
2008	4,774	179	361	52	810
2009	4,823	179	361	52	917
2010	4,772	178	359	55	985
2011	5,151	137	276	66	1,152
2012	5,291	135	272	65	992
2013	2,249	124	250	65	972
2014	1,507	N/A	N/A	65	840

Source: AMATS Status of the System, 2016

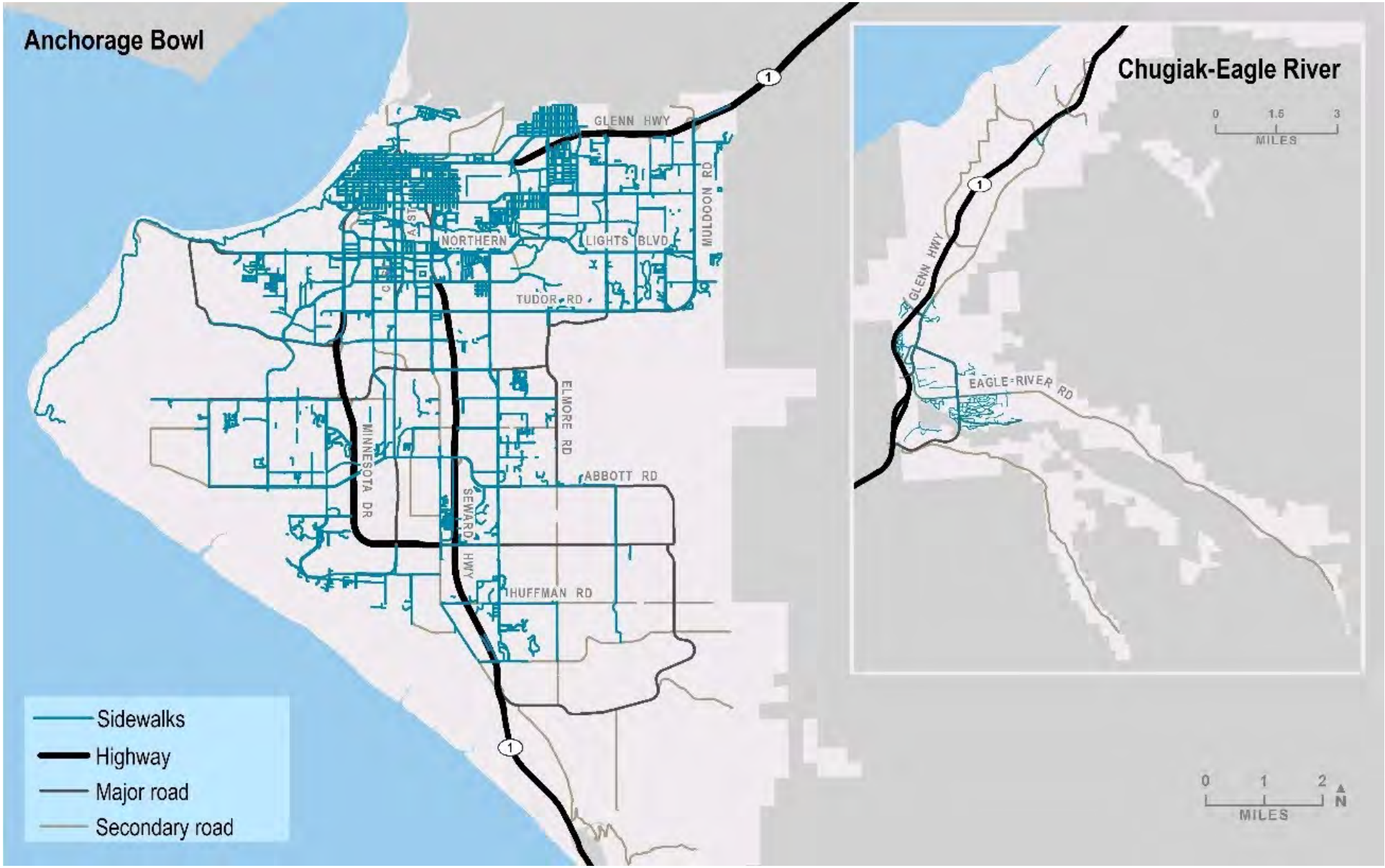
Non-Motorized Transportation

The Anchorage region has both pedestrian and bicycle systems that allow for residents to commute, run errands, and travel for other purposes without the use of a vehicle. Non-motorized trips are better for the environment, improve public health, are low cost, and can reduce congestion. Welcoming pedestrian and bicycle networks are serious and important components of a modern transportation system and especially important in Alaska. At a statewide level, close to 8% of employees in Alaska walk to work, more than any other state in the US (excluding the District of Columbia), and the state ranks number 6 in terms of bicycle commute mode share[1]. According to the 2016 Benchmarking Report by the Alliance for Biking & Walking, Alaska spends more per capita on bicycling and walking projects than any other state; however, Alaska also ranks number one in pedestrian and bicyclist fatalities per commuter[3]. In the Anchorage region, bicycling and walking to work are 3.1% and 1.2%, respectively, lower than the statewide averages. Based on the AMATS regional household travel survey for all trips, including running errands and recreational travel, bicycling is used for 1.5% of all trips and walking is used for 8.2% of trips.

Pedestrian System

Planning for pedestrian facilities in Anchorage is supported by the 2007 Pedestrian Plan. According to the 2016 Status of the System report, Anchorage has approximately 458 miles of sidewalks. Figure 4.12 shows the current location of sidewalk infrastructure in the Anchorage Bowl and Chugiak-Eagle River. Sidewalks are more common in the Anchorage Bowl area compared to Chugiak-Eagle River, given its rural character. In general, older neighborhoods such as Downtown, Fairview, Mountain View, Airport Heights, College Village, and South Addition are more likely to have complete sidewalk neighborhoods. According to the TIP, approximately 155 miles of sidewalks will be improved upon or added in the near future.

Figure 4-15. Sidewalks in Anchorage Bowl and Chugiak-Eagle River



Source: Municipality of Anchorage, 2017

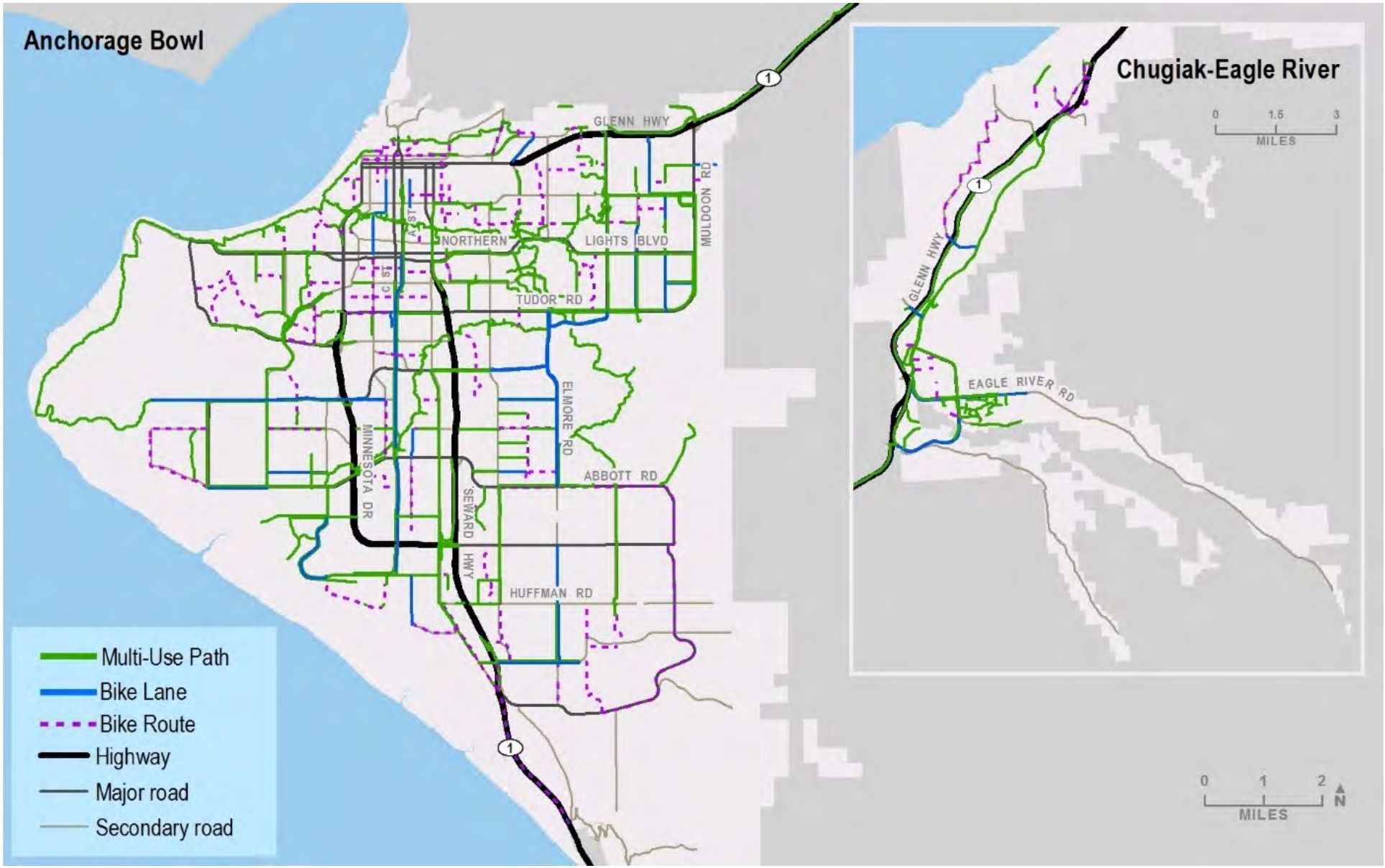
Bicycle System

An important mode of transportation, particularly in urban regions, is the bicycle. Figure 4.16 shows bicycle facilities in the Anchorage Bowl and Chugiak-Eagle River. According to Anchorage's Bicycle Plan 2010, there are 214 miles of bicycle facilities. Of the entire network, 204 miles correspond to multi-use pathways, 8 miles are greenbelt trails, 8 miles are bicycle lanes, and 2 miles are shared roadways.

Accurate estimates of bicycling activity is important for planners to understand travel patterns and implications for the safety and public health of residents. Estimates of bicycle ridership come from surveys (Census and Household Travel Surveys), but these data points do little for the understanding of where bicyclists are riding and why they choose to utilize or avoid certain routes. For better estimates of bicycling in specific locations, manual counts are necessary. The MOA conducted Bike to Work day counts between 2007 and 2014 and the results are detailed in Table 4.7. With the exception of 2013, when it snowed on Bike to Work Day[4], the data highlights a steady increase in bike to work day participation over the six year period, with year to year increases at most count locations. Furthermore, the increase of fat-tire bicycles, better for riding on snow, has made commuting by bicycle more popular year-round in Anchorage.

Mobile phone data and automated count technologies can be utilized in the future to better understand bicycling activity in the Anchorage region.

Figure 4-16. Bicycle Facilities in Anchorage Bowl and Chugiak-Eagle River



Source: Municipality of Anchorage, 2014

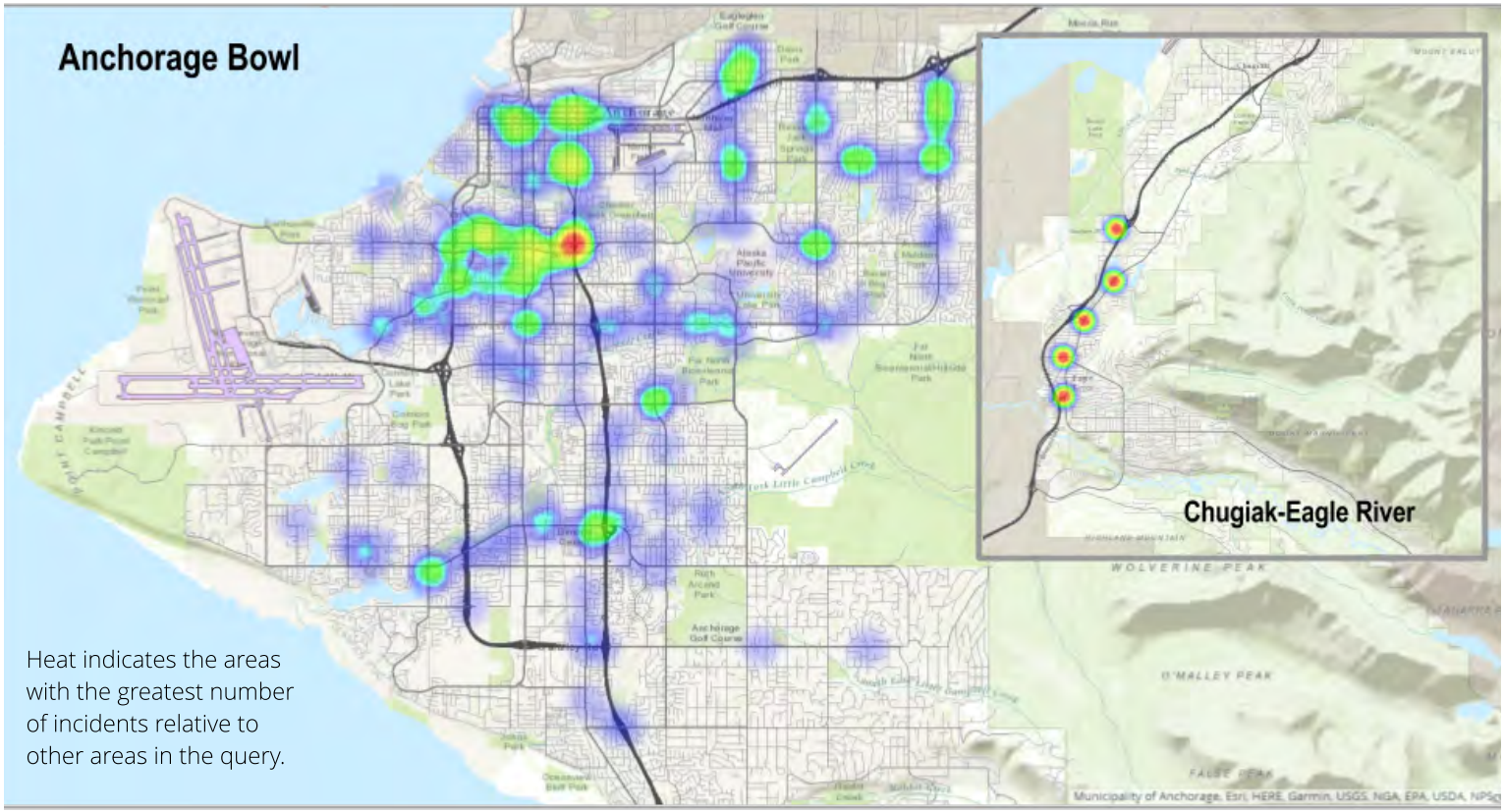
Table 4-7. Bike to Work Day Counts, 2007-2014

Location	2007	2008	2009	2010	2011	2012	2013	2014
Coastal/Chester Trail – West end of Westchester Lagoon	124	188	170	259	263	403	143	427
A Street and Chester Trail	225	308	274	258	568	693	328	699
Seward Highway and Chester Creek Trail	238	316	301	436	593	719	393	781
Chester Trail – Northern Lights Boulevard overpass at Goose Lake	159	242	231	336	455	466	223	529
Campbell Trail at Bittner House – South of Dowling	67	71	81	120	139	123	51	237
Tudor Road and Elmore Road	94	160	179	341	412	408	156	426
Tudor Road and C Street	170	171	209	303	266	364	147	394
Lake Otis Parkway and 36th Avenue	91	103	99	128	123	132	63	135
Lake Otis Parkway and Abbott Road	55	71	51	87	96	111	71	110
10th Avenue and N Street	63	101	72	109	129	161	57	216
15th Avenue and Arctic Boulevard/E Street	115	122	93	138	192	170	72	197
Benson Boulevard and Minnesota Drive	21	31	37	52	56	65	33	101
Boniface Parkway and Glenn Highway			58					
Glenn Highway and Muldoon Road						121	27	103
Jewel Lake and International Airport Road						170	54	124
Total	**1,422**	**1,884**	**1,855**	**2,567**	**3,292**	**4,106**	**1,818**	**4,479**

Source: Annual Traffic Report, Municipality of Anchorage, Traffic Engineering

Collisions involving bicycle-vehicles and pedestrians-vehicles occur with higher frequency in areas frequented by bicyclists and pedestrians (Figure 4-17). These include areas with higher population density and areas with high density of employment or shopping destinations, such as downtown Anchorage and Northern Lights Blvd. In 2014, the highest number of crashes involving bicyclists and pedestrians occurred at East Northern Lights Boulevard and Seward Highway. The next highest number of incidents occurred on C Street and West Tudor Rd, East Benson Blvd and Seward Highway, and Boniface Pkwy and East Northern Lights Blvd. In the Eagle River/ Chugiak region, there are five locations with reported crashes involving a pedestrian or bicyclist. Three of these locations are at an intersection with Old Glenn Highway.

Figure 4-17. Frequency of Crashes involving Bicyclists-Vehicles and Pedestrians-Vehicles, 2014



Source: Municipality of Anchorage, Traffic Data Management System

Figure 4-18 shows the number of pedestrian and vehicle crashes between 2003 and 2012. Figure 4-19 shows the number of bicycle and vehicle crashes for the same time frame.

Figure 4-18 Pedestrian-Vehicle Crashes, 2003-2012

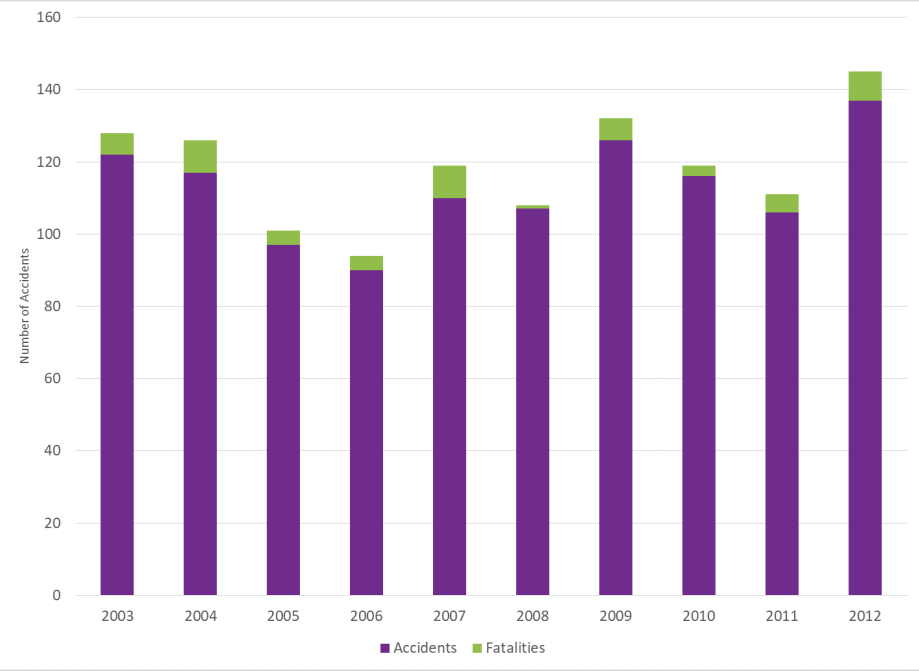
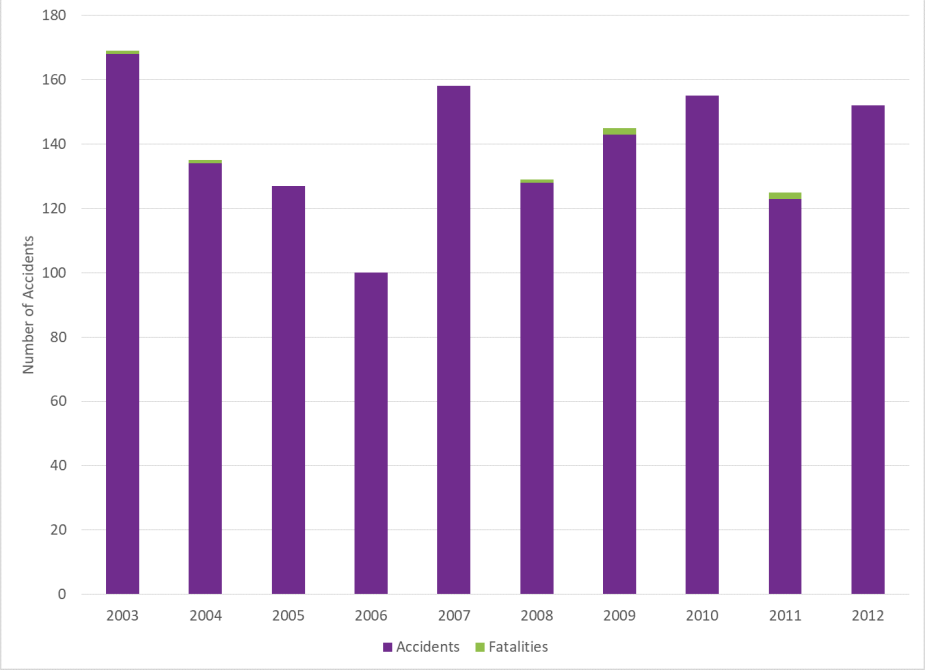


Figure 4-19 . Bicycle-Vehicle Crashes, 2003-2012

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Freight Distribution and Regional Connections

Modal Freight and Regional Highway Links

Truck transportation remains the most important mode of transportation for freight movement from Anchorage to the surrounding regions. It is estimated that 90% of the consumer goods for 85% of Alaska comes through the Port of Alaska. Containers are loaded onto trains and trucks for regional and local distribution. A large share of freight from the Port of Alaska and the Ted Stevens Anchorage International Airport is moved by truck, using the region's freeways and principal arterials. Table 4-8 shows the daily truck volumes at selected locations in Anchorage.

Table 4-8. Daily Truck Volumes at Selected Locations, 2014

Roadway Location	Number of Single-Unit Trucks	Number of Truck/Tractor Units	Trucks as a Percentage of All Vehicles (%)
Alyeska Highway, Girdwood	291	38	11%
Dearmoun Road, Anchorage	568	32	11%
Old Seward Highway, Anchorage	332	97	5%
O'Malley Road, Anchorage	534	251	7%
Rabbit Creek Road, Anchorage	317	46	5%
Hillside Drive, Anchorage	120	16	6%
Elmore Road, Anchorage	670	612	10%
Jewel Lake Road, Anchorage	458	44	4%
International Airport Road, Anchorage	602	48	5%
Minnesota Drive, Anchorage	932	539	4%
Wisconsin Street, Anchorage	748	145	9%
3rd Avenue, Anchorage	892	399	12%
Debarr Road, Anchorage	314	24	2%
Providence Drive, Anchorage	96	23	3%
Eagle River Road, Eagle River	170	85	7%

Source: AMATS Freight Mobility Study

Port of Alaska

The Port of Alaska (POA) is a deep-water port that provides service through four bulk carrier berths and two petroleum berths. The POA serves virtually all of Alaska's population centers through its rail, trucking, and air connections. Over 250 communities rely on cargo shipped through the POA, and 74% of all waterborne non-fuel freight arriving in Southcentral Alaska pass through the POA[6]. Figure 4-20 details the tonnage of cargo transported through the POA between 2008 and 2015. Domestic trade is the primary traffic through the POA, and although it suffered a decline in 2009, since 2010 it has increased at an average constant rate of 3%. Foreign trade has increased since 2008, doubling by 2010 and remaining steady through 2014, and then doubling again in 2015. While foreign exports are significant in some years, imports make up a large majority of foreign trade. The recent trends at the POA are expected to remain stable for the near future.

Figure 4-20. Port of Alaska Tonnage, 2008-2015

Source: American Association of Port Authorities

Aviation

The Ted Stevens Anchorage International Airport (TSAIA) is the busiest airport in Alaska in terms of both passenger enplanements and cargo tonnage. TSAIA is crucial to cargo movement throughout the state. For many years, TSAIA carried more volume of air cargo than any airport in the United States, and since 2008, it is second only to Memphis in total tonnage carried, due to its strategic importance as a fueling station and crew stop for international air traffic. Approximately three-quarters of TSAIA cargo does not get offloaded in Anchorage; rather, the airlines stop to refuel at TSAIA while on international trips[5].

Figure 4-21 shows the total number of enplaned passengers in the past decade, as well as the total cargo landed, according to the information collected by the Federal Aviation Administration.

Air travel to TSAIA, in both cargo and enplaned passengers, declined significantly during the great recession. Annual enplaned passenger travel revived and is up 4% over the past decade, but has not reached its pre-recession peak. Air cargo volume rebounded briefly after the recession, but is down 13% from 2004 levels.

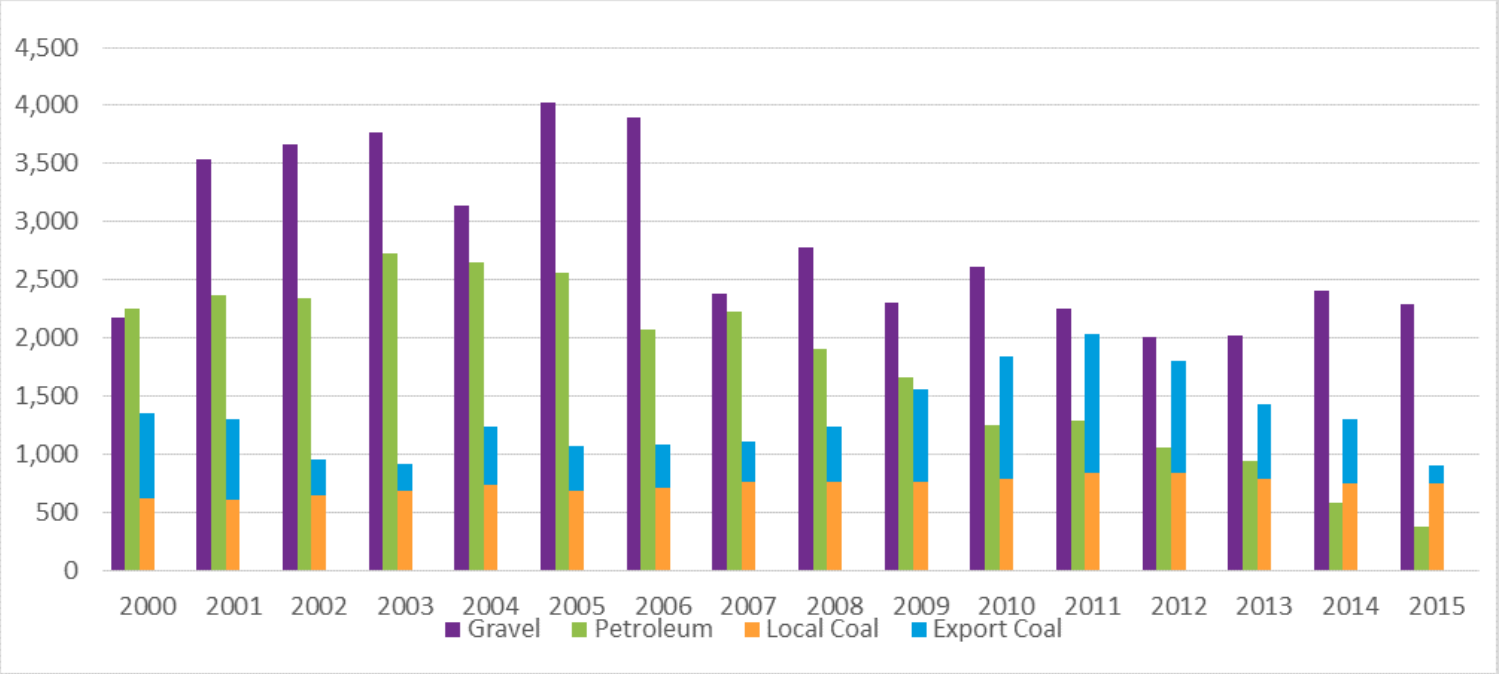
Figure 4-21. TSAIA Enplaned Passengers and Cargo Volumes,

Source: AMATS Status of the System 2016, based on data from the Federal Aviation Administration

Railroad

Freight rail is an important component of Anchorage's transportation network, allowing the movement of cargo without adding stress to the roadway networks. The Alaska Railroad Corporation (ARRC) operates more than 650 miles of passenger and freight rail in Alaska, and is the sole railroad provider in Anchorage. Figure 4-21 shows the freight rail cargo tonnage from 2000 to 2015, highlighting the change in coal, petroleum, and gravel tonnage. Overall, total tonnage carried on freight rail decreased by almost one quarter, though there have been increases in some types of cargo. Coal rail transport increased between 2000 and 2010, but has since declined to the lowest total tonnage in the reported period, largely driven by a dramatic decrease in exported coal. Gravel transport, largely driven by local construction, reached a high in 2005 at over 4 million tons, but has since declined and remained steady between roughly 2 and 2.5 million tons since 2007. Petroleum transport decreased even more significantly, with a reduction from approximately 2.7 million tons in 2003 to less than 400,000 tons in 2015.

Figure 4-21. Alaska Railroad Freight Tonnage (Thousand Tons), 2000-2015

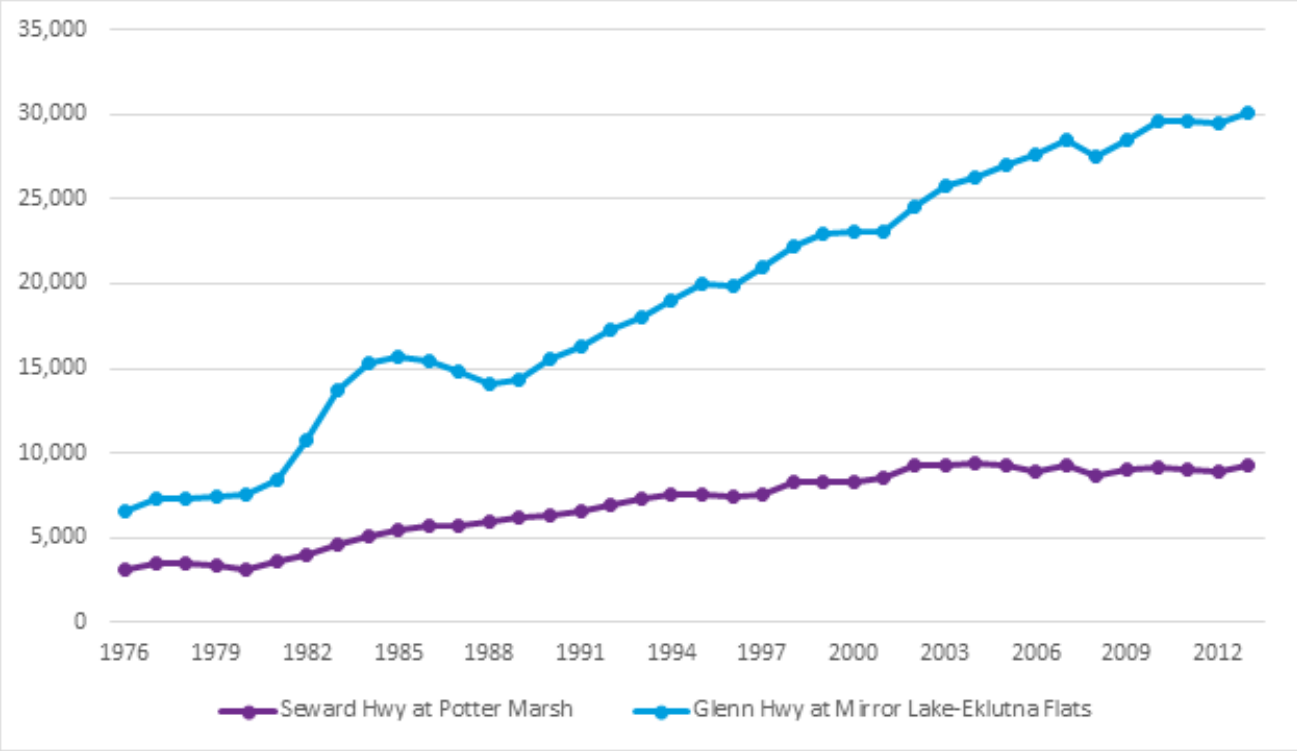


Source: Alaska Railroad Corporation, Alaska Draft Rail Plan

Regional Highway Connections

Anchorage's primary connections to the rest of Alaska are the Glenn and Seward highways. The Glenn Highway, a 135-mile highway, connects Anchorage to the northwest, and the Seward Highway, leaves south of Anchorage and travels 125 miles to terminate in Seward on Alaska's southern coast. Daily traffic volumes on these two roadways show how connected Anchorage is to the surrounding regions (see Figure 4-23). Daily traffic on the Glenn Highway has increased five-fold since the 1970s and will continue to increase with the projected population growth in the Matanuska-Susitna Borough. Traffic on the Seward Highway has increased steadily over the past 40 years, though not as significantly as the traffic to the north.

Figure 4-23 Daily Traffic Volume across AMATS Boundaries, 1976-2013



Notes

[1] American Community Survey, 2011-2015 5-Year Estimates. https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2015/5-year.html

[2] Regional Household Travel Survey. 2014. Prepared for AMATS by RSG. December 23, 2014. https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/2015%20Docs/Regional%20Household%20Travel Survey/RHTS_FINAL_122314.pdf

[3] Alliance for Biking and Walking. 2016 Benchmarking Report. http://www.bikewalk alliance.org/resources/benchmarking

[4] Alaska Dispatch News. 2013. "A snowy Bike to Work Day in Anchorage." https://www.adn.com/anchorage/slideshow/photos-snowy-bike-work-day-anchorage/2013/05/18/

[5] Anchorage Freight Mobility Study. June 2017. Prepared for AMATS. http://www.muni.org/Departments/OCPS/Planning/AMATS/Documents/Freight_Mobility/Study_2016/FMS_final.pdf

[6] Cargo Distribution. https://www.,portofalaska.com/services/cargo distribution

Chapter

5

MTP2040

LINK - CONNECT - MOVE

Looking to the Future

Understanding the future population growth and land use changes is critical to understand and identify our future transportation needs. Population, employment, and land use are the basis for estimated travel demand because they indicate how people will be using the transportation system and where they want to go. The 2040 MTP also needs to consider trends and choices that change how we use the transportation system.

Chapter

5

Demographics

The primary drivers of transportation demand and regional travel patterns are the scale and geographic distribution of population, households, and employment.

Anchorage is a growing community. It is Alaska's primary urbanized region and will likely remain that way over the next 20 years.

The 2040 MTP relies on data from a travel demand model that uses the base year of 2013 and a future year of 2040. The base year 2013 was the most recent year for which the model data has been validated. Population, household, and employment information is displayed in Table 5-1, Table 5-2, and Table 5-3 respectively.

Table 5-1 Regional Population

	2013	2028	2040	% Growth 2013-2028	% Growth 2028-2040	% Growth 2013-2040
Anchorage Bowl	262,679	290,155	304,609	10%	5%	16%
Chugiak-Eagle River	35,761	46,960	53,754	31%	14%	50%
Mat-Su Borough	89,916	124,188	151,241	38%	22%	68%
Total Study Area	388,356	461,303	509,604	19%	10%	31%

Source: AMATS Socioeconomic Projections and Land Use Allocation Report, April 2016

Table 5-2 Regional Households

	2013	2028	2040	% Growth 2013-2028	% Growth 2028-2040	% Growth 2013-2040
Anchorage Bowl	97,356	109,387	116,437	12%	6%	20%
Chugiak-Eagle River	12,474	16,422	18,837	32%	15%	52%
Mat-Su Borough	32,950	46,344	56,260	41%	21%	71%
Total Study Area	142,701	172,154	191,428	21%	11%	34%

Source: AMATS Socioeconomic Projections and Land Use Allocation Report, April 2016

Table 5-3 Regional Employment

	2013	2028	2040	% Growth 2013-2028	% Growth 2028-2040	% Growth 2013-2040
Anchorage Bowl	192,958	217,481	232,948	13%	7%	21%
Chugiak-Eagle River	5,100	6,092	6,593	19%	8%	29%
Mat-Su Borough	31,711	44,023	53,808	39%	22%	70%
Total Study Area	229,769	267,596	293,349	16%	11%	28%

Source: AMATS Socioeconomic Projections and Land Use Allocation Report, April 2016

Travel Model

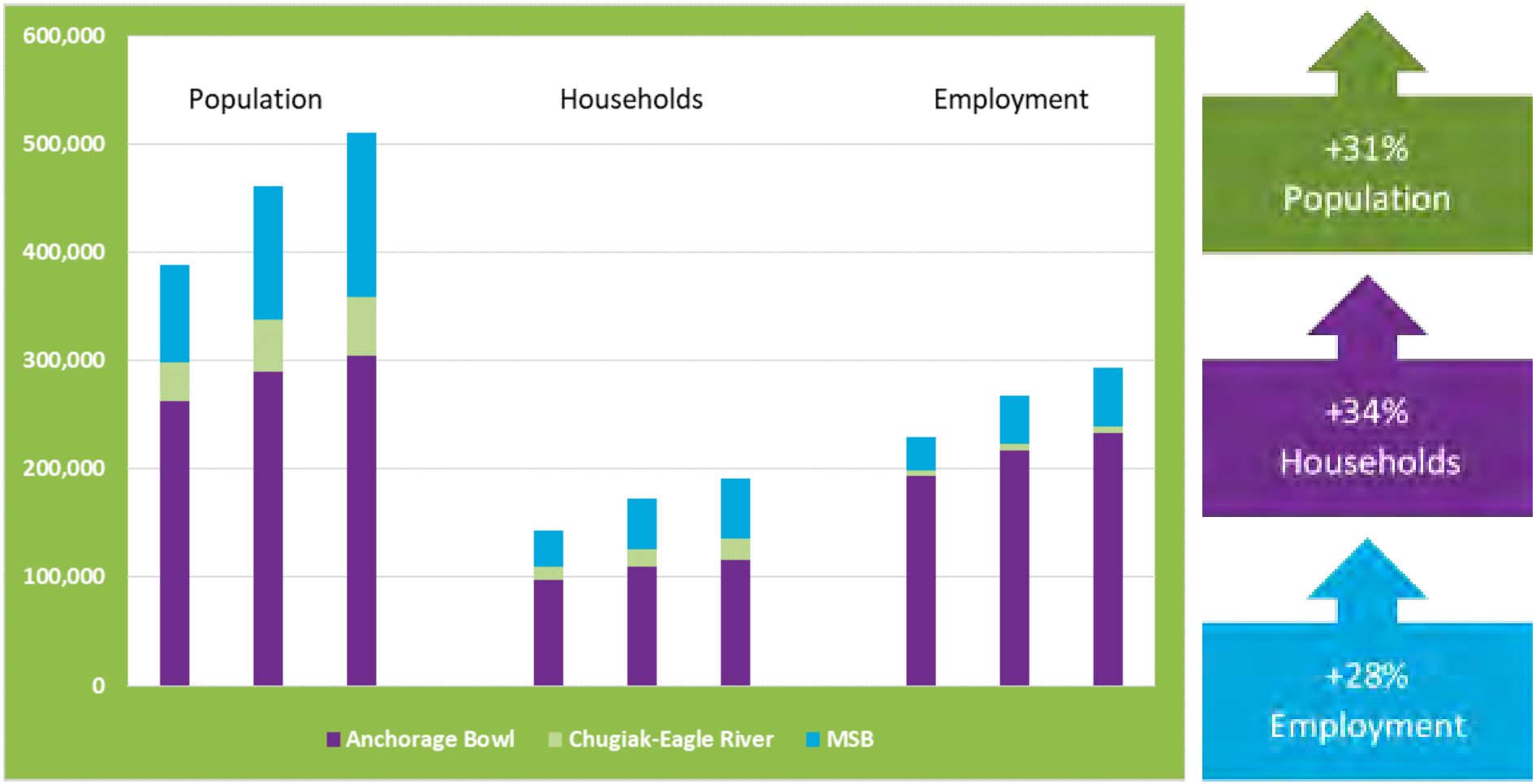
The AMATS travel demand model used for this MTP is a completely new model that was calibrated to match observed travel patterns. The AMATS model is a traditional trip-based travel model that represents average weekday conditions and covers the entire AMATS area (Anchorage Bowl, Chugiak-Eagle River) as well as part of the Matanuska-Susitna Borough (MSB). It includes travel modules for residents, overnight visitors, airport ground-access, commercial vehicle travel, and internal-external and through-travel movements. The model includes a number of enhancements of previous versions of AMATS travel models that are fully described in the model development report. It considers auto, transit, and non-motorized (walk and bike) modes of transport. It was fully calibrated to match travel patterns revealed in local travel survey data, and validated against 2013 traffic count and transit boarding data and the latest 2040 land use distribution. It meets or exceeds federal guidelines for predicting future travel.

The AMATS travel demand model encompasses the Anchorage Bowl, the Chugiak-Eagle River area, and part of the Matanuska-Susitna Borough.

The model estimates travel demand by analyzing the location and number of people and jobs in different geographic areas and by understanding the capacity, travel speed, and connectivity offered by the roadway and transit systems. The model uses this information to estimate the number of trips made within the region along each trip's mode and route.

This regional model allows for a better representation of regional trips distribution and modal choice than would a model focused only on the Anchorage metropolitan area.

Figure 5-1 AMATS Travel Model Population, Households, and Employment



Land Use Forecast

Land uses have a pivotal impact on the use of the current transportation system and future travel demand. Current development patterns, the existing network of transportation facilities, and the choices of where and how future growth will occur all have an impact on the length and frequency of trips in the region.

People use some mode of transportation whenever they travel between land uses—where they live, work, shop, conduct business, and recreate. Land uses that are far apart have a different impact on the transportation network than those that are located close together. In agreement with the adopted comprehensive plans, citizens continue to express their desire for Anchorage to grow in ways that expand economic opportunities and protect the natural, historical, and built amenities of the region.

Comprehensive Plan Guidance

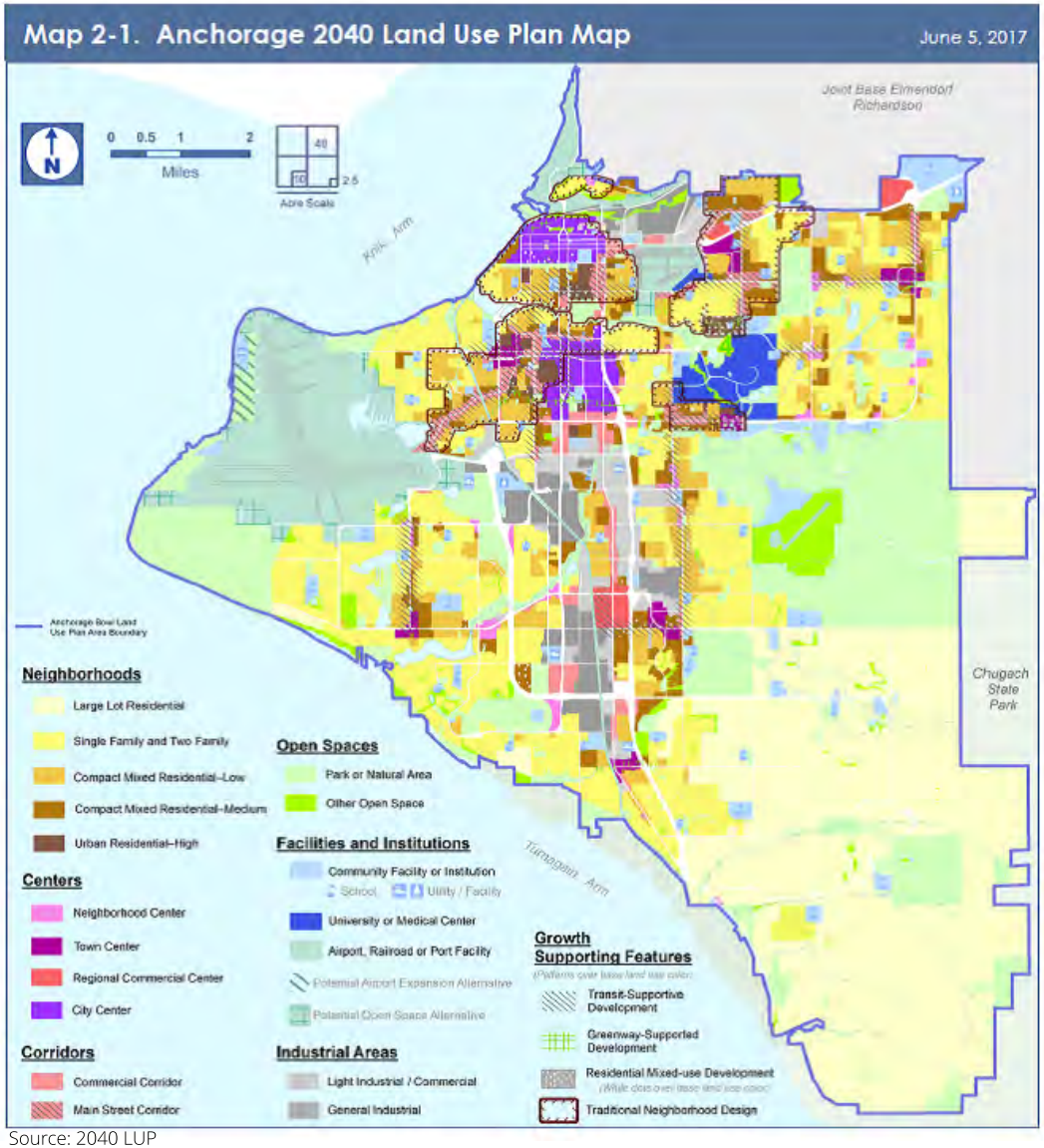
The locations of future household and employment growth in the region are based on the Anchorage 2020: Anchorage Bowl Comprehensive Plan (adopted February 2001), the Anchorage 2040 Land Use Plan (adopted September 2017), and the Chugiak-Eagle River Comprehensive Plan Update (adopted December 2006). These comprehensive plan elements provide a vision and long-term goals for the development of the region's communities. Elements such as the density of future development and the location of employment centers and mixed use areas are described in these plans. Figure 5-2 shows the land-use plan map for the Anchorage Bowl. The intent of this plan is to create a city in which there are more opportunities to live a lifestyle that is less dependent on automobiles. This goal is accomplished by selectively increasing housing densities, consolidating employment, and encouraging mixed-use development to improve walkability within the Anchorage Bowl and to promote public transportation use. Housing and employment density increases are specifically called for along transit-supportive development corridors, within town centers, and in the redevelopment areas near major employment centers.

The availability of vacant land will continue to encourage higher growth rates in the MSB and Chugiak-Eagle River. The anticipation of the continued growth north of the Anchorage Bowl will put pressure on the Glenn Highway and require additional challenges during commute times.

Employment growth is expected to still be located predominantly in the Anchorage Bowl, where more than 70 percent of

regional employment is expected to occur. The largest amount of employment growth is expected to occur in Midtown, Downtown, and the U-Med district. This growth will continue to cause high demand on the arterial streets into and out of these employment center.

Figure 5-2 Anchorage 2040 Land Use Plan Map



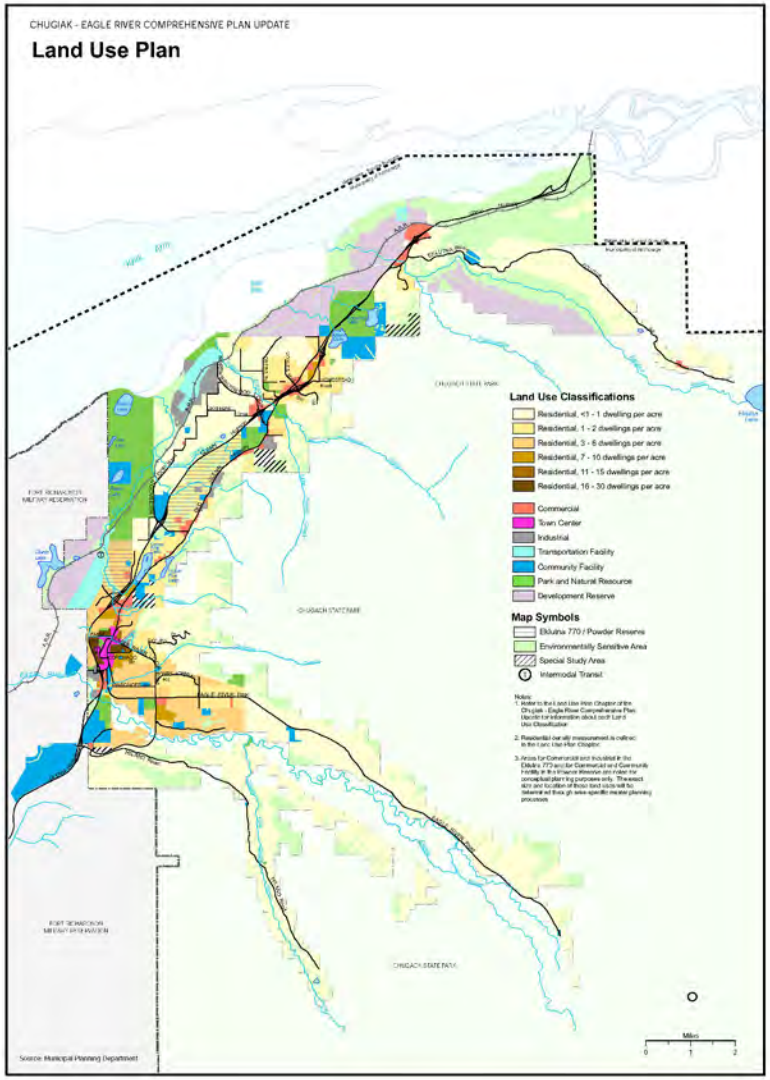
Source: 2040 LUP

Note: Search online with "Anchorage 2020 Land Use Plan" to find an interactive version of this map.

Figure 5-3 shows the land use plan map from the Chugiak-Eagle River Comprehensive Plan.

Chugiak-Eagle River is anticipated to continue growing in the same manner as it has in the recent past. Outlying rural areas will remain primarily large-lot, single-family residential, while the central Eagle River area will expand with smaller lot subdivisions, with some new multi-family. As the population continues to grow, there will be a corresponding increase in the demand for commercial services. However, the area is expected to remain a bedroom community with smaller-scale commercial uses that are more local serving than regional. The Town Center provides the focal point for Chugiak-Eagle River, integrating community-serving retail, public services, and civic facilities. The demand for industrial space may also increase.

Figure 5-3 Chugiak-Eagle River Land Use Plan Map



Source: Chugiak-Eagle River Comprehensive Plan Update

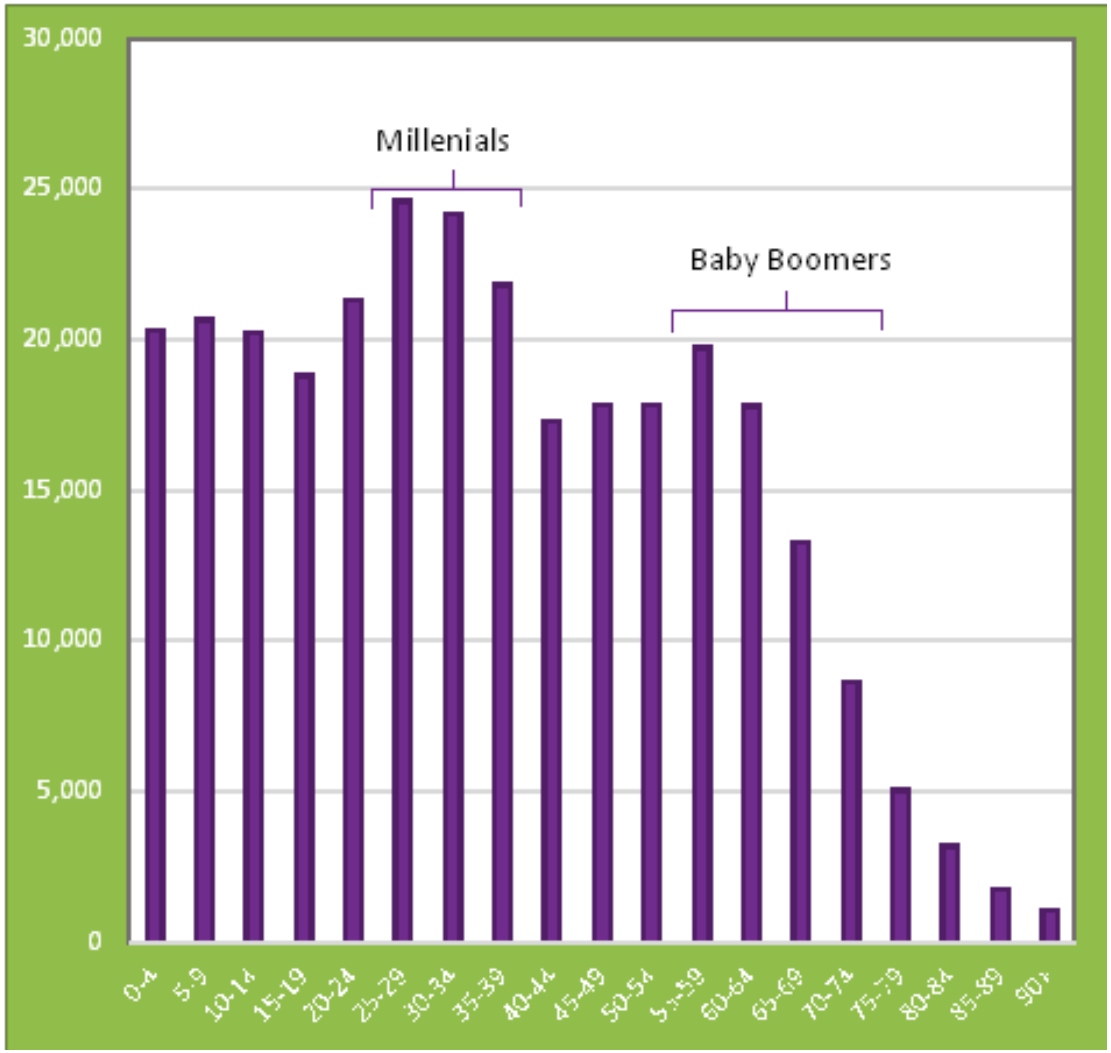
Future Transportation Trends

It is important to understand trends to plan for the future. The following section summarizes a number of issues related to transportation planning that will influence transportation in Anchorage over the next 20 years.

Changing Demographics

The Millennial and Baby Boom Generations represent two significant age groups in planning for the next 20 years. Combined, they represent 44 percent of Anchorage's population (see Figure 5-4). According to a recent Transportation Research Board (TRB) Report, "America is becoming grayer. The population age 65 and older will significantly increase as the baby boom generation enters this demographic group" (NCHRP Report 750). According to the report, age plays a significant role in patterns of vehicle use and as the

Figure 5-4. Anchorage Population Distribution, 2018



Source: Alaska Department of Labor & Workforce Development

population ages, less driving is anticipated. Similarly, the millennial generation brings new attitudes toward driving. According to the report, Millennials have faced additional requirements and costs for getting a driver's license, they have had greater access to mobile technology, and their attitudes have shifted to favor low-carbon modes of travel. Thus, "while earlier generations embraced a concept of mobility structured around highways and automobiles, digital population appear[s] to be delaying the acquisition of a driver's license, driving less, and doing more activities digitally."

Other demographic trends include:

- Population is growing, which will tend to increase vehicle miles traveled (even as the VMT per capita appears to be declining).
- Increasing diversity of the population, with Hispanic and Asian/Pacific Islander populations increasing the fastest. According to the TRB report, this trend may increase VMT, the age of the auto fleet, and public transit use.
- A growing and aging work force. This trend is predicted to increase work-related VMT overall but decrease the VMT per capita and increase carpooling.
- According to the report, the rate of new households forming has declined since 2006, creating more single households and multi-generational households. This trend is predicted to decrease per capita VMT and auto ownership, and increase carpooling and transit use.

Autonomous Vehicle Technology

The National Highway Traffic Safety Administration indicates that autonomous vehicle safety technologies represent a revolution in roadway safety. They report that 94 percent of the 30,000 fatalities annually die due to human decisions and errors. Multiple vehicle manufacturers are poised to begin production of autonomous (driverless) vehicles. Transit agencies and trucking companies are already experimenting with autonomous trucks and buses. Most estimates predict that within 5-10 years, autonomous vehicles will be much more common on our roadways. How will these vehicles affect our travel and infrastructure needs? Among the predictions:

- Potential to reduce lane widths (possibly adding lanes or bike paths

in the same road space by restriping)

- Potential to increase capacity by vehicles traveling closer together
- Potential to travel at higher speeds
- Potential to change vehicle ownership patterns, thereby reducing the need for parking. It may also results in an increased need for the regulation of curb space.
- Conversely, potential for driverless vehicles to cruise empty, waiting to be called up and perhaps increasing VMT
- Potential for people to choose to live farther away (increasing sprawl and VMT) as they could do other tasks while being driven to work or other destinations
- Potential to lower transit operating costs
- Potential to increase trips and mobility of individuals who experience difficulty using the transportation system

While Anchorage may not be seeing fully autonomous vehicles in the next decade, technology will continue to influence our transportation system. AMATS will continue to monitor transportation trends so they help the city prepare for the future.

Mobile Phones and Apps

Carrying a computer in our pockets has changed the way we travel. Map applications give us turn-by-turn instructions to get us where we need to go and even depict and route us around traffic congestion, effectively increasing the capacity of our transportation system. Mobile phones have improved the experience for transit customers. No longer do we have to guess when the next bus will arrive as we can check the real-time arrival of the next bus. Riders no longer need to worry about having the right fare or finding a ticket kiosk; we can use our phones to pay the fare, and then to entertain ourselves on the ride. Car-sharing and ride-sharing apps allow us to locate the nearest rental or request a ride at our doorstep, providing an alternative to private vehicle ownership.

Car Sharing

Car ownership is uncertain. Some predict that car ownership as it exists today will soon be a thing of the past. It is possible that people may choose to not own a vehicle. Instead, they may use other transportation modes more and share a car when needed. People could access a shared car through a car sharing company such as Zip Car, belong to a local car sharing co-op, or use a peer exchange service.

It

Climate Change

The Municipality of Anchorage recently adopted a Climate Action Plan (CAP) that seeks to "reduce energy use, improve public health, promote energy independence, strengthen our economy and build a more liveable and resilient community." The MTP is recommending integrating recommendations and actions from the CAP.

Transportation can have a positive influence on our environment. Investments in expanding transit service, providing sidewalks and pathways to encourage walking and biking, the promotion on cleaner fuels and more fuel efficient vehicles can all help reduce mobile source air pollutants and greenhouse gases associated with climate change.

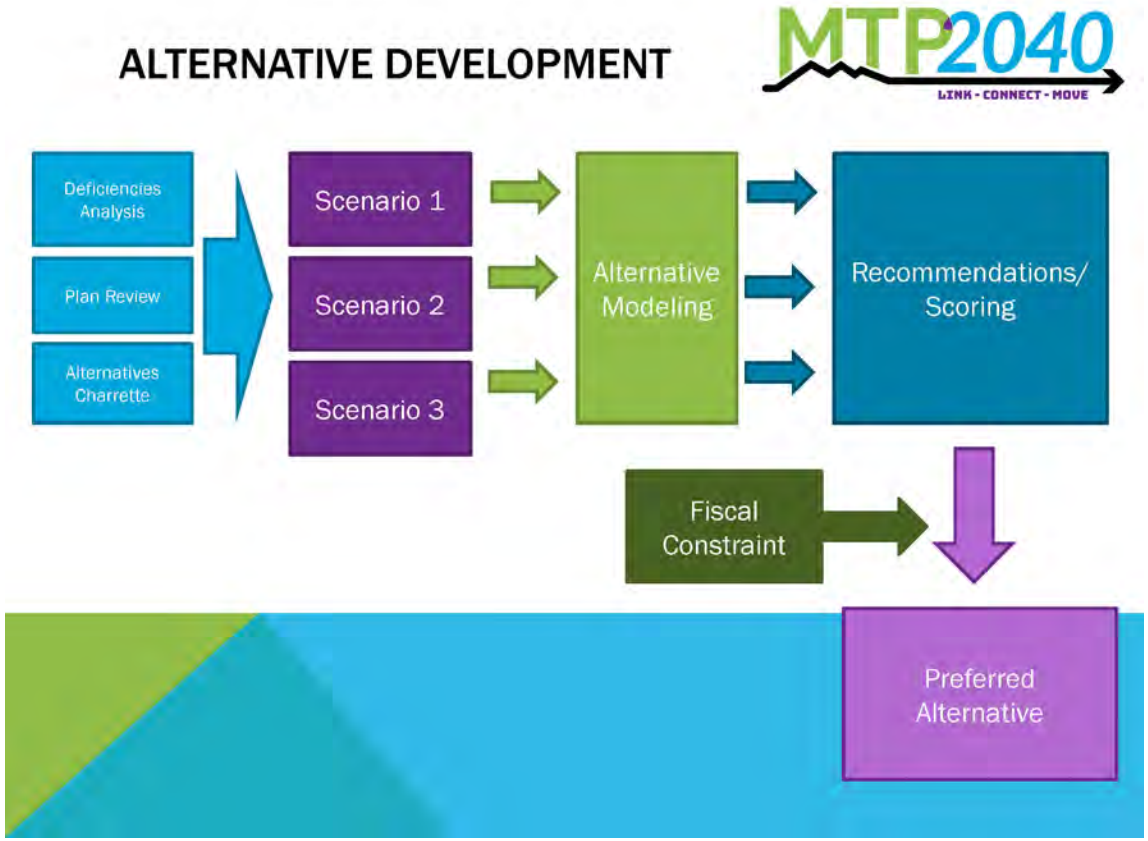
Our Future

AMATS has considered these trends and others in the development of this MTP. For example, changing demographics and future land use were incorporated into the travel model used in the plan development. AMATS also considered how these changing trends might influence the plan's recommendations.

Alternative Development

The alternatives considered in 2040 MTP were based largely on stakeholder input. Some members of the public expressed a desire to keep Anchorage's transportation system similar to what exists today. They indicated that AMATS should focus on reducing congestion by making roadway improvements. Other people expressed they wanted AMATS to focus on increasing mobility and transportation choices by expanding transit opportunities along with non-motorized improvements and commuter rail. The alternatives also considered other factors, such as the deficiencies analysis and model results predicted for 2040. The following section describes the process used to develop and evaluate the alternatives. Figure 5-5 summarizes the alternative development process.

Figure 5-5 Overview of Alternative Development Process



Deficiencies Analysis

The alternatives development process began with a deficiencies analysis to understand current transportation system performance and project future transportation needs based on adopted land-use forecasts. The deficiency analysis compares existing travel conditions with those of a future year. In order to understand future transportation system performance, a future baseline network was created. This network reflects current conditions plus all projects with dedicated funding that are currently under construction or will be built in the near future (i.e., are committed). Two future year networks (2030 and 2040; roadway and transit) were developed by coding all "Existing plus Committed" projects on the 2013 network (see Table 6-1).

Existing plus committed (E+C) projects include projects constructed since 2013 and projects programmed in the construction pipeline with committed construction funding by 2018. The list of E+C projects was developed in close coordination with Municipality of Anchorage (MOA), Matanuska-Susitna Borough, and Alaska Department of Transportation & Public Facilities. The transit network was updated to reflect changes to the transit system in 2017.

Table 5-4 List of Committed and Funded Projects

Project Name	From	To	Description	Status
Dowling Road	Minnesota Drive	Old Seward Highway	2 lanes in each direction	Complete
Glenn Highway -	Hiland Road	Artillery Road	Adding 1 lane to the northbound direction	Complete
92nd Avenue	Seward Highway	Old Seward Highway	1 lane in each direction Auxiliary lane from Diamond Boulevard to 92nd Avenue Auxiliary lane from 92nd Avenue to O'Malley Road	Complete
Arctic Boulevard	36th Avenue	Tudor Avenue	1 lane each direction plus center turn lane	Complete

Table 5-4 List of Committed and Funded Projects cont.

Project Name	From	To	Description	Status
36th Ave - Arctic	Arctic Boulevard	C Street	2 lanes in each direction	Complete
O'Malley Road Reconstruction	Seward Highway	Lake Otis Parkway	2 lanes in each direction	Complete
Seward Highway	Dimond Boulevard	Dowling Road	3 lanes in each direction	Complete
100th Avenue Extension	Minnesota Drive	C Street	1 lane in each direction w/center turn lane	Complete
Glenn Hwy/Muldoon Road Interchange			A diverging diamond interchange with 2 lanes in each direction	Complete
Jewel Lake Road	88th Avenue	Strawberry Road	1 lane in each direction w/center turn lane	Complete
Abbott Road	Lake Otis Parkway	Jupiter Drive	1 lane in each direction w/center turn lane	Complete
Abbott Road	Jupiter Drive	Birch Road	1 lane in each direction w/center turn lane	Complete
Glenn Highway –	Hiland Road	Artillery Road	Adding 1 lane to the southbound direction	Underway
Klatt Road/Johns			Roundabout	Complete
Bogard Road East Extension	N49 Ave	Arabian Street	1 lane in each direction	Complete
Fern Street Connection to Edlund	Fern Street	Edlund Road	1 lane in each direction	Complete
Seldon Road/Lucille Street roundsbout			Roundabout	Complete
Seldon Road	Church Road	Beverly Lake Road	1 lane in each direction	Complete

Table 5-4 List of Committed and Funded Projects cont.

Project Name	From	To	Description	Status
Trunk Road Improvements	George Parks Highway	Bogard Road	2 lanes in each direction	Complete
Trunk Road Extension South (part of project above)	George Parks Highway	Nelson Road	1 lane in each direction	Complete
Glenn Highway MP 34-42 Reconstruction	George Parks Highway	Arctic Street	2 lanes in each direction	Scheduled for completion by 2019
Knik-Goose Bay Road	Centaur Road	Vine Road	2 lanes in each direction	Scheduled for completion by 2019
Knik Goose Bay Widening	Vine Road	Settlers Bay	2 lanes in each direction	Scheduled for completion by 2019
Parks Highway MP 43.5-48.3 Church	Church Road	Pittman Road	2 lanes in each direction	Scheduled for completion by 2019

Level of Service

Level-of-service (LOS) is calculated by dividing the capacity of the road segment by the volume forecast for that roadway segment by the model. In the AMATS model, capacity is based on number of lanes for road segments without signalized intersections, and a combination of number of lanes and intersection characteristics for signalized intersections. The results of the LOS calculations in the figures below use the intersection capacity for roads with signalized intersections, which tends to be lower than the mid-link capacity due to signal timing.
Level-of-service is coded into six letter categories A through F according to ranges of the volume to capacity.

Peak period level-of-service is relatively good on most of the facilities in 2013 in the Anchorage Bowl (see Figure 5-6). Key congested facilities during the peak period include: Tudor Road\Muldoon Road, East Northern Lights Boulevard near the University of Alaska Anchorage, sections of Seward Highway north of Tudor to downtown Anchorage, Minnesota Drive between Tudor and Northern Lights Boulevard, West 15th Street between A Street and C Street in downtown, 5th Avenue east of downtown to Glenn Highway, and Glenn Highway east of Muldoon Road.

As expected by 2040, congestion worsens on many of these facilities (see Figure 5-7). Level of service deteriorates on the Glenn Highway east of downtown Anchorage, Tudor Road\Muldoon Road, and Northern Lights Boulevard; many locations that were LOS C or D in 2013 show up as LOS D, E, and F in 2040. Congestion can also be observed on Bragaw Street between Northern Lights Boulevard and Debarr Road and sections of the Glenn Highway.

There are three travel model periods: AM Peak (7A.M. to 9 A.M.), PM Peak (3:00 P.M. to 6:00 P.M), and Off-Peak (the rest of the day). The peak period is defined as either the AM Peak or PM Peak for each directional link in the road network based on which period has the higher per hour volume for the purpose of calculating peak level-of-service.

In 2013, LOS C and D conditions in the peak periods are observed on the Glenn Highway between Anchorage Bowl and Eagle River. By 2040, the Glenn Highway becomes LOS F in this section, and becomes LOS F north of Eagle River to Birchwood Loop Road in Chugiak. LOS D and E conditions are observed on Glenn Highway north to Voyles Road.

The 2040 MTP uses LOS as a measure of delay, which is consistent with previous MTPs. In the middle of this update staff reviewed national trends, new federal required performance measures, and public feedback on the use of LOS and decided that the next MTP would move away from the reliance on LOS in favor of some different measure of delay.

Figure 5-6 Baseline Peak Period Level of Service, 2013

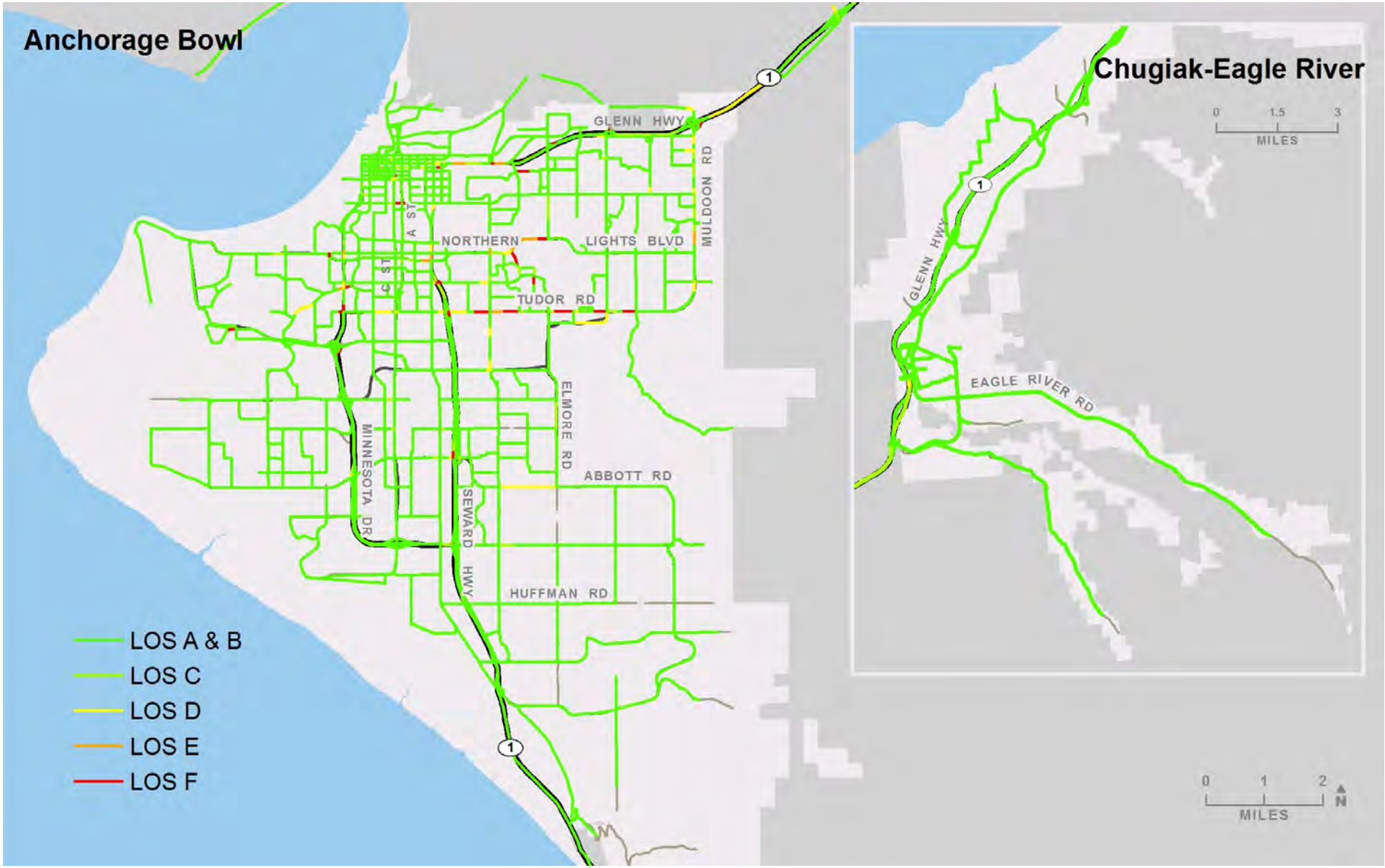
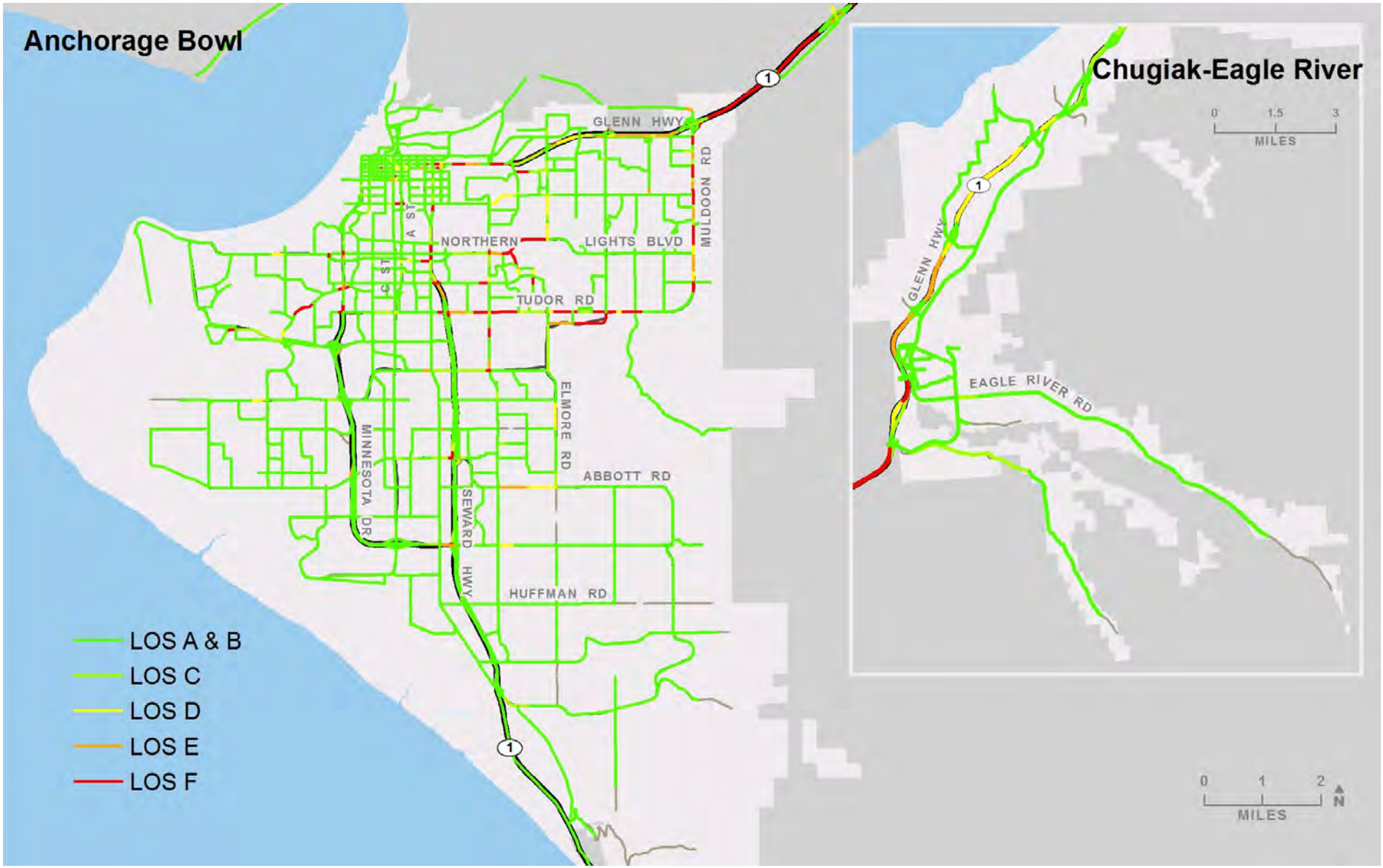


Figure 5-7 Peak Period Level of Service, 2040 E+C



Project Identification

Next, the project team reviewed existing plans to identify potential transportation improvement projects, including those described in the 2035 MTP, the Anchorage Pedestrian Plan, the Anchorage Bicycle Plan, neighborhood plans adopted since the 2035 MTP, the AMATS Freight Mobility study, Congestion Management Process (CMP) network/deficiencies (Figure 5-6), other AMATS studies/plans, and community council Capital Improvement Plans nominations, along with comments received as part of the 2040 MTP planning process. These improvement projects were then evaluated and scored using the initial screening criteria approved through the TAC and PC. The initial screening criteria are shown in Table 5-5. The criteria were developed to reflect MTP goals, national FHWA goals and planning factors, the MOA Vision Zero High Injury Network, the 2040 Land Use Plan, CMP network/deficiencies analysis, and the AMATS Freight Mobility study map of problems locations and freight network.

A multi-day charrette process was used to review transportation needs and develop initial alternatives.

Table 5-5 2040 MTP Initial Screening Criteria

Criterion	-2 Poor	0 Neutral	1 Fair	2 Good
Operational Improvements[1]	Negative impacts to system operations	No change	Limited improvement to system operations	Significant improvement to system operations
Regional Connections[2]	Negative impacts to regional connections	No effect on regional connections	Moderate improvement to regional connections	New or improved regional connections
System Connectivity (Motorized and Non-Motorized)[3]	Negative impacts to system connectivity	No change	New or improved system connectivity	New or improved system connectivity between two or more modes
Bicycle Route/Trail Use	Negatively impacts to bicycle route/trail use	No change	N/A	Improves bicycle route/trail use
Transit Access	Negatively impacts transit access	No change	Improves transit access within ½ mile of a transit route	Improves transit access within ¼ mile of a transit route
Sidewalk Use	Negatively impacts sidewalk use	No change	N/A	Improves sidewalk use
Level of Environmental Impacts[4]	Significant negative impacts anticipated	Mixed positive and negative impacts anticipated	Moderate positive impacts anticipated	Significant positive impacts or no negative impacts anticipated
Level of Community Impacts[5]	Significant negative impacts anticipated	Mixed positive and negative impacts anticipated	Moderate positive impacts anticipated	Significant positive impacts or no negative impacts anticipated
Environmental Justice[6]	Degrades mobility for EJ populations	No effect	N/A	Directly improves mobility for EJ populations
Americans with Disabilities Act[7]	Project decreases ADA elements	No effect	N/A	Project incorporates new ADA elements

Table 5-5 2040 MTP Initial Screening Criteria cont.

Criterion	-2 Poor	0 Neutral	1 Fair	2 Good
Addresses Safety Issue	Increases safety concerns	No effect	Project should improve vehicular or bicycle/pedestrian safety in area not identified as safety issue	Directly addresses an identified vehicular or bicycle/pedestrian safety issue
Improve the existing transportation system efficiency by implementing TSM [8], TDM [9], ITS[10], and TOD[11] strategies	N/A	No TSM, TDM, ITS, or TOD	N/A	Includes TSM, TDM, ITS, or TOD
Level of consistency with other adopted plans or studies	No consistency with adopted plans or studies	Mixed consistency with adopted plans or studies	Marginal consistency with adopted plans or studies	Strong consistency with adopted plans or studies
Economic Benefits[12]	Negative impacts to economic benefits	No economic benefits	Moderate economic benefits	Significant economic benefits
Preservation of Existing Facility	No impact	Minor preservation	Moderate preservation	Significant preservation
Deliverability	Significant community concerns and/or significant negative financial impacts to MTP funding	Mixed community support and/or mixed financial impacts to MTP funding	Moderate community support and/or manageable negative financial impacts to MTP funding	Strong community support and/or minimal negative financial impacts to MTP funding

Note: ADA = Americans with Disabilities Act; EJ = Environmental Justice; FTA = Federal Transit Administration; ITS = Intelligent Transportation Systems; MTP = Metropolitan Transportation Plan; N/A = Not applicable; TDM = Transportation Demand Management; TOD = Transit-Oriented Development; TSM = Transportation System Management;

[1] Operations are the provision of integrated systems and services that make the best use of existing transportation systems to preserve and improve customer-related performance. This is done in anticipation of, or in response to, both recurring and non-recurring conditions. Operations includes a range of activities in both urban and rural environments, including routine traffic and transit operations, public safety responses, incident management, snow and ice management, network/facility management, planned construction disruptions, and traveler/shipper information. Operational Improvements enhance the provision of these types of systems and services and can be multimodal.

[2] Regional Connections are facilities that serve regional transportation needs (such as access and/or mobility to and from the area outside the region; major activity centers in the region; major planned developments such as new retail malls, sports complexes, or employment centers; or transportation terminals).

[3] Connectivity is the degree to which the transportation system is integrated to provide access to essential services and places travelers need to go. The highest degree of system connectivity is between modes.

[4] Level of Environmental Impacts consider factors such as property impacts, air quality impacts, noise impacts, wildlife, potential threatened and endangered species, wetlands, floodplains, stream crossings, storm water run-off, and parkland.

[5] Level of Community Impacts consider factors such as impacts to educational facilities, negative visual impacts, impacts to recreational facilities, neighborhood division, and impacts to livability factors.

[6] Environmental Justice at the Federal Highway Administration means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations, (including Limited-English-Proficient populations), and low-income populations to achieve an equitable distribution of benefits and burdens.

[7]The Americans with Disabilities Act of 1990 prohibits discrimination and ensures equal opportunity and access for persons with disabilities.

[8] TSM is a program to reduce congestion and improve traffic flow through traffic signal synchronization, freeway operations improvements (e.g., changeable message signs and ramp metering), incident management (clearing accidents and breakdowns quickly), and other methods.

[9] TDM is the application of strategies and policies to reduce travel demand, to redistribute this demand in space or in time, or to increase transportation system efficiency.

[10] ITS is the deployment of advanced transportation technologies in an integrated manner to improve the surface transportation system.

[11] TOD at the Federal Transit Administration (FTA) means creating compact, mixed-use communities near transit facilities where people enjoy easy access to jobs and services. Well-done TOD connects transit to desirable places to live, work, and visit that feature amenities like entertainment venues, parks, retail, restaurants, an improved pedestrian environment, and diverse housing choices.

[12] Economic benefits consider factors that encourage economic development, redevelopment, and/or freight mobility through improved access and transportation opportunities; addresses impacts on urban areas, freight corridors, recreational or educational opportunities, and tourism activity. It benefits economic development projects

The results of the scoring process were presented to the public during a November 2017 multi-day alternatives charrette.

Throughout the charrette, the project team worked with small groups to identify and integrate other potential solutions to meet community transportation needs. These projects, including those heard as part of the first public meeting or the charrette, and those from existing plans, became the universe of projects to be evaluated and categorized into the 2040 MTP's alternatives. The project team initially identified two alternatives to help understand different approaches and tradeoffs to meeting transportation goals. Alternative 1, Focus on Moving Motor Vehicles, centered on improving the existing system. This alternative focuses on roadway improvements, but would continue to expand multimodal options. Modest improvements would be made to the transit system.

Alternative 2, Include Broader Transportation Solutions, focused on providing greater transportation choices and increasing mobility by emphasizing non-automobile options. An example of these strategies included removing a travel lane from Northern Lights Boulevard to support non-motorized vehicles and converting Minnesota Drive between Tudor Road and Hillcrest Drive to a multiway boulevard. This alternative focuses on greater transportation choices and improving mobility, but with less emphasis on private automobiles and roadway improvements to increase capacity to manage congestion.

The draft alternatives were published as part of an online MetroQuest survey. The survey received 365 responses that provided a total of 663 comments. The survey results indicated support for both alternatives, which confirmed what the project team heard during the charrette and other public involvement activities. The survey responses were evaluated to identify potential refinements to the scenarios based on public feedback.

Some responders indicated that they would like commuter rail to be considered, but it was already part of the Broader Transportation Solutions alternative. Many of the new ideas related to non-motorized transportation were already under consideration by the Non-Motorized Plan Update. The remaining suggestions were evaluated, and as a result, a new Glenn Highway Shoulder Use Study was added. This study would evaluate the potential and costs to allow buses to use the shoulder of the Glenn Highway. Other comments were used to help develop the MTP's implementation activities (see Chapter 8). The revised alternatives were presented to the TAC and PC for their review and feedback.

During this review process, it was decided that a third alternative, Broader Solutions with 5% SOV [single-occupancy vehicle] Redistribution among other Non-SOV

Modes, should be examined. That alternative explored even higher levels of transit and non-motorized use. (This alternative did not evaluate exactly what policies would need to be in place to achieve this higher non-SOV mode share. It was developed to provide insights on potential reduction in auto congestion and level-of-service improvements that might be possible.) Reducing SOV use is associated with reduced congestion and improved air quality. While Anchorage is below the national average of commuters who drive alone, 75.8 percent of commuter trips are still done with an SOV. In Anchorage, only 1.7 percent of commuting trips are made by public transit, which is well below the national average of 5.1 percent (see Table 6-3).

Increasing transit and non-motorized mode share is consistent with the Anchorage 2040 Land Use Plan. When implemented, land use in certain parts of Anchorage will make it much easier to travel by modes other than SOVs. Reducing SOV use will also help avoid expensive road improvement projects and create more space in our transportation system for users of other modes.

Preferred Alternative

To develop the preferred alternative, each alternative was modeled and assessed based on the improvement it makes to the transportation system. These results were used to develop the draft list of projects for the final scoring and fiscal analysis.

Table 5-6 Modal Split for Commuters, 2017 (%)

Community	Car, Truck, or Van (drove alone)	Car, Truck, or Van (carpooled)	Public Transportation (excluding taxicab)	Walked	Bicycled	Taxicab, Motorcycle, or Other Means	Worked at Home
Anchorage	75.8	11.7	1.7	3.4	1.2	2.3	3.8
Alaska	68.5	12.4	1.5	8	0.9	4.3	4.4
United States	79.4	9.2	5.1	2.7	0.6	1.2	4.7

Source: US Census

Model Results

The travel model provides a set of metrics that can be used to evaluate different alternatives. This data was used in conjunction with congestion maps to provide a picture of how each alternative would perform. Table 5-7 summarizes the performance metrics for each alternative.

The results indicate there is very little system performance different between the alternatives. This could be that alternatives were not fiscally constrained and/or the tradeoffs were not large enough to make a substantial difference. However, the results combined with public feedback from survey #2 allowed the project team to create a blending of the Focus on Moving Motor Vehicles and Include Broader Transportation Solutions alternatives. The 5% alternative showed that policies, such as parking management, and additional funding are needed to make progress towards this alternative.

Table 5-7 Performance Evaluation Measures by Alternative (based on AMATS Travel Model

Criterion	2013 Base Year	2040 Existing + Committed	Focus on Moving Motor Vehicles	Include Broader Transportation	Broader Solutions with 5% SOV Redistribution
VMT per Capita	16.33	17.15	17.48	17.55	16.86
VHT per Capita	0.42	0.44	0.42	0.42	0.4
VHD per Capita	0.01	0.02	0.01	0.02	0.01
Average Time for Low-Income Trips	7.2	7.2	6.96	7.01	7.01
Average Time for All Trips	8.9	9.36	8.96	8.99	8.99
Average Cost for Low-Income Trips	$0.74	$0.75	$0.76	$0.77	$0.77
Average Cost for All Trips	$1.12	$1.18	$1.20	$1.20	$1.20
Total Trips	1,113,987	1,364,797	1,366,420	1,366,626	1,366,626

Preferred Alternative Scoring

All projects were scored and prioritized to help determine which projects should be included in the recommended plan. To avoid unfairly prioritizing one mode over another, roads, transit, and non-motorized improvements were scored separately. The criteria for each mode are shown in Table 5-8, Table 5-9 and Table 5-10.

Table 5-8 2040 MTP Prioritization Criteria for Road Projects

Criterion	-2	0	1	3	5
Project Readiness	N/A	No work started	Some preliminary design and/or environmental work complete	Final engineering completed or nearing completion	Right-of-way purchased; ready to construct
Timing of Need	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
Project Need	Negatively impacts existing facility and/or network	N/A	Completes a gap in the existing network	Upgrade on an existing facility and/or addresses capacity needs	Addresses a safety needand/or helps to preserve the existing
Functional Classification	N/A	N/A	Collector	Arterial/Expressway	Highway/Interstate
Logical Sequencing	Would conflict with another project	N/A	New project	N/A	Next logical or final phase of an existing road
Cost (length X AADT)	N/A	Fourth quartile	Third quartile	Second quartile	First quartile
Obstacles to Construction	**Unlikely** to be overcome	Requires significant effort to resolve	**Likely** to be overcome	N/A	**No obstacles** are foreseeable

Table 5-9 2040 MTP Prioritization Criteria for Transit Projects

Criterion	-2	0	1	3	5
Timing of Need	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
Additional Transit Service	Reduces service coverage, frequency, or removes transit amenities	No change	Helps to maintain existing service or amenities	Increases capacity on existing routes or adds additional amenities (i.e. bike racks, vehicles,	Helps expand service coverage and/or helps increase frequency on an existing route
Accessibility	Reduced accessibility for transit users	N/A	N/A	Improves/fixes/ replaces existing accessibility accommodation	Addresses accessibility need for a current non-accessible condition
Increase Ridership	Worsens	No change	Minimal Increase	Moderate Increase	Substantial Increase
Improve Rolling Stock	Reduces FTA required fleet size	No change	Routine capital repair or maintenance	N/A	Replaces assets at the end of FTA useful life or buys new assets to accommodate additional service
Safety	Worsens	No change	Minimal Improvement	Moderate Improvement	Substantial Improvement
System Reliability	Reduces system reliability	No change	Helps to maintain system reliability	Moderate improvement in system reliability	Substantial improvement in system reliability
Transit-Supportive Corridor(TSC)/ Transit-Oriented Development (TOD)	N/A	Not located along a TSC or within a TOD area	N/A	N/A	Located along a TSC identified in the Land Use Plan or within a TOD area identified in a plan

Table 5-10 2040 MTP Prioritization Criteria for Non-motorized Projects

Criterion	-2	0	1	3	5
Project Readiness	N/A	No work started	Some preliminary design and/or environmental work complete	Final engineering completed or nearing completion	Right-of-way purchased; ready to construct
Project Need	Negatively impacts existing facility and/or network	N/A	Completes a gap in the existing network	Upgrade of an existing facility and/or addresses capacity needs	Addresses a safety need and/or helps to preserve the existing facility
Timing of Need	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
Potential for New Trips Considering Type of Facility, Nearby Facilities, Topography, etc.	N/A	N/A	Collector	Arterial/Expressway	Highway/Interstate
Obstacles to Construction	**Unlikely** to be overcome	Requires significant effort to resolve	**Likely** to be overcome	N/A	**No obstacles** are foreseeable

Recommended Project List

Based on the results from traffic modeling, preferred alternative scoring, fiscal constraint analysis (see Chapter 6), input from the AMATS Committees, and public comment, a list of recommended projects was developed and is presented in Chapter 7.

Chapter

6

Financial Plan

MTP2040

LINK - CONNECT - MOVE

This chapter discusses the 2040 MTP financial plan. Federal legislation requires that the MTP be "financially constrained." In other words, the cost of implementing and maintaining transportation improvements should be within a funding amount that can reasonably expected to be available during the life of the plan.

Chapter

6

Introduction

Federal regulations establish the requirements for the financial plan in Title 23, Section 450.322(f)(10), of the Code of Federal Regulations (CFR). To summarize, the regulations (effective December 2007) state that the MTP financial plan should include the following:

- Estimates of costs and revenue sources reasonably expected to be available to adequately operate and maintain federal-aid highways and public transportation
- Estimates of funds that will be available to support the MTP implementation and that are agreed upon by the MPO, public transportation operator(s), and the state
- Recommendations on any additional financing strategies to fund projects and programs included in the MTP
- Revenue and cost estimates that use an inflation rate to reflect "year of expenditure dollars" and that have been developed cooperatively by the MPO, state, and public transportation operator.

Financial Constraint Analysis Summary

Financial planning for the 20-year time horizon of a Metropolitan Transportation Plan presents challenges requiring rigorous data collection, financial analysis, and forecasting. Financial plans need to demonstrate fiscal constraint, meaning that the cost of projects in the short-term and long-term planning periods will be met by existing and future resources.

A detailed financial analysis, demonstrating that the projects and programs planned through the 2040 are financially constrained, is included in Appendix E. A summarized version is included in this chapter.

The 2040 MTP confirms that all planned projects and programs are financially constrained. Table 6-1 provides a condensed summary of the financial constraint analysis.

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

Different sets of revenue assumptions apply for capital, M&O, and for each non-motorized mode (pedestrian, bicycle, and trail facilities); public transportation and railroad; and roads.

The costs to design, construct, operate, and maintain all elements of the recommended MTP through 2040 are more than $4 billion. As indicated in Table 6-1, AMATS estimates there will be sufficient revenues to cover project implementation to year 2040.

Table 6-1: Financial Constraint Analysis ($ in Millions)

2018-2040 ALL Projects	Short Term (2018-2030)	Long Term (2031-2040)
Road, Bike/Ped/Trail, Railroad, Transit		
Project Costs	104.7	1,203.9
Inflation Amount on Project Costs	148.6	139.9
Total Project Costs	1,253.3	1,343.8
Revenue	1,254.4	1,357.8
Total	(1.1)*	(14.0)**

* The analysis performed indicates an estimated surplus of $1.1 million by the end of the short-term planning period that will be carried over to the long-term period.

** The analysis performed indicates an estimated surplus of $14.1 million by the end of the long-term planning period, in year 2040.

Identifying MTP Time Frames

The improvements in the MTP are broken into short- and long-term ranges. Short-term improvements are those anticipated to be fully funded and in place by 2030. Long-term projects are those anticipated to be fully funded and in place by 2040.

Projects that are not expected to be funded by 2040, because of fiscal constraint are listed as illustrative, meaning that they could be included in the adopted transportation plan if additional resources beyond those identified in the financial plan become available.

Table 6-2 summarizes the short-term, long-term and illustrative projects for the planning period.

The 2040 MTP used screening criteria to identify projects that should be considered in the short- and long-term lists and projects that should be identified as illustrative. These projects are listed in Chapter 7.

Short Term (2018-2030) : The total short-term project costs are calculated by adding the short-term projects costs to the total inflation on project costs over the short-term period. Short-term revenue is then subtracted from these totals, and any amount left over is carried over to the Long Term.

Long Term (2031-2040) : The total long-term project costs are calculated by adding the long-term project costs to the total inflation on projects costs over the long-term period, plus any carryover from the short-term. Long-term revenue is then subtracted from these total costs. At the end of the Long Term, the MTP is required to be fiscally constrained.

Table 6-2: Recommended Projects by Time Frame

Transportation Mode	Short-Term (2018-2030)*	Long Term (2031-2040)**	Illustrative (Beyond 2040)
Roadway	37 Projects ($979.6M)	17 Projects ($1,132.3M)	19 Projects ($1,134.3M)
Public Transportation	9 Projects ($76.5M)	9 Projects ($66.9M)	0 Projects
Railroad	7 Projects ($29.2M)	7 Projects ($21.0M)	0 Projects
Non-Motorized	37 Projects ($168.0M)	13 Projects ($123.6M)	2 Projects ($75.5M)

Note:: *Project costs are shown in 2018-2030 dollars and have been inflated.
Note: **Project costs are shown in 2031-2040 dollars and have been inflated

Balancing Costs and Revenue

Cost Assumptions

The impacts of inflation in determining anticipated revenue and costs were considered in updating the 2040 MTP financial plan. Adopted cost estimates for the roads and pedestrian, bicycle, and trail capital projects are 2018 estimate amounts provided by the DOT&PF or MOA. Projects included in adopted plans that contained cost estimates were inflated to the base year. A "year of expenditure" inflator of 2.0 percent was applied to the base year through 2030. The 2.0 percent inflator is based on general guidance from the FHWA. For the remainder of the plan (2031-2040), an inflator of 2.5 percent was applied.

All tables in this chapter reflect planning level cost estimates for use in demonstrating funding constraints, according to FHWA guidance. Planning level estimates require making assumptions about project designs and therefore can be speculative. All funding is subject to federal, state, and local appropriation.

The financial plan does not establish the specific year in which each project will be constructed. Rather, it tallies the total capital costs for all projects in 2018 dollars, and then applies the inflation rate to identify the project costs in current year dollars. The total capital cost is then reduced from that year's projected revenue, and the balance is then increased by the inflator and carried over to the next year.

This methodology was applied to each mode in the financial analysis (see Table 6-1). By the year 2040, the cost of the recommended improvements must balance with projected revenues to meet the federal requirements for a fiscally constrained MTP.

Revenue Assumptions

Based on recent economic changes, AMATS used a conservative approach to develop updated revenue estimates that can reasonably be expected to be available for transportation from federal, state, and local funds. All revenue assumptions and projections were derived through a collaboration with and consent of state, local, and federal partners. The AMATS TAC and PC approved a revenue growth scenario for each identified funding source.

To determine the inflator for the revenue projections, the yearly average of the Anchorage Consumer Price Index (CPI) was determined. Between 1998 and 2017, the average annual change in the Anchorage area CPI was 2.1 percent. All revenues for capital projects and operations and maintenance (O&M) were inflated 2.1 percent annually. It is important to note that depending on the revenue source, the inflator was applied at different years.

Projected revenue from identifiable sources for all capital projects add up to a total of $2.6 billion in 2040. See Table 6-3 for the short-term and long-term revenue sources.

The MTP financial assumptions indicate no shortfall to occur by 2040 for projects.

Project Costs

Roads - Capital Costs and Estimated Revenues

Road capital projects are divided into two categories: NHS and non-NHS projects. The purpose of the NHS is to provide an interconnected system of principal arterial routes to serve major population centers, international border crossings, ports, airports, public transportation facilities, and other major travel destinations that meet nation defense requirements; and serve interstate and interregional travel. Some federal funds are specifically designated only for use on the NHS. The priorities for those funds are determined statewide, by the DOT&PF. However, funds other than NHS funds can also be spent on NHS Facilities.

The cost of implementing NHS road improvement recommendations in this MTP is approximately $682.4 million (with inflation) in the Short Term and $1.021 billion (with inflation) in the Long Term. Other NHS-related expenditures for pavement rehabilitation, rut repair, and preservation are included with the O&M costs. Federal revenues designated for the NHS, and state funding and capital program sources projected to be available to pay for NHS improvements are approximately $1.016 billion. The remaining balance of $687.4 million can be covered by a portion of available non-NHS revenue.

Non-NHS revenue sources can be used more flexibly than NHS funding. The estimated expenditures for the non-NHS road portion of the MTP total is $297.2 million (with inflation) in the Short Term and $111.9 (with inflation) million in the Long Term. The remaining revenue from all sources (federal, state, and local) available

to fund these needs is approximately $1.099 billion. A portion of the non-NHS revenue, $687.4 million is applied toward funding the NHS program described above.

Individual road project costs are found in Chapter 7, Table 7-1. The short-term and long-term total funding amounts and the use of the revenue for the road projects are shown in Table 6-1.

Public Transportation - Capital Costs and Estimated Revenues

Public transportation capital costs are projected to be $76.4 million (with inflation) in the Short Term and $67.0 million (with inflation) in the Long Term. Projected revenue total $76.4 million in the Short Term and $67.0 million in the Long Term.

Available capital funding from federal and municipal sources is sufficient to cover the estimated capital expenses. The capital program funding will be from:

- FTA sources (Section 5307, 5309, and 5339)
- The FHWA Congestion Mitigation and Air Quality Improvement (CMAQ) Program, as well as state and local matching funds
- Local funding (MOA Local funds and general obligation bonds)
- State Legislative grants and a State Transit Match Assistance program

Individual public transportation project costs are found in Chapter 7. The Short Term and long-term total funding amounts and the use of the revenue for public transportation projects are shown in Table 6-1.

Non-Motorized Transportation - Capital Costs and Estimated Revenues

Non-motorized transportation project costs are projects to be $168.2 million (with inflation) in the Short Term and $123.5 million (with inflation) in the Long Term.

Available capital funding from federal, state, and municipal sources is sufficient to cover the non-motorized projects in the 2040 MTP. With approximately $168.6 million in the short Term and $134.9 million in the Long Term. There is an estimated $11.8 million dollars leftover in the non-motorized funding source.

Funding for the non-motorized projects was based on historical revenue trends, including federal, state, and local sources. AMATS federal funding for non-motorized transportation projects is based on 10 percent of non-NHS funding as established in AMATS policy and procedure #3. Sidewalk, bicycle, and trail improvements included as part of a roadway project are in addition to the non-motorized projects show in Table 6-2.

Individual non-motorized transportation project costs are found in Chapter 7, Table 7-3. The short-term and long-term total funding amounts and the use of the revenue for non-motorized transportation projects are shown in Table 6-1.

Alaska Railroad - Estimated Revenues

Capital funding for selected Alaska Railroad Corporation (ARRC) improvements is estimated to originate from the FTA and Federal Rail Administration (FRA) with an estimated $29.1 million (with inflation) in the Short Term and $21.0 million (with inflation in the Long Term. The ARRC projects are estimated to cost $29.1 million (with inflation) in the Short Term and $21.0 million (with inflation) in the Long Term. The estimated available funding is sufficient to cover the estimated capital expenses.

Individual ARRC project costs are found in Chapter 7, Table 7-3. The short-term and long-term total funding amounts and the use of the revenue for ARRC projects are shown in Table 6-1.

Revenue and Funding Sources for MTP Projects (All Modes)

Three main funding sources have been identified to implement the MTP recommendations. The sources and assumptions are described below.

Municipal Funds

For the MTP financial plan, it is assumed that the MOA will continue to issue voter approved bonds within Anchorage Roads and Drainage Service Area (ARDSA) in support of transportation improvements and to provide matching funds to federally funded projects. Forecast funding levels are based on the amount of bond funding that has historically gone to MTP projects from 2005 to 2017, coupled with those funds included in the 2018-2024 Capital Improvement Program (CIP). The 2005-2024 amounts were averaged and increased by the Anchorage CPI at 2.1 percent per year, beginning in 2026.

State Funds

For the 2040 MTP financial plan, it is assumed the State of Alaska will continue to fund Anchorage area transportation improvements as appropriated by the Alaska Legislature. The amount of state general funds appropriated by the Legislature for the MTP projects in 2006-2019 was averaged and increased by the CPI starting in 2025. However, forecast funding levels are not applied to the MTP until 2024 to reflect the reduction in state funds.

Alaska's state funding has historically been based on revenue from oil tax, with higher cost of oil allowing more spending on MTP projects. In fall of 2014 crude oil prices plummeted from over $100 a barrel in August of 2014 to under $50 per barrel in January of 2015. This reduction in oil prices has stayed low at $46-$57 dollars a barrel in 2019. This has a significant impact on the ability of the state to spend money on the transportation projects listed in Chapter 7 of this document. To reflect this reduction in oil prices, the MTP zeroed out the majority of state spending on MTP projects for 2018 through 2023. While crude oil prices are currently still below the historically high amounts, state spending on MTP projects is expected to return in 2024.

Statewide general obligation (GO) bonds are assumed to continue in the future, approximately every 10 years. Anchorage received $37.5 million in 2002, $36.1 million in 2008, and $76.0 million in 2013. These amounts were averaged in 2018 and then increased by the CPI in 2019. The forecast amount was not applied to the MTP until 2030 to reflect the reduction in state spending on transportation projects.

The 2040 MTP assumes that no new revenue sources, outside those outlined in Table 6-3 will come online during the 20 years of the MTP.

Federal Funds

For the MTP financial plan, it is assumed that both the FHWA and FTA will continue to provide funds. Federal funds for the NHS, which are based on historical aver-age and coordinated with the DOT&PF, are estimated at $25 million per year beginning in 2019, with CPI applied beginning in 2020. Review of non-NHS funding, which is primarily made up of the AMATS allocation shown in the Statewide Transportation Improvement Program (STIP), is estimated at $18.6 million per year, with CPI applied in 2023.

The non-NHS funds allocated to AMATS are programmed into four categories by percentage, as identified in No. 3 of the AMATS policies and procedures:

- Non-Motorized: 10-15 percent
- Congestion Mitigation Air Quality (CMAQ): 10 percent
- Pavement Replacement: 15-20 percent (included in the O&M analysis)
- Roadway Improvements: 55-65 percent

Federal Funding

The total expected amounts of federal, state, and local funds for the 2040 MTP are presented by category in Table 6-2. Figure 6-1 shows the annual levels of federal, state, and local funds expected through the year 2040. The comparison of the funding assumptions by mode is shown in Figure 6-2.

Figure 6-2 Breakdown of Revenue Percentages for the 2040 MTP

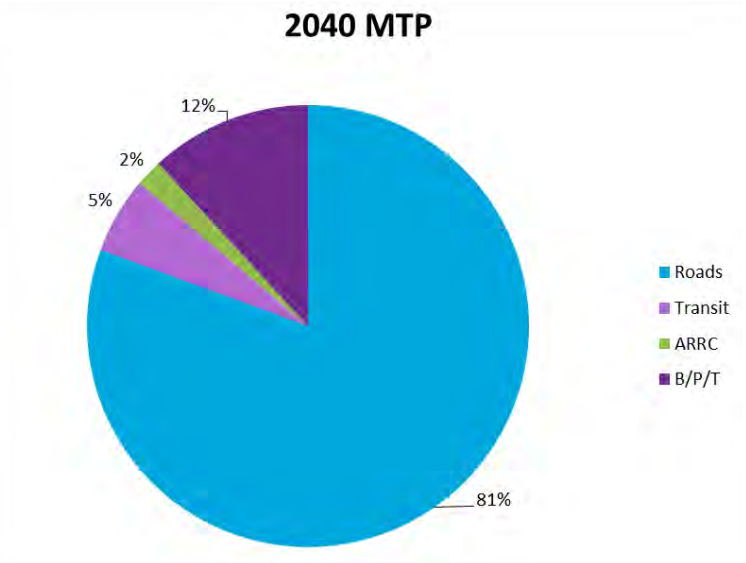


Figure 6-1 AMATS Historical, Programmed, and Projected Capital Funding

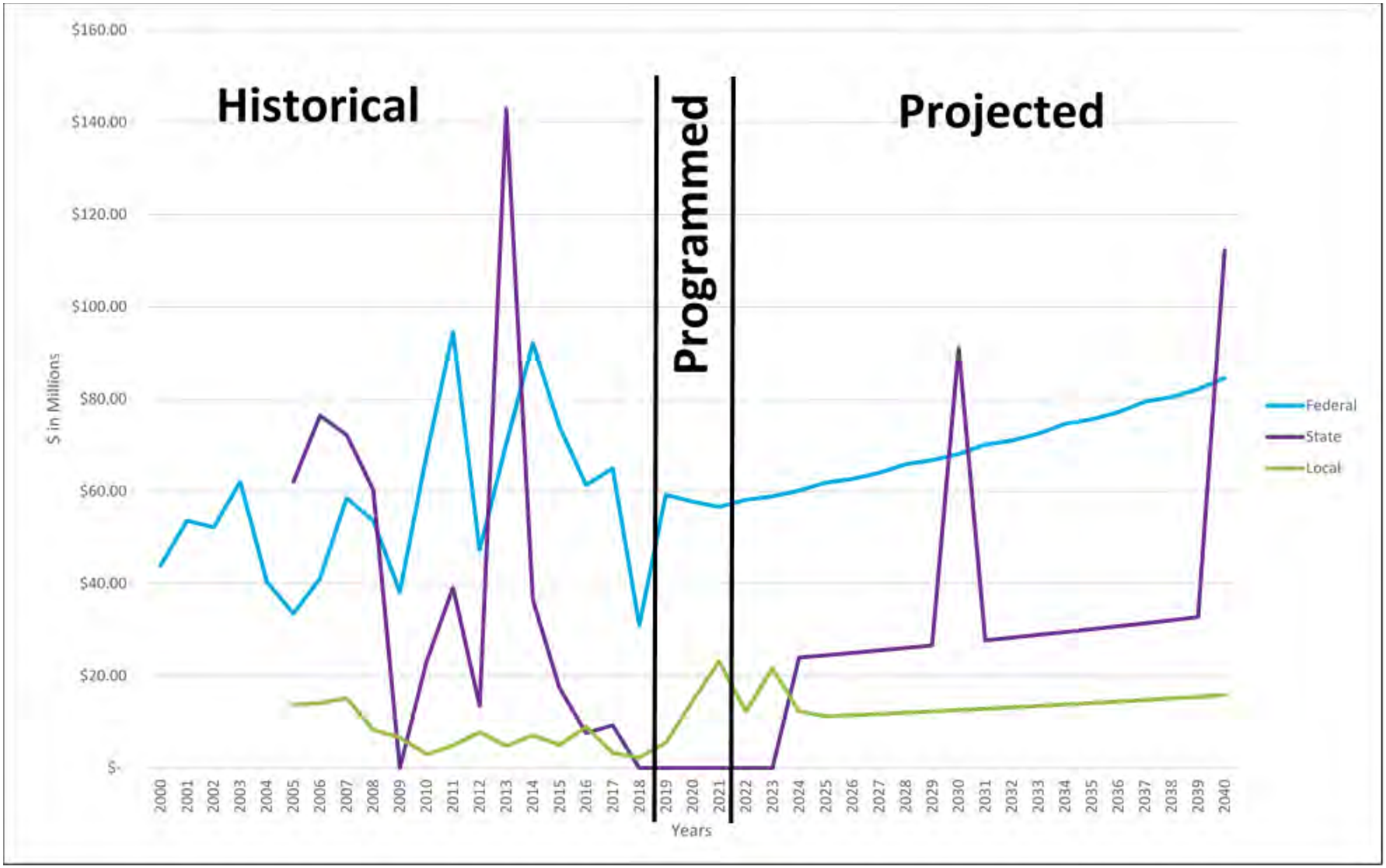


Table 6-3 Revenue Sources (in year of expenditure dollars)**

REVENUE SOURCES	Notes*	REVENUE IN $ MILLIONS		
		Short-Term (2018-2030)	Long-Term (2031-2040)	Total
		Total	Total	
MOA Road Capital (Road Bonds to MTP Projects)	Note 1	59.6	78.7	138.3
State Legislative Grants (Not Including State Bonds) - NHS	Note 2	65.9	112.3	178.2
State Legislative Grants (Not Including State Bonds) -Non-NHS	Note 2	101.8	173.7	275.4
Federal Other	Note 3	0	0	0
FHWA NHS (Anchorage & Chugiak/Eagle River)	Note 4	340.6	353.9	694.6
FHWA Non-NHS (Anchorage & Chugiak/Eagle River)	Note 5	273	271.2	544.2
HSIP	Note 6	75.4	66.3	141.7
GO Bond	Note 7	64	78.8	142.8
Road Capital Revenue Source Total		**980.3**	**1,134.90**	**2,115.20**
Non-motorized Funds (10% of AMATS Allocation)	Note 8	42.7	41.7	84.4
Transportation Alternative Program (AMATS)	Note 9	13.6	12.4	26
MOA Capital (Bonds to Bike/Ped MTP Projects)	Note 10	101.4	62.2	163.6
State Legislative Grants - Non-Motorized	Note 11	10.9	18.6	29.5
Bike/Ped/Trails Capital Revenue Source Total		**168.6**	**134.9**	**303.5**
MOA Local Funds for Transit Capital	Note 12	0	0	0
General Obligation Bond Proceeds for Transit Capital	Note 13	2.4	2.3	4.7
State General Revenue for Transit Capital	Note 14	0.5	0.6	1.1
FTA Urbanized Area (UAP) program (5307)	Note 15	13.3	13	26.3
FTA Capital Program Funds (5309)	Note 16	7.1	6.9	14
MAP-21/FAST Bus & Bus Facilities Formula (5339)	Note 17	5.8	2.5	8.3
AMATS CAMQ Funding for Transit	Note 18	47.3	41.7	89
Transit Capital Revenue Source Total		**76.4**	**67**	**143.4**
Railroad track, Facilities, and Infrastructure	Note 19	29.1	21	50.1
Railroad Capital Revenue Total		**29.1**	**21**	**50.1**
Estimated Total Sources of Funding		**1,254.40**	**1,357.80**	**2,612.20**

*Notes 1 through 19 are provided in Appendix E. **Revenues include match amounts as required.

Operations and Maintenance

Roads & Non-Motorized

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

Estimated maintenance costs for sidewalks, bicycle paths, and trails adjacent to roadways are incorporated into the roadway O&M. The MOA Parks and Recreation Department estimated cost to maintain a trail that is not adjacent to a roadway at $2,600 per mile. As part of this MTP, 12.25 additional miles of trails, not adjacent to roadways are anticipated to be built at an additional cost of about $31,850 per year by the year 2040. This additional cost is expected to be absorbed as part of the annual budget for the MOA Parks and Recreation Department over time.

The O&M costs for new roadway projects recommended in this MTP is based on the current cost per lane mile times the new road lane miles added to the system as a result of implementation of the roadway projects.

DOT&PF and MOA jointly share the responsibility for maintaining roadways in the Anchorage Bowl. For the most part, the MOA maintains municipality-owned roads and the DOT&PF maintains state-owned roads. However, in cases where efficiencies can be achieved, the maintenance responsibilities have been shifted through formal maintenance agreements. The ability and willingness to pay the additional cost of maintaining an expanded system should be resolved before a commitment to build more infrastructure is made. The DOT&PF contracts with the MOA for certain O&M functions. As a result, the additional lane miles are further split between summer and winter maintenance responsibilities.

Assumptions for the O&M costs include the following:

- Conversions of four-lane roads to three-lane roads decrease the maintenance cost by one lane.
- There is no difference between the maintenance costs based on roadway classification. In other words, lane mile costs for freeways are the same as those for arterials.

The DOT&PF and MOA spent almost $67.6 million in 2018 for O&M of the public road system in the AMATS planning area. See Table 6-4 for the short and long-term periods. Based on the current O&M budgets, the average cost per lane mile are $5,400 on DOT&PF facilities, $16,900 within

ARDSA, and $7,700 within Chugiak Birchwood Eagle River Rural Road Service Areas (CBERRRSA). The cost to maintain a separated path or walkway adjacent to the roadway is included in the amounts. Although these amounts differ by responsible organization, it is important to note that the services provided also differ. For example, ARDSA includes the expensive costs of increased time spent by crews clearing and hauling snow in residential streets.

New roads and lanes to be built as a part of the MTP implementation will add maintenance cost of about $500,000 per year by 2040. During the 2018-2040 MTP planning period, O&M costs for the road system are project to be $2.204 billion.

In some cases, the recommended MTP projects may result in a net cost savings for maintenance, especially where improvements to the existing substandard roadbed and drainage reduce the need to repair the roadway surface.

It is assumed that DOT&PF and MOA will continue the current level of service for maintaining the existing system and additional lane miles added as a part of the MTP projects.

Table 6-4 O&M Road Costs (Revenue and Expenses in $ Millions)

O&M EXPENSES	SHORT TERM (2018-2030) TOTAL	LONG TERM (2031-2040) TOTAL	TOTAL
DOT&PF O&M	244.1	263.1	507.2
DOT&PF Pavement Replacement	350	338.5	688.5
AMATS Pavement Replacement	55.9	43	98.9
MOA ARDSA	314	306.3	620.3
MOA CBERRRSA	45.2	44.1	89.3
MOA Pavement Replacement	125.4	74.5	199.9
Estimated Total Expenses	1,134.60	1,069.50	2,204.10
REVENUE ESTIMATES			
AMATS Pavement Replacement	55.9	43	98.9
DOT&PF Pavement Replacement	350	338.5	688.5
MOA Road Capital (Road Bonds to LRTP Surface Rehabilitation Projects)	125.4	74.5	199.9
Alaska Legislative Capital Program	28.2	48.1	76.3
DOT&PF O&M Budget	141.2	138.6	279.8
Traffic Signal Management	25.6	3	50.6
MS4 Permit Compliance	15.5	14.2	29.7
Deferred Maintenance	33.6	37.2	70.8
MOA ARDSA O&M Budget	314	306.3	620.3
MOA CBERRRSA O&M Budget	45.2	44.1	89.3
Estimated Total Sources of Funding	1,134.60	1,069.50	2,204.10

Assumptions: DOT&PF and MOA will continue to maintain the existing system and additional land miles added as part of the MTP to the current level of service. The system will be maintained at the level of funding available. 2.1% growth in both revenue and expenses for the O&M budgets.

Public Transportation

This 2040 MTP maintains the existing public transportation services for People Mover, AnchorRIDES, and RideShare.

The Municipality of Anchorage Public Transportation Department (PTD) redesigned and implemented a new bus system in October of 2017. Because the entire system was implemented at once, the public has not yet weighed in on future service expansion ideas. This process is underway now. With extensive public engagement and community dialogue, the PTD is currently developing a new short-range transit plan that will prioritize future investments when additional funding is available. Based on historical revenue, economic climate, available funding sources, and political discourse, no additional operating funding is forecasted between now and 2040. Once the PTD has adopted the new short-range transit plan (developed with public input) and future revenue is projected to increase, future projects can be included in the 2040 MTP.

To maintain the current level of service, the required peak-period fleet is 45 buses. The estimated annual O&M costs are estimated to be $32.2 million in the Short Term and $40.9 million in the Long Term. Table 6-14 shows the annual funding and expenditures for the O&M of the public transportation system in short- and long-term periods.

The AnchorRIDES fleet will remain at 54 vehicles. With increased emphasis on coordinated human services transportation from federal and state funding sources, most of the increase in O&M costs will be provided through other sources, similar to the current Medicaid funding for many AnchorRIDES trips.

Without additional funding, the RideShare carpool program is not expected to increase. The majority of the O&M costs for the program are from rider fees; however, FHWA CMAQ funds will be used to provide funding for project overhead.

The operating budget for the public transportation system is funded by multiple sources; local property tax dollars; passenger fares; grants from the FTA and FHWA; advertising revenues; and other miscellaneous revenues.

The State of Alaska, which occasionally provides funding for small capital projects, had not provided operating funding for public transportation until the 2011 legislative session, when $1.0 million statewide was approved for a 50/50 matching to cover capital and operations costs. In 2019, that funding was eliminated. For the 2040 MTP, it is assumed that there would be no state support for public transportation.

Funding for the expanded operations of the public transportation system will require increased MOA general fund allocations or new sources. Funding from property taxes depends on the willingness of the Municipal Assembly and the MOA Administration to allocate money for this purpose and on support of the general public. Many other public transportation systems receive allocations from additional funding sources, such as a percentage of sales tax, gasoline tax, or vehicle registration tax.

Table 6-5 O&M Public Transportation Costs (Revenues and Expenses in $ Millions)

O&M EXPENSES	SHORT TERM (2018-2030) TOTAL	LONG TERM (2031-2040) TOTAL	TOTAL
Public Transportation O&M Costs	418.1	408.8	826.9
Estimated Total Expenses	418.1	408.8	826.9
REVENUE ESTIMATES			
MOA Local Funds	261.4	255.9	517.3
General Obligation Bond Proceeds	0	0	0
State General Revenue	1.2	1.4	2.6
FTA Metropolitan Planning (5303)	4.1	4.1	8.2
FTA Urbanized Area (UAP) program (5307)	43	41.9	84.9
FTA Special Needs/ADA (5310)	1.2	1	2.2
Other USDOT Grants	18	17.6	35.6
Passenger Fares	84.6	82.4	167
Facility Rental, Bond Premiums, Property Sales	0.8	0.8	1.6
Advertising Revenues	3.5	3.5	7
Other Directly Generated Funds	0.2	0.3	0.5
Estimated Total Sources of Funding	418.1	408.8	826.9

Assumption: The system will be maintained at the level of funding available. 2.1% growth in both revenue and expenses for the O&M budgets.

Conclusion

Ongoing costs to operate and maintain the transportation system are borne by the MOA and the State of Alaska from annual operating budgets. Transportation system infrastructure development improvements, rehabilitation, and preservation are costly endeavors. The recommended transportation plan outlined in Chapter 6 will cost approximately $2.6 billion for capital items and $3.0 billion for O&M items.

As indicated by the financial constraint analysis, AMATS estimates there will be sufficient revenues to cover project implementation and maintenance costs to the year 2040.

Chapter 7

MTP2040

LINK - CONNECT - MOVE

Recommendations

Our transportation choices shape the city and our lives. Our ability to travel influences where we can go and how we spend our time. This chapter summarizes the plan's recommended transportation improvements.

Chapter

7

Introduction

The MTP heard from the public and other stakeholders that the transportation system should be more multimodal. The MTP also heard that it needs to be more environmentally sustainable, be adaptable to new technologies, connect neighborhoods better, be safer, and provide more mobility for everyone. Recommendations in this chapter balance community welfare and quality of life with supporting a transportation system that is safe, efficient, and economically feasible. The MTP also has to ensure that no particular group is unequally burdened and that there is equitable access to travel opportunities.

The recommendations balance what residents want based on future transportation needs and is affordable. It represents a comprehensive set of transportation improvements based on a fiscally constrained regional transportation investment strategy.

Recommended projects are intended to help implement our transportation goals and address national federal goals and planning factors. The MTP reflects Anchorage's desire to reduce the number of trips made by vehicles operated by a single person—i.e., Single-Occupancy Vehicles (SOVs). Potential benefits of reducing SOV trips include:

- **Reducing congestion and travel delay**
- **Reducing environmental impacts, such as improving air quality from vehicle emissions**
- **Healthier residents**
- **Reducing road maintenance needs**
- **Reducing the need for parking, which frees up land for other uses.**

This chapter makes recommendations for public transportation, non-motorized, and road projects (see Figure 7-1). Of the short-term projects (2018-2030), 41 percent of the recommended projects are non-motorized projects while 42 percent are roadway projects. The remaining 17 percent are transit or rail projects. There is a similar distribution in the long-term project list. This distribution reflects Anchorage's desire to become a more multimodal community while keeping the existing system functioning.

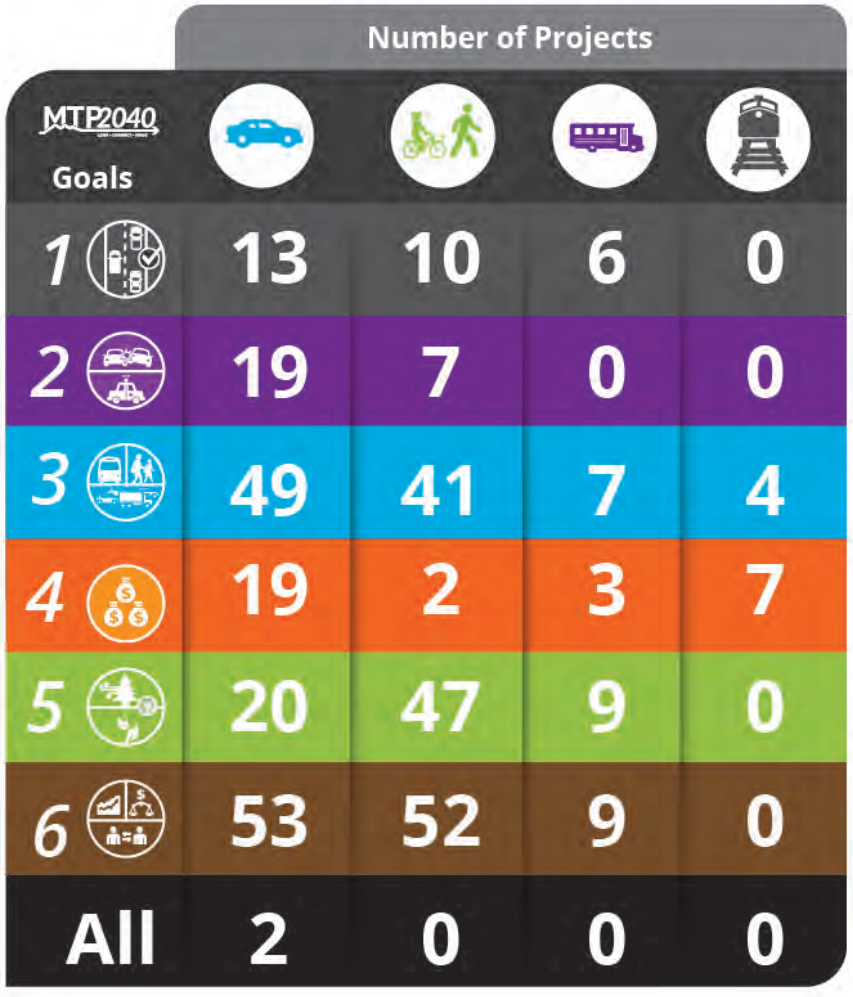
As noted in Chapter 6, it's important to note that the Municipality of Anchorage Public Transportation Department (PTD) redesigned and implemented a new bus system in October of 2017. Because the entire system was implemented at once, the public has not yet weighed in on future service expansion ideas. This process is underway now. With extensive public engagement and community dialogue, the PTD is currently developing a new short-range transit plan that will prioritize future investments when additional funding is available. Once the PTD has adopted the new short-range transit plan (developed with public input) and future revenue is projected to increase, future projects can be included in future metropolitan transportation plans.

Figure 7-1 Summary of Projects by Mode

	Number of Projects		
MTP2040	Short Term	Long Term	Illustrative
	38	17	20
	37	13	2
	9	9	0
	7	7	0

To make sure the recommended projects help implement Anchorage's transportation goals, each project was evaluated to determine which goal it contributed to. The results are shown in Figure 7-2. Please note: the totals may not match as some projects help implement multiple goals.

Figure 7-2 Summary of Projects by Goal



AMATS also evaluated the recommended projects to make sure they help make progress towards the federal performance measures. Figure 7-3 shows that the 2040 MTP recommendations should help AMATS achieve their targets.

See Chapter 3 for additional information about performance measures and targets.

Figure 7-3 Summary of Projects Implementing Performance Measures

Roads

Roadways will continue to be an important part of the Anchorage transportation system. Roads provide mobility and access not just for cars, but also for transit and non-motorized users. Roadway improvements are needed for a variety of purposes. Some projects are meant to keep the existing system in good repair. Other projects will improve safety, improve effective or physical capacity, allow the existing system to operate more efficiently, or improve system connectivity. Some projects are included because the need has already been studied and a build solution has been recommended, or the project exists in a low-density area where driving is expected to remain the dominant mode of transportation.

AMATS has a long-term goal of decreasing vehicle trips. As a result, many roadway projects include a multimodal component. Some road projects support public transportation (such as transit buses, paratransit,and RideShare), while others incorporate bike lanes and sidewalks, which would benefit non-motorized users. By providing multimodal projects, AMATS provides people with alternatives that allow them to shift away from making vehicle trips. This creates more space for vehicles that need to be on the road, such as freight deliveries and emergency services. It also allows transit to move faster and more efficiently through the road network.

Figure 7-4 and Figure 7-5 show the locations of the recommended roadway projects on maps of the Anchorage Bowl and Chugiak-Eagle River areas. Short-term and long-term recommended road projects are listed in Table 7-1 and Table 7-2, respectively. Project listing order and numbers in these tables do not indicate a priority order within the short- and long-term periods.

Due to anticipated funding constraints, some road projects that had merit are not anticipated to be able to be completed by 2040 with the projected revenue. These projects are included as illustrative projects and are listed in Table 7-3. These projects don't fit within the fiscal constraints of the plan, but could move into the funded plan at a later date if additional funding is identified.

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
100	32nd Avenue and 33rd Avenue Rehabilitation - Arctic Blvd to Old Seward Highway	Rehabilitate 32nd Avenue and 33rd Avenue from Arctic Blvd to Old Seward Highway to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 16,000,000	
101	36th Avenue Access Management Study - Spenard Road to Denali Street	Study access management treatments such as: turn restrictions; modifying local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from 36th Avenue wherever practical. Project would consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Circulation, and Access Management. Key Land Use Features: Reinvestment Focus Area	2, 3, 5, 6	Injuries & Fatalities	$ 1,500,000	
102	3rd/6th Avenue Couplet/5th Avenue Two Way Conversion/E Street Conversion - L Street to Ingra -Gambell/3rd to 4th Avenue	Convert the existing 5th/6th couplet to a 3rd/6th couplet. 3rd Avenue to become one-way westbound traffic. E Street and 5th Avenue to become two-way traffic contingent on the 3rd Ave conversion. Purpose: Safety (Vision Zero High Injury Network Corridor), Freight (Proposed Regional Truck Route), Circulation, and Access. Key Land Use Features: Reinvestment Focus Area	2, 3, 4, 5, 6	Injuries & Fatalities	$ 10,729,157	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
103	Academy Drive/Vanguard Drive Area Traffic Circulation Improvements - Brayton Drive to Abbott Road	Improve and re-align Academy Drive and Vanguard Drive west of Abbott Road. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity and Access. Key Land Use Features: Transit Supportive Development Corridor	3, 5, 6	N/A	$ 16,100,000	
104	Air Quality Public & Business Awareness Education Campaign	The goal of this program is to further inform the public about air quality issues and what steps people make take to reduce pollution. Purpose: Air Quality. Key Land Use Features: None	5, 6	Environmental Sustainability	$ 4,404,099	
105	Anchorage Ridesharing/ Transit Marketing	This project funds the Municipal Share-A-Ride program which promotes, subsidizes, and contract manages an area-wide vanpool commuter service; and a comprehensive public transportation marketing effort. Purpose: Reduce Person VMT/VHT, Air Quality, Congestion. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 13,212,298	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
106	C Street/Ocean Dock Rd Ramp and Intersection Improvements - C Street Viaduct to Ocean Dock Road	This project would rehabilitate the C Street/Ocean Dock Road Intersection based on the alternative #3 produced from the C Street/Ocean Dock Road Reconnaissance Study completed in 2018. Project would include non-motorized and drainage improvements. Purpose: Preservation of Existing Facility, Freight (Proposed Regional Truck Route and Problem Location), and Connectivity. Key Land Use Features: None	1, 3, 4, 6	Pavement Condition, Performance of the NHS	$ 6,000,000	
107	Dowling Road/Seward Highway Interchange Reconstruction	Reconstruct the Dowling Road/Seward Highway interchange. Project would include on-motorized improvements and consider adjacent land use. Purpose: Congestion, Safety (Vision Zero High Injury Network Corridor). Key Land Use Features: None	2, 3, 6	Injuries & Fatalities, Environmental Sustainability	$ 30,000,000	
108	Dr. Martin Luther King Jr Avenue Extension - Elmore Road to Piper Street	Extend Dr. Martin Luther King Jr Avenue from Elmore Road to the south end of Piper Street. The new roadway would include non-motorized improvements. Purpose: Access, Connectivity, Congestion. Key Land Use Features: None	3, 6	Environmental Sustainability	$ 16,000,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
109	East 4th Avenue Signal and Lighting Upgrade - A Street to Ingra Street	Reconstruct the traffic signal and street lighting system along 4th Avenue between A Street and Ingra Street. Sidewalk and curb ramps will also be replaced. Purpose: Preservation of Existing Facility. Key Land Use Features: Reinvestment Focus Area, Greenway Supported Development Corridor	1, 6	N/A	$ 7,824,000	
110	Fireweed Lane Rehabilitation - Spenard Road to Seward Highway	This project would rehabilitate Fireweed Lane from Spenard Road to the Seward Highway and include a road diet. Changing Fireweed from 4 lanes to 3 lanes (2 with a center turn lane). This project would also include non-motorized improvements. Purpose: Preservation of Existing Facility, Transportation System Management, and Connectivity. Key Land Use Features: Reinvestment Focus Area	1, 3, 5, 6	N/A	$ 9,500,000	
111	Glenn Highway Capacity Improvements Phase II - Artillery Road Interchange to Hiland Road Interchange	Construct improvements to the southbound Glenn Highway from Artillery Road Interchange to Hiland Road Interchange. Purpose: Congestion, Connectivity, Freight (Proposed Regional Truck Route), Capacity. Key Land Use Features: None	3, 4, 6	Environmental Sustainability, Freight Movement/Economic Vitality	$ -	$ 53,000,000

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
112	Glenn Highway Hiland Road Interchange Reconstruction	Reconstruct the Glenn Highway Interchange at Hiland Road. Make necessary non-motorized improvements including connection of the Glenn Highway pathway. Evaluate the need for a two lane on ramp from Hiland Road Interchanges to the weigh station. Project would consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route), Connectivity, Access, Capacity, and Congestion. Key Land Use Features: None	3, 4, 6	Environmental Sustainability, Freight Movement/Economic Vitality, Performance of the NHS, Bridge Condition	$ 30,000,000	
113	Glenn Highway Interchange Analysis - North Eagle River to Eklutna	Assess the following interchanges for current and future operations and make recommendations for any improvements: Old Glenn Hwy/Eklutna Village Rd, Thunderbird Falls, Mirror Lake, North Peters Creek/Settlers Dr, South Peters Creek/Ski Rd, Birchwood Loop Rd North, Birchwood Loop Rd South, North Eagle River Interchange. Purpose: Capacity, Congestion, and Freight (Proposed Regional Truck Route). Key Land Use Features: None	3, 4, 6	Environmental Sustainability, Freight Movement/Economic Vitality, Performance of the NHS, Bridge Condition	$ 5,657,120	
114	Glenn Highway: Hiland Road & Artillery Road Interchanges Planning and Environmental Linkages (PEL) Study	This project will further refine and analyze Glenn Highway interchange concepts at Hiland Road and Artillery Road in order to evaluate environmental challenges and improve the understanding of various design issues and anticipated project costs. Bridges within the project area include #0535, 1327, 1328 & 1341. Purpose: Congestion, Capacity, Freight (Proposed Freight Truck Route), Connectivity. Key Land Use Features: None	3, 4, 6	Environmental Sustainability, Freight Movement/Economic Vitality, Performance of the NHS, Bridge Condition	$ 2,000,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
115	Jewel Lake Road Rehabilitation - Strawberry Road to Raspberry Road	Rehabilitate Jewel Lake Road from Strawberry Road to Raspberry Road. Add missing shoulder and pathway links. Project would consider the adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: Transit Supportive Development Corridor	1, 3, 5, 6	N/A	$ 4,000,000	
116	Lake Otis Pkwy/Dowling Road Intersection Improvements	Lake Otis Pkwy/Dowling Road Intersection improvements that could include protected right turn lanes, pedestrian refuge islands, and signal improvements. Project would include non-motorized improvements and consider adjacent land use. Purpose: Congestion. Key Land Use Features: Transit Supportive Development Corridor	3, 5, 6	Environmental Sustainability	$ 5,261,454	
117	Midtown Congestion Relief Project	Upon completion of the Midtown Congestion Relief Planning and Environmental Linkages (PEL) study and after the NEPA process identifies a preferred alternative purchase Right of Way for future improvements from Tudor Road to 20th Avenue and extend the Seward Highway frontage roads. Project would include interim projects identified as part of the Midtown Congestion Relief PEL. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity, Access, Congestion, Capacity, and Freight (Regional Truck Route). Key Land Use Features: None	3, 4, 6	Environmental Sustainability, Freight Movement/Economic Vitality, Performance of the NHS	$ 193,288,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
118	Midtown Corridor Improvements Denali Street Area	Upgrade Denali Street from Benson Blvd to Tudor Road and 36th Avenue from A Street to the Old Seward Highway. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Connectivity, Access. Key Land Use Features: Greenway Supported Development Corridor, Reinvestment Focus Area	2, 3, 6	Injuries & Fatalities	$ 45,400,000	
119	Minnesota Drive - Northern Lights Blvd/Benson Blvd Improvements	Widen Minnesota Drive to build parallel left turn lanes, complete pedestrian crosswalk at signals, at Northern Lights Boulevard convert the through-left lanes to a left turn only lane, Benson Boulevard convert the through-left lane to an exclusive through lane and build a second left turn lane, update signal timing phasing to accommodate new lanes. Purpose: Safety (Vision Zero High Injury Network Corridor, Connectivity, Freight (Proposed Regional Truck Route), and Congestion. Key Land Use Features: None	2, 3, 5, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 7,590,000	
120	Minnesota Drive Multiway Blvd Planning and Environmental Linkages (PEL) Study - Hillcrest Drive to Tudor Road	Study the feasibility of converting Minnesota Drive from Hillcrest Drive to Tudor Road to a multiway blvd. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Freight (Proposed Regional Truck Route), Congestion, Connectivity, and Access. Key Land Use Features: Greenway Supported Development Corridor, Reinvestment Focus Area	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 1,000,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
121	Mountain Air Drive - Rabbit Creek Road to E 164th Avenue	Extend Mountain Air Drive from Rabbit Creek Road to E 164th Avenue. Recommend separated pathway. Purpose: Access and Emergency Response and Management. Key Land Use Features: None	2, 3, 6	N/A	$ 13,500,000	
122	Northern Lights Blvd/Benson Blvd Island Separated Turn Lanes - Minnesota Drive to Arctic Blvd	Install right turn lane pedestrian refuge separated islands along Northern Lights Blvd and Benson Blvd from Minnesota Drive to Arctic Blvd. Project would consider adjacent land use. Purpose: Safety (Vision Zero High Crash Corridor) and Transportation System Management. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	2, 3, 5, 6	Injuries & Fatalities	$ 5,309,125	
123	Old Klatt Road Rehabilitation - Timberlane Drive to Victor Road	Rehabilitate Old Klatt Road from Timberlane Drive to Victor Road to collector standards and make intersection improvements at Timberlane Drive and Old Klatt. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility. Key Land Use Features: None	1, 6	N/A	$ 11,300,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
124	Old Seward Hwy/O'Malley Road Interchange Study	Reconnaissance study to identify an interchange at Old Seward Highway and O'Malley Road. Project will incorporate operations and functional design of the Seward Highway and O'Malley Road interchange. Project would include non-motorized improvements and consider adjacent land use. Purpose: Congestion and Connectivity. Key Land Use Features: None	3, 6	Performance of the National Highway System, Environmental Sustainability	$ 500,000	
125	O'Malley Road Reconstruction - Lake Otis Pkwy to Hillside Drive	Reconstruct to improve safety, capacity, improve pedestrian facilities, and 3-lane section east of Lake Otis Pkwy. Project would consider adjacent land use. Purpose: Capacity, Congestion, and Connectivity. Key Land Use Features: None	3, 6	Environmental Sustainability	$ 27,400,000	
126	Potter Drive Rehabilitation - Arctic Blvd to Dowling Road	Rehabilitate Potter Drive from Arctic Boulevard to Dowling Road to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 3,900,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
133	Short Term MTP Implementation	Could include the following projects: AMATS Safety Plan, Glenn Highway Integrated Corridor Management Study, Glenn Highway Bus on Shoulder Study, Ingra/Gambell Pedestrian Safety Study (Ingra/Gambell, A/C, I/L), Midtown Subarea Transportation Plan, Regional Travel Survey, Street Typologies Plan, Traffic Signal Operations Plan, Intersection Operations and Safety Improvements Program, MTP Update, Emergency Access Secondary Road Network Studies, Port of Alaska Multimodal Improvements Study, Spenard Area Railroad Crossing Pedestrian Improvements Study, 92nd Ave Extension Reconnaissance Study, Chugach Way Area Transportation Element Study, TSMO Strategic Implementation Plan, Transit Supportive Development Corridor Strategic Implementation Plans (Spenard Road, 15th/Debarr Road, Northern Lights Blvd). Key Land Use Features (in select locations): Transit Supportive Development Corridor, Reinvestment Focus Area, Greenway Supported Development Corridor		All	$ 7,000,000	
134	Spenard Road Rehabilitation - Benson Blvd to Minnesota Drive	Rehabilitate Spenard Road from Benson Blvd to Minnesota Drive. Project would include non-motorized improvements and consider adjacent land use. Purpose: Congestion, Safety (Vision Zero High Injury Network Corridors), and Preservation of Existing Facility. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	1, 2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 54,000,000	
135	Spenard Road Rehabilitation - Minnesota Drive to Northwood Drive	Rehabilitate Spenard Road from Minnesota Dr to Northwood Drive. Project would include non-motorized improvements and consider adjacent land use. Purpose: Congestion, Safety (Vision Zero High Injury Network Corridors), and Preservation of Existing Facility. Key Land Use Features: Transit Supportive Development Corridor	1, 2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 20,000,000	

Table 7-1 Recommended 2040 MTP Road Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
136	Transportation Demand Management Projects	Funding for implementation of projects from the Transportation Demand Management study of the University Medical District. Linked Project: 137 Purpose: TDM, Congestion, Safety (Vision Zero High Injury Network Corridors), Freight (Proposed Regional Truck Route), Reduce Personal VMT/VHT. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area, Greenway Supported Development Corridor	2, 3, 4, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 5,000,003	
137	University Medical District Transportation Demand Management (TDM) Study	Project will complete a TDM study, evaluating transportation demand throughout the entire University Medical District and make recommendations for funding future projects. Linked Project: 136 Purpose: TDM, Congestion, Safety (Vision Zero High Injury Network Corridors), Freight (Proposed Regional Truck Route), Reduce Personal VMT/VHT. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area, Greenway Supported Development Corridor	2, 3, 4, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 500,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
200	Air Quality Public & Business Awareness Education Campaign	The goal of this program is to further inform the public about air quality issues and what steps people make take to reduce pollution. Purpose: Air Quality. Key Land Use Features: None	5, 6	Environmental Sustainability	$ 4,369,144	
201	Anchorage Ridesharing/ Transit Marketing	This project funds the Municipal Share-A-Ride program which promotes, subsidizes, and contract manages an area-wide vanpool commuter service; and a comprehensive public transportation marketing effort. Purpose: Reduce Person VMT/VHT, Air Quality, Congestion. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 13,107,431	
202	Eagle River Road Rehabilitation - MP 0.0 to MP 5.3 (Eagle River)	Rehabilitate approximately 6 miles of Eagle River Road from MP 0.0 to 5.3 to add turn lanes. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Congestion. Key Land Use Features: None	1, 3, 6	Environmental Sustainability	$ 28,950,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040) .cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
203	Glenn Highway NB Off-Ramp to Eagle River Rd	Construct a direct-access ramp from the existing Glenn Highway northbound off-ramp to Eagle River Rd. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity, Congestion, and Access. Key Land Use Features: None	3, 6	Performance of the NHS, Environmental Sustainability	$ 6,320,000	
204	Glenn Highway Artillery Road Interchange Reconstruction	Reconstruct the Glenn Highway Interchange at Artillery Road. Project would include non-motorized improvements, including connection of the Glenn Highway Pathway. Project would consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route), Connectivity, Access, Capacity, and Congestion. Key Land Use Features: None	3, 4, 6	Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 51,400,000	
205	Glenn Highway Freeway On-Ramp Merge Upgrades - Old Glenn Highway Interchange to JBER Interchange	Construct freeway on-ramp improvements on the Glenn Highway Interchanges as shown in the Glenn Highway Integrated Corridor Management Study. Purpose: Congestion. Key Land Use Features: None	3, 6	Environmental Sustainability	$ 25,000,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040) .cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
206	Glenn Highway Frontage Road Study - Thunderbird Falls to the Knik River Bridge	Explore concepts for a two-way continuous frontage road on the east side of the Glenn Highway from Thunderbird Falls Exit to the Knik River Bridge to provide an alternate route to the main lanes of the Glenn Highway. Project would include non-motorized improvements and consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route), Emergency Response and Management, Resiliency, and Connectivity. Key Land Use Features: None	2,3, 4, 6	Performance of the NHS, Environmental Sustainability	$ 500,000	
207	Glenn Highway Frontage Roads - Muldoon Road to Hiland Road	Construct a one-way 2 lane frontage road system on both sides of the Glenn Highway from Muldoon Road to Hiland Road. Purpose: Freight (Proposed Regional Truck Route), Emergency Response and Management, Resiliency, and Congestion. Key Land Use Features: None	2, 3, 4, 6	Performance of the NHS, Environmental Sustainability	$ 69,146,002	
208	Glenn Highway Tolling Study - Airport Heights Drive to Knik River Bridge	Study tolling on the Glenn Highway from Airport Heights Drive to Knik River Bridge. Project will include review of Federal and Alaska regulations/ legislation and requirements for tolling on the Glenn Highway. Project will explore ways for dedicating toll revenues for maintenance. Purpose: Congestion, TDM, and Freight (Proposed Regional Truck Route). Key Land Use Features: None	3, 4, 6	Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 500,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
209	Goldenview Drive Rehabilitation - Rabbit Creek Road to Romania Drive	Rehabilitate Goldenview Drive from Rabbit Creek Road to Romania Drive to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 37,000,000	
210	Huffman Road Rehabilitation - Pintail Street to Birch Road	Rehabilitate Huffman Road from Pintail Street to Birch Road to collector standards and include intersection improvements at Elmore Road and Pintail Street. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 10,937,243	
211	Long Term MTP Implementation	Could include the following projects: Chugiak High School Access Improvements Study, Government Hill Intersection Study, Government Hill Improved East-West Connector Study, Regional Travel Survey, Traffic Signal Operations Plan, Intersection Operations and Safety Improvements Program, MTP Update, Secondary Road Network Studies, Transit Supportive Development Corridor Strategic Implementation Plans (Bragaw Street C St - 15th Ave to 9th Ave), Transit Dedicated Lane Study, Raspberry Road Rehabilitation Study, Tudor/Piper Intersection Improvements Study. Key Land Use Features (in select locations): Transit Supportive Development Corridor, Reinvestment Focus Area, Greenway Supported Development Corridor		All	$ 7,000,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040) .cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
212	Midtown Congestion Relief Project	Reconstruct the Seward Hwy as a freeway from 20th Avenue to Tudor Road which may include interchanges at 36th Avenue, Northern Lights Blvd, Benson Blvd, Fireweed Lane, and the addition of frontage roads. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity, Access, Congestion, Capacity, and Freight (Proposed Regional Truck Route). Key Land Use Features: None	3, 4, 6	Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 250,125,000	
213	Minnesota Drive and 36th Avenue/Spenard Road Couplet Study	Study a one way couplet at Minnesota Drive and 36th Avenue/Spenard Road. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity, Congestion, and Safety (Vision Zero High Crash Location). Key Land Use Features: Reinvestment Focus Area, Transit Supportive Development Corridor	2, 3, 5, 6	Injuries and Fatalities, Performance of the NHS, Environmental Sustainability	$ 500,000	

Table 7-2 Recommended 2040 MTP Road Projects - Long Term (2031-2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
214	Seward Highway /Glenn Highway Connection - 20th Avenue (Chester Creek) to 13th Avenue	Construct freeway connection between Seward Highway/20th Avenue and 13th Avenue with freeway access and egress ramps onto Ingra/Gambell Streets near the northern termini of the project. Reconstruct Ingra Street/ Gambell Street and construct separated grade crossings of the freeway to reconnect portions of the east-west street system. Construct an interchange at Airport Heights Drive and Glenn Highway Intersection. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Congestion, Access, Connectivity, and Freight (Proposed Regional Truck Route). Key Land Use Features: Reinvestment Focus Area, Greenway Supported Development Corridor	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 237,500,000	
215	Tudor Road Access Management - Seward Highway to Arctic Blvd	Add on Tudor Road from the Seward Highway to Arctic Blvd access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Tudor Road wherever practical. Purpose: Congestion, Safety (Vision Zero High Injury Network Corridor), Access Management, and Freight (Proposed Regional Truck Route). Key Land Use Features: Reinvestment Focus Area	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 14,142,800	
216	Turnagain Street Rehabilitation - Northern Lights Blvd to 35th Avenue	Rehabilitate Turnagain Street from Northern Lights Blvd to 35th Avenue to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity and Preservation of Existing Facility. Key Land Use Features: None	1, 3, 6	N/A	$ 16,700,000	

Figure 7-4 Recommended 2040 MTP Road Projects - Short Term (2018-2030 .

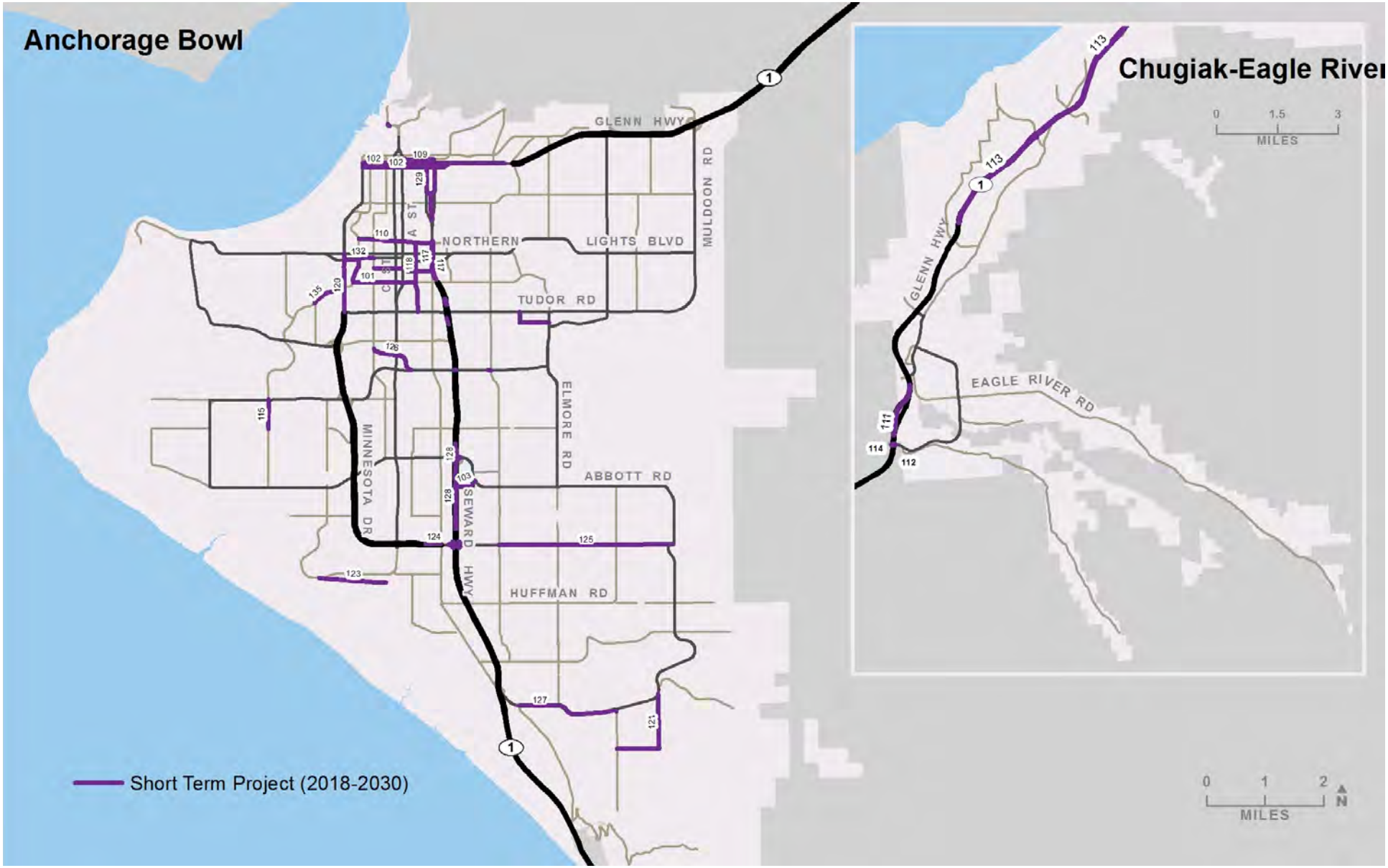


Figure 7-5 Recommended 2040 MTP Road Projects - Long Term (2031-2040)

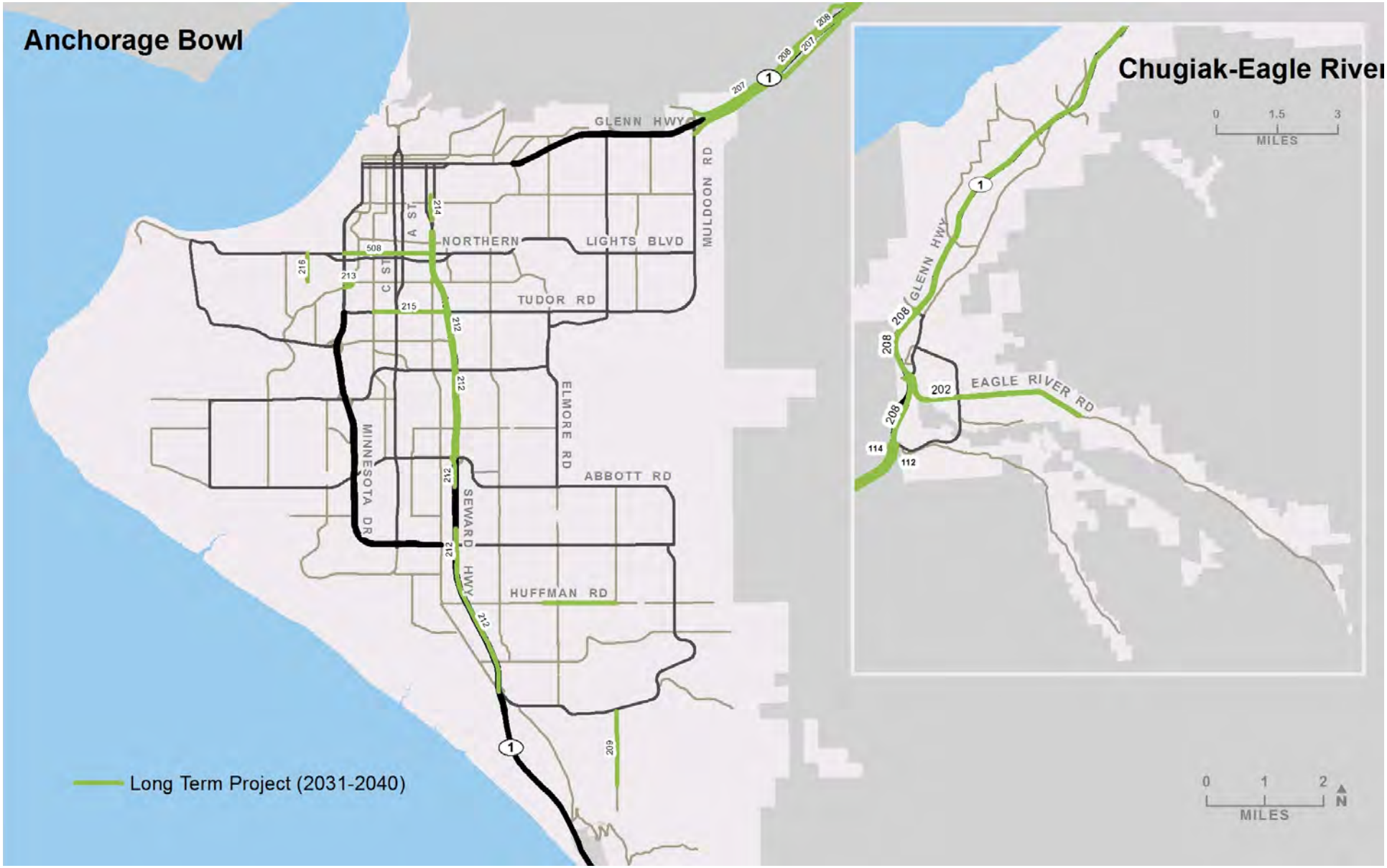


Table 7-3 2040 MTP Road Projects - Illustrative (after 2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
300	120th Ave Reconstruction - Johns Road to Old Seward Highway	Reconstruct 120th Avenue from Johns Road to Old Seward Highway to collector standards. This project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity. Key Land Use Features: None	3, 6	N/A	$ -	$ 9,000,000
301	48th Avenue/Cordova Street Reconstruction - Old Seward Highway to International Airport Road	Reconstruct 48th Ave/Cordova Streets from Old Seward Highway to International Airport Road to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity. Key Land Use Features: None	3, 6	N/A	$ 10,000,000	
302	C Street/ International Airport Road Intersection Improvements	C Street/International Airport Road Intersection improvements to address freight turning movements. Project would include non-motorized improvements and consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route and Freight Problem Location). Key Land Use Features: None	4, 6	N/A	$ 5,999,266	

Table 7-3 2040 MTP Road Projects - Illustrative (after 2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
303	Eagle River CBD - Phase II, Study (Eagle River)	Study to identify the recommended long-term solution for the CBD transportation system. Project would include non-motorized improvements and consider adjacent land use. Purpose: Connectivity and Access. Key Land Use Features: None	3, 6	Performance of the NHS	$ 500,000	
304	Glenn Highway Frontage Road - North Peters Creek to Thunderbird Falls exit	Construct a new two-way frontage road to the east side of the Glenn Highway from the North Peters Creek to the Thunderbird Falls exit. Project would include non-motorized improvements and consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route), Emergency Response and Management, Resiliency, and Connectivity. Key Land Use Features: None	2,3, 4, 6	Performance of the NHS	$ 12,384,586	
305	Glenn Highway HOV Lane - Airport Heights Drive to Peters Creek Interchange	Widen Glenn Highway from Airport Heights Drive to Peters Creek Interchange to add an HOV lane in each direction. Purpose: Freight (Proposed Regional Truck Route), Capacity, TDM, Congestion. Key Land Use Features: None	3, 4, 6	Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 111,625,189	

Table 7-3 2040 MTP Road Projects - Illustrative (after 2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
306	Glenn Highway Intermediate Interchange Ramp Terminal Upgrades	Construct roundabout at the JBER Interchange, the North Eagle River Interchange, the South Birchwood Interchange, the North Birchwood Interchange, and the South Peters Creek Interchange. Project would include non-motorized improvements and consider adjacent land use. Purpose: Freight (Proposed Regional Truck Route), Emergency Response and Management, Resiliency, and Congestion.	2, 3, 4, 6	Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 35,000,000	
307	Hartzell Road Rehabilitation - 79th Avenue to Dimond Blvd	Rehabilitate Hartzell Road from 79th Avenue to Dimond Blvd to collector standards. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 5,500,000	
308	Hiland Road Improvements - MP 1.0 to MP 2.2 and MP 3.4 to MP 8.3 (Eagle River)	Rehabilitate 6.1 miles of the existing two-lane Hiland Road to collector 1B standards with safety improvements at intersections. Project would include non-motorized improvements. Purpose: Preservation of Existing Facility and Connectivity. Key Land Use Features: None	1, 3, 6	N/A	$ 35,000,000	

Table 7-32040 MTP Road Projects - Illustrative (after 2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
309	Lake Otis Pkwy Reconstruction - Debarr Road to Northern Lights Blvd	Reconstruct and increase capacity of Lake Otis Parkway from Debarr Road to Northern Lights Blvd.Replace bridge over Chester Creek and reconstruct Lake Otis Pkwy/Northern Lights Blvd intersection. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Capacity, and Transportation System Management. Key Land Use Features: None	2, 3, 6	Injuries & Fatalities, Performance of the NHS	$ 45,000,000	
310	Minnesota Drive Multiway Blvd - Hillcrest Drive to Tudor Road	Convert Minnesota Drive from Hillcrest Drive to Tudor Road to a Multiway Boulevard. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Freight (Proposed Regional Truck Route), Congestion, Connectivity, and Access. Key Land Use Features: Reinvestment Focus Area, Greenway Supported Development Corridor	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 52,533,776	
311	Minnesota Drive/Spenard Road Intersection Improvements	Reconfigure Spenard Road approaches to eliminate split phasing, lengthen Minnesota Drive left turn lanes, and add Minnesota Drive southbound right turn lane. Purpose: Congestion, Safety (Vision Zero High Injury Network), and Freight (Proposed Regional Truck Route). Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	2, 3, 4, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 9,084,000	

Table 7-3 2040 MTP Road Projects - Illustrative (after 2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
312	Minnesota Drive/Tudor Road Intersection Improvements	Minnesota Drive/Tudor Road Intersection Improvements that could include eliminating the split phasing for the east and westbound phases at the intersection. Install southbound right turn lane on Minnesota. Will examine right turn split lanes and pedestrian refuges. Purpose: Safety (Vision Zero High Injury Network Corridor), Congestion, Freight (Proposed Regional Truck Route and Freight Problem Location), and Connectivity. Key Land Use Features: None	2, 3, 4, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 5,588,000	
313	Northern Lights/Benson Blvd Access Management - Seward Highway to Minnesota Drive	On Northern Lights/Benson Blvd from Seward Highway to Minnesota Drive add access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Northern Lights Blvd and Benson Blvd wherever practical. Purpose: Safety (Vision Zero High Injury Network), Connectivity, Access, and Access Management. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	2, 3, 5, 6	Injuries & Fatalities, Performance of the NHS,	$ 2,094,381	
314	Ocean Dock Road Rehabilitation - Whitney Road to Anchorage Port Road	Rehabilitate Ocean Dock Road from Whitney Road to Anchorage Port Road based on the findings from the Port of Alaska Multimodal Improvements Study. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility and Freight (Proposed Regional Truck Route, Problem Location). Key Land Use Features: Reinvestment Focus Area, Greenway Supported Development Corridor	1, 4, 5, 6	Pavement Condition	$ 24,009,081	

Table 7-3 2040 MTP Road Projects - Illustrative (after 2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
315	Raspberry Road Reconstruction - Sand Lake Road to Jewel Lake Road	Reconstruct Raspberry Road from Sand Lake Road to Jewel Lake Road based on recommendations from the related study. Project would include non-motorized improvements and consider adjacent land use. Purpose: Preservation of Existing Facility. Key Land Use Features: None	1, 6	N/A	$ 25,000,000	
316	Seward Highway /Glenn Highway Connection - 13th Ave to Airport Heights Interchange	Construct freeway connection between 13th Avenue and Airport Heights Interchange with freeway access and egress ramps along the alignment. Reconstruct Ingra Street/Gambell Street. Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Congestion, Access, Connectivity, and Freight (Regional Truck Route). Key Land Use Features: Reinvestment Focus Area, Greenway Supportive Development Corridor (13th to 5th Ave only)	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 662,500,000	
317	Seward Highway Reconstruction - Potter Weigh Station to Potter Marsh Turn Off (154th Avenue)	Reconstruct and widen Seward Hwy between Potter Weigh Station and Potter Marsh Turn Off (154th Ave). Project would include non-motorized improvements and consider adjacent land use. Purpose: Safety (Designated Safety Corridor), Capacity, Congestion, and Freight (Regional Truck Route). Key Land Use Features: None	2, 3, 4, 6	Injuries & Fatalities, Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 47,479,400	

Table 7-3 2040 MTP Road Projects - Illustrative (after 2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate	Funded Prior to this MTP
318	Seward Highway: Rabbit Creek Road to Girdwood Planning and Environmental Linkages (PEL) Study	Building off of the 2017 Seward Highway Route Development Plan: Reconnaissance Study, this project will plan and analyze impacts for conceptual project alternatives on segments of the Seward Highway from Rabbit Creek Road to Girdwood, reducing the time required to obtain environmental approval. Purpose: Safety (Designated Safety Corridor), Capacity, Congestion (Seasonal), and Promote Environmental Sustainability. Key Land Use Features: None	2, 3, 6	Injuries & Fatalities, Performance of the NHS, Freight Movement/Economic Vitality, Environmental Sustainability	$ 3,000,000	
319	Tudor Road Access Management - Seward Highway to Patterson Street	On Tudor Road from Seward Highway to Patterson Street add access management and turn restrictions; modify local connections to make adjacent property access to other roads; east-west or north-south access in lieu of direct access from Tudor Road wherever practical. Purpose: Congestion, Safety (Vision Zero High Injury Network Corridor), Access Management, and Freight (Regional Truck Route). Key Land Use Features: Transit Supportive Development Corridor, Greenway Supported Development Corridor	2, 3, 4, 5, 6	Injuries & Fatalities, Performance of the NHS, Environmental Sustainability	$ 42,024,320	

Non-Motorized Transportation

Non-motorized (pedestrian and bicycle) transportation is a low-cost and space-efficient way to travel. It has health benefits for both people and the environment. It contributes to a more attractive and livable city. Well-planned land use patterns help increase walking and bicycling by bringing people closer to their destinations.

The non-motorized recommended projects focuses on completing the missing pieces in the network, providing non-motorized facilities in higher density areas, and making walking and biking a safe and convenient option for all ages and abilities. The result will be high-quality, pedestrian-friendly facilities that are safe and comfortable. Table 7-2 and Table 7-3 list the recommended short- and long-term non-motorized projects. These projects are shown on Figure 7-6 and 7-7. It is important to note that many of the road projects also incorporate non-motorized improvements. Project listings and numbers in these tables do not indicate a priority order within the short- and long-term periods.

Due to anticipated funding constraints, some non-motorized projects that had merit are not anticipated to be able to be completed by 2040 with the projected revenue. These projects are included as illustrative projects and are listed in Table 7-6. These projects don't fit within the fiscal constraints of the plan, but could move into the funded plan at a later date if additional funding is identified.

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
400	3rd Avenue Pathway - E Street to Post Road	Construct a separated pathway on 3rd Avenue from E Street to Post Road. Project would consider adjacent land use. Purpose: Connectivity, Safety (Vision Zero High Injury Network Corridor), Air Quality, and Access. Key Land Use Features: None	2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 12,000,000
401	88th Avenue Bicycle Lanes - Jewel Lake Road to Northwood Street	Construct bicycle lanes on 88th Ave from Jewel Lake Road to Northwood Street. Project would consider adjacent land use. Purpose: Air Quality and Enhanced Connectivity. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 1,000,000
402	A St Sidewalk/Pathway - 13th Ave to Fireweed Lane	Construct a sidewalk/pathway on the west side of A Street from 13th Ave to Fireweed Lane. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	3, 5, 6	Environmental Sustainability	$ 20,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
403	A St West Side Sidewalk - Benson Blvd to 36th Ave	Construct a missing sidewalk on the western side of A Street from Benson Blvd to 36th Ave. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, Access, and Safety (Vision Zero High Injury Network Corridor). Key Land Use Features: Transit Supportive Development Corridor	2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 5,000,000
404	A St West Side Sidewalk - Fireweed Lane to Benson Blvd	Construct a missing sidewalk on the western side of A Street from Fireweed Ln to Benson Blvd. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, Access, and Safety (Vision Zero High Injury Network Corridor). Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 5,000,000
405	A Street Sidewalk/Pathway Study - 13th Ave to Fireweed Lane	Study the feasibility of constructing a sidewalk/pathway on the west side of A Street from 13th Ave to Fireweed Lane. Project would consider adjacent land use. Purpose: Air Quality, Connectivity, and Access. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	3, 5, 6	Environmental Sustainability	$ 250,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
406	Anchorage Bowl Central Business District Intersection Pedestrian Improvements Study	A Central Business District (CBD) Intersection study that evaluates the need for additional pedestrian improvements at all intersection crossings within the CBD including an evaluation of signal timings. Project would consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Air Quality, and Freight (Regional Truck Route). Key Land Use Features: None	2, 4, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 500,000
407	Boniface Parkway Sidewalk - Debarr Road to Craig Drive	Construct missing sidewalk on Boniface Parkway from Debarr Road to Craig Drive. Project would consider adjacent land use. Purpose: Connectivity and Air Quality. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 4,000,000
408	Campbell Trail Lighting Construction - Victor Road to Seward Highway	Construct lighting along Campbell Creek Trail from Victor Road to Seward Highway. Project would consider adjacent land use. Purpose: Improve Travel Conditions and Air Quality. Key Land Use Features: None	3, 5, 6	N/A	$ 5,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
409	Campbell Trail Overcrossing at Lake Otis Parkway	Construct an overcrossing of Lake Otis Parkway for the Campbell Trail. Project would consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Air Quality, and Connectivity. Key Land Use Features: None	2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 13,000,000
410	Chugach Foothills Connector Phase II - Regal Mountain Drive to Campbell Airstrip Road	Project will construct a multi-use path on Tudor Road between Regal Mountain Drive and Campbell Airstrip Road. Purpose: Access, Connectivity, and Air Quality. Key Land Use Features: None	3, 6	Environmental Sustainability	$ 2,200,000
411	Coastal Trail South Extension - Kincaid Park to Jodphur Street	Extend the Coastal Trail from Kincaid Park to Jodphur Street. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 3,100,000
412	Coastal Trail Widening - Earthquake Park to Westchester Lagoon	Widen the Coastal Trail to 14' wide from Earthquake Park to Westchester Lagoon. Project would consider adjacent land use. Purpose: Capacity and Air Quality. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 2,600,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont..

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
413	Coronado Street Separated Pathway - Old Glenn Highway to Echo St, along North Eagle River Loop Spur to North Eagle River Loop Road	Construct a separated pathway on Coronado Street from Old Glenn Highway to Echo Street and along North Eagle River Loop Spur to North Eagle River Loop Road. Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 4,000,000
414	Debarr Road Pathway/ Sidewalk Widening and Rehabilitation - Orca Blvd to Turpin Street	Widen and Rehabilitate existing facility on north side of Debarr Road from Orca Blvd to Turpin Street. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality. Key Land Use Features: Transit Supportive Development Corridor	1, 5, 6	Environmental Sustainability	$ 11,000,000
415	Debarr Road Sidewalk Widening/ Upgrade - Boniface Parkway to Muldoon Road	Widen/Upgrade existing sidewalk on south side of Debarr Road from Boniface Parkway to Muldoon Road. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality. Key Land Use Features: Transit Supportive Development Corridor, Reinvestment Focus Area	1, 5, 6	Environmental Sustainability	$ 3,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
416	Downtown Trail Connection - Coastal Trail to Ship Creek Trail	Construct a connection between Tony Knowles Coastal Trail to the Ship Creek Trail in downtown Anchorage. Project would consider adjacent land use. Purpose: Connectivity and Air Quality. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 13,000,000
417	E Street Shared Road Bicycle Facility - 3rd Avenue to 9th Avenue	Construct shared road bicycle facility on E Street from 3rd Avenue to 9th Avenue. Project would consider adjacent land use. Linked Project: 421 Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: Reinvestment Focus Area	3, 5, 6	Environmental Sustainability	$ 5,000,000
418	Eagle River Road Rehabilitation and Extension - Old Glenn High way to Mile Hi Ave	Rehabilitate the Eagle River Road Pathway from the Old Glenn Highway to just east of Hillcrest Lane. Include pathway sweeps at driveways. Extend the Eagle River Road Pathway from just east of Hillcrest Lane to Mile Hi Ave. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality.	1, 5, 6	Environmental Sustainability	$ 3,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
419	Eagle River Town Center Walkways Study	Study the feasibility of constructing missing walkways within the Eagle River Town Center as shown in the 2003 Eagle River Central Business District Revitalization Plan figure 3-7. Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 500,000
420	Elmore Road East Side Sidewalk/Pathway Rehabilitation - Tudor Road to Dr Martin Luther King Jr Drive	Rehabilitate and widen the east side sidewalk/pathway on Elmore Road from Tudor Road to Dr Martin Luther King Jr Drive. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality. Key Land Use Features: Reinvestment Focus Area	1, 5, 6	Environmental Sustainability	$ 500,000
421	G Street Shared Road Bicycle Facility - 3rd Avenue to 9th Avenue	Construct shared road bicycle facility on G Street from 3rd Avenue to 9th Avenue. Project would consider adjacent land use. Linked Project: 417 Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: Reinvestment Focus Area	3, 5, 6	Environmental Sustainability	$ 5,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
422	Glenn Highway Trails Marking - VFW Road to Brooks Loop	Install Glenn Highway Trail connection markings/signage from the VFW Road to Brooks Loop. Purpose: Connectivity and Air Quality. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 600,000
423	Golden Bear Drive Sidewalks Construction - Muldoon Road (North) to Bartlett High School	Construct missing sidewalks on Golden Bear Drive from Muldoon Road (North) to Bartlett High School. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 1,000,000
424	Klatt Road Paved Shoulder Bikeway - Victor Road to Puma Street	Widen the paved shoulder bikeway on Klatt Road from Victor to Puma Street. Project would consider adjacent land use. Purpose: Connectivity and Air Quality. Key Land Use Features: None	3, 5, 6	Environmental Sustainability	$ 1,000,000
425	Lake Otis Parkway Sidewalk Rehabilitation - 68th Avenue to Abbott Road	Widen and Rehabilitate the sidewalks on Lake Otis Parkway from 68th Avenue to Abbott Road. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality. Key Land Use Features: Transit Supportive Development Corridor	1, 5, 6	Environmental Sustainability	$ 3,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
426	Mountain View Drive Pathway Reconstruction - Bliss Street to North Bunn Street	Project will reconstruct a multi-use pathway connecting Peterkin Avenue with Mountain View Drive between Bliss Street and North Bunn Street. Purpose: Safety (Vision Zero High Injury Network Corridor), Air Quality, and Preservation of Existing Facility.	1, 2, 6	Injuries & Fatalities, Environmental Sustainability	$ 750,000
427	Northern Lights Blvd Sidewalk/Pathway Rehabilitation - Wesleyan Drive to Muldoon Road	Rehabilitate and widen the sidewalks/pathways on Northern Lights Blvd from Wesleyan Drive to Muldoon Road. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality.	1, 5, 6	Environmental Sustainability	$ 6,000,000
428	Northern Lights Blvd Sidewalk/Pathway Rehabilitation - Drake Drive to Lake Otis Parkway	Rehabilitate and widen the separated pathway on south side of Northern Lights Blvd from Drake Drive to Lake Otis Parkway. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality.	1, 5, 6	Environmental Sustainability	$ 250,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
429	Northwood Drive Sidewalk Rehabilitation - Raspberry Road to 80th Ave	Rehabilitate and widen the sidewalks on Northwood Drive from Raspberry Road to 80th Ave. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality.	1, 5, 6	Environmental Sustainability	$ 4,000,000
430	Old Seward Highway Pathway - DeArmoun Road to Rabbit Creek Road	Construct a pathway along Old Seward Highway from DeArmoun Road to Rabbit Creek Road and connect with the termini of the non-motorized improvement(s) done as part of the Rabbit Creek Road - Seward Highway to Goldenview Drive Reconstruction project. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access. Link to project 127.	3, 5, 6	Environmental Sustainability	$ 3,000,000
431	O'Malley Road Separated Pathway - C Street to Old Seward Highway	Construct a separated pathway along O'Malley Road from C Street to Old Seward Highway. Project would consider adjacent land use. Purpose: Connectivity, Access, Air Quality, and Freight (Regional Truck Route).	3, 4, 5, 6	Environmental Sustainability	$ 1,000,000
432	Patterson Street Bike Lanes - Debarr Road to South Fork Chester Creek Trail	Install bike lanes on Patterson Street from Debarr Road to South Fork Chester Creek Trail. Project would consider adjacent land use. Purpose: Connectivity and Air Quality.	3, 5, 6	Environmental Sustainability	$ 1,000,000

Table 7-4 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
433	Raspberry Road Bicycle Lanes - Kincaid Park Entrance to Sand Lake Road	Install bike lanes on Raspberry Road from the Kincaid Park entrance to Sand Lake Road. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 1,000,000
434	Reka Drive Sidewalks Construction - Bragaw Street to Pine Street	Construct missing sidewalk on Reka Drive from Bragaw Street to Pine Street. Project Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 6,000,000
435	Seward Highway Pedestrian Overcrossing - Rabbit Creek Elementary	Construct ADA ramps for existing Seward Highway pedestrian overcrossing at Rabbit Creek Elementary. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 2,000,000
436	Tudor Road Pedestrian Pathway - Minnesota Drive to Harding Drive	Construct pedestrian facilities on Tudor Road from Minnesota Drive to Harding Drive to connect to the existing facilities on either side of the railroad tracks. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 250,000

Table 7-5 Recommended 2040 MTP Non-Motorized Projects - Long Term (2031-2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
500	Chester Creek Trail Widening - Westchester Lagoon to Goose Lake	Widen the Chester Creek trail from Westchester Lagoon to Goose Lake to 14' wide. Project would consider adjacent land use. Purpose: Capacity and Air Quality.	3, 5, 6	Environmental Sustainability	$ 7,000,000
501	Eagle River Loop Road (Veteran's Memorial Highway) Separated Pathway - Glenn Highway to Eagle River Bridge	Construct a separated pathway parallel to Eagle River Loop Road (Veterans Memorial Highway) from Glenn Highway to Eagle River Bridge to link with existing pathway on either end. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 2,000,000
502	Elmore Road Pathway Construction - DeArmoun Road to Rabbit Creek Road	Construct missing pathway on Elmore Road from DeArmoun Road to Rabbit Creek Road. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 2,000,000
503	Elmore Road Reconstruction - Providence Drive to Tudor Road	Reconstruct Elmore Road from Providence Drive to Tudor Road to add a non-motorized facility on the west side of Elmore Road. Project would consider adjacent land use. Purpose: Connectivity and Air Quality.	3, 6	Environmental Sustainability	$ 13,000,000

Table 7-5 Recommended 2040 MTP Non-Motorized Projects - Long Term (2018-2030) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
504	Glenn Hwy Trail - Eklutna Village Road to Knik River Bridge	Construct separated pathway on the Glenn Highway from Eklutna Village Road to Knik River Bridge. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 10,000,000
505	Glenn Hwy Trail - Birchwood Loop Road to Eklutna Village Road	Construct separated pathway on the Glenn Highway from Birchwood Loop Road to Eklutna Village Road. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 12,000,000
506	Lore Road Bicycle Lanes - Seward Highway to Lake Otis Parkway	Construct bicycle lanes on Lore Road from Seward Highway to Lake Otis Parkway. Project would consider adjacent land use. Purpose: Connectivity and Air Quality.	3, 5, 6	Environmental Sustainability	$ 1,000,000
507	Lore Road Pathway and Shared Road Bike Facility - Lake Otis Parkway to Elmore Road	Construct missing segment of pathway on Lore Road from Lake Otis Parkway to Spruce Street. Construct shared road bicycle facility on Lore Road from Lake Otis Parkway to Elmore Road. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 6	Environmental Sustainability	$ 3,000,000
508	Northern Lights Blvd Lane Reduction - Seward Highway and Minnesota Drive	Convert an existing travel lane on Northern Lights Blvd between the Seward Highway and Minnesota Drive to expand existing sidewalks. Project would consider adjacent land use. Purpose: Safety (Vision Zero High Injury Network Corridor), Air Quality, and Transportation System Management.	2, 3, 5, 6	Injuries & Fatalities, Environmental Sustainability	$ 7,164,706

Table 7-5 Recommended 2040 MTP Non-Motorized Projects - Long Term (2031-2040) .cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
509	Oberg Road Separated Pathway Construction - Glacier Vista Road to Glennway Drive	Construct a separated pathway along Oberg Road from Glacier Vista Road to Glennway Drive Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 1,000,000
510	Photo Avenue Sidewalk Construction - Spenard Road to Arctic Blvd	Construct a sidewalk along Photo Avenue from Spenard Road to Arctic Blvd. Project would consider adjacent land use. Purpose: Connectivity and Air Quality.	3, 5, 6	Environmental Sustainability	$ 1,000,000
511	Raspberry Road/Minnesota Drive Ramp Improvements	Tighten the radii at the ramp terminals along the south side of Raspberry Road at the Minnsota Drive Ramps to develop a more pedestrian/bicycle friendly-interchange. Purpose: Connectivity and Air Quality.	3, 6	Environmental Sustainability	$ 2,000,000
512	Tudor Road Separated Pathway/Sidewalk Rehabilitation - Minnesota Drive to Patterson Street	Rehabilitate separated pathway/sidewalk along Tudor Road from Minnesota Drive to Patterson Street. Project would consider adjacent land use. Purpose: Preservation of Existing Facility and Air Quality.	1, 5, 6	Environmental Sustainability	$ 25,000,000

Table 7-6 2040 MTP Non-Motorized Projects - Illustrative

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
600	Abbott Road/Hillside Drive Trail - Birch Road to DeArmoun Road	Construct a pathway/trail along Abbott Road/Hillside Drive from Birch Road to DeArmoun Road. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 40,000,000
601	Coastal Trail South Extension - Jodphur Street to Potter Marsh	Extend the Coastal Trail from Jodphur Street to Potter Marsh. Project would consider adjacent land use. Purpose: Connectivity, Air Quality, and Access.	3, 5, 6	Environmental Sustainability	$ 35,500,000

Figure 7-6 Recommended 2040 MTP Non-Motorized Projects - Short Term (2018-2030)

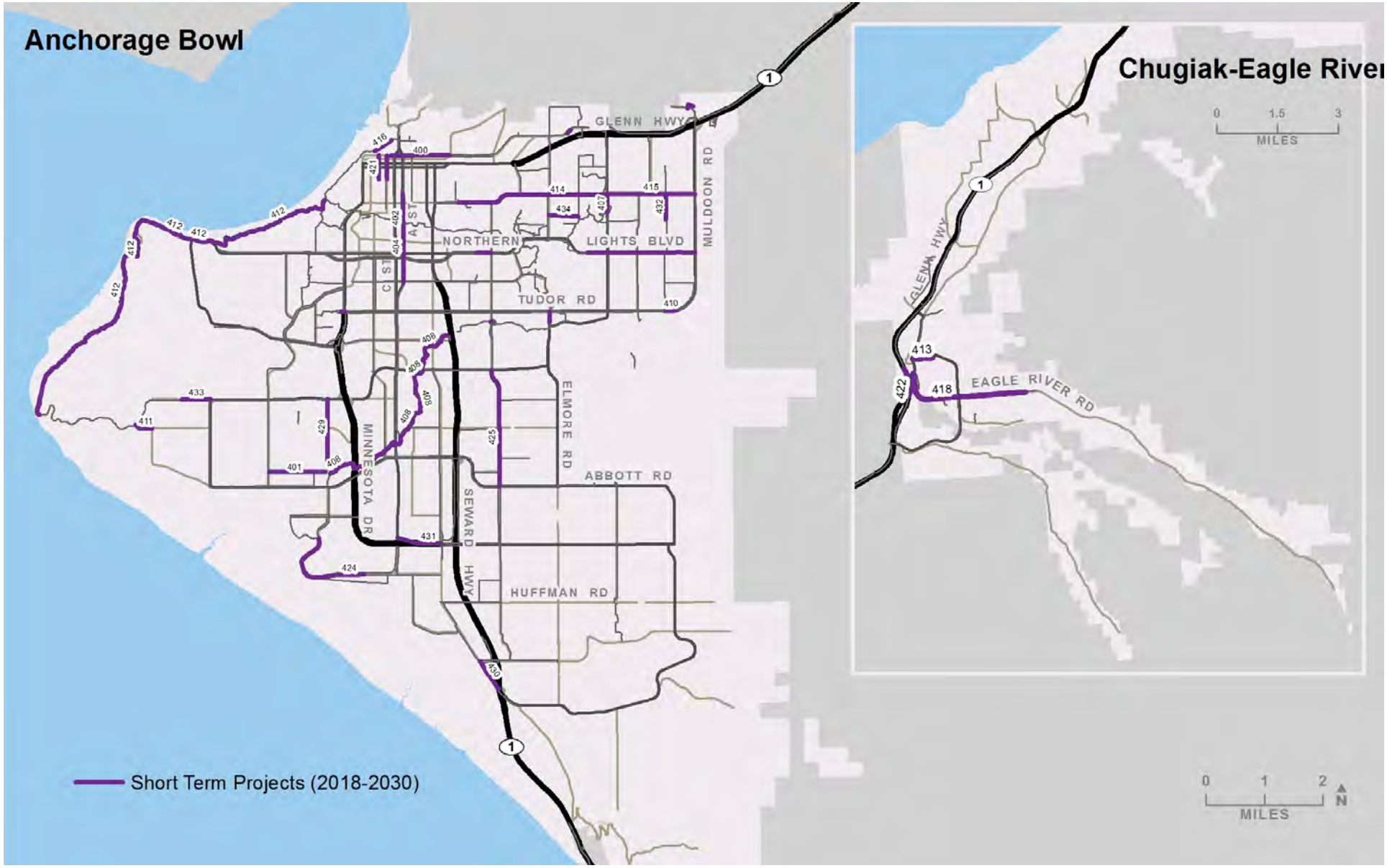
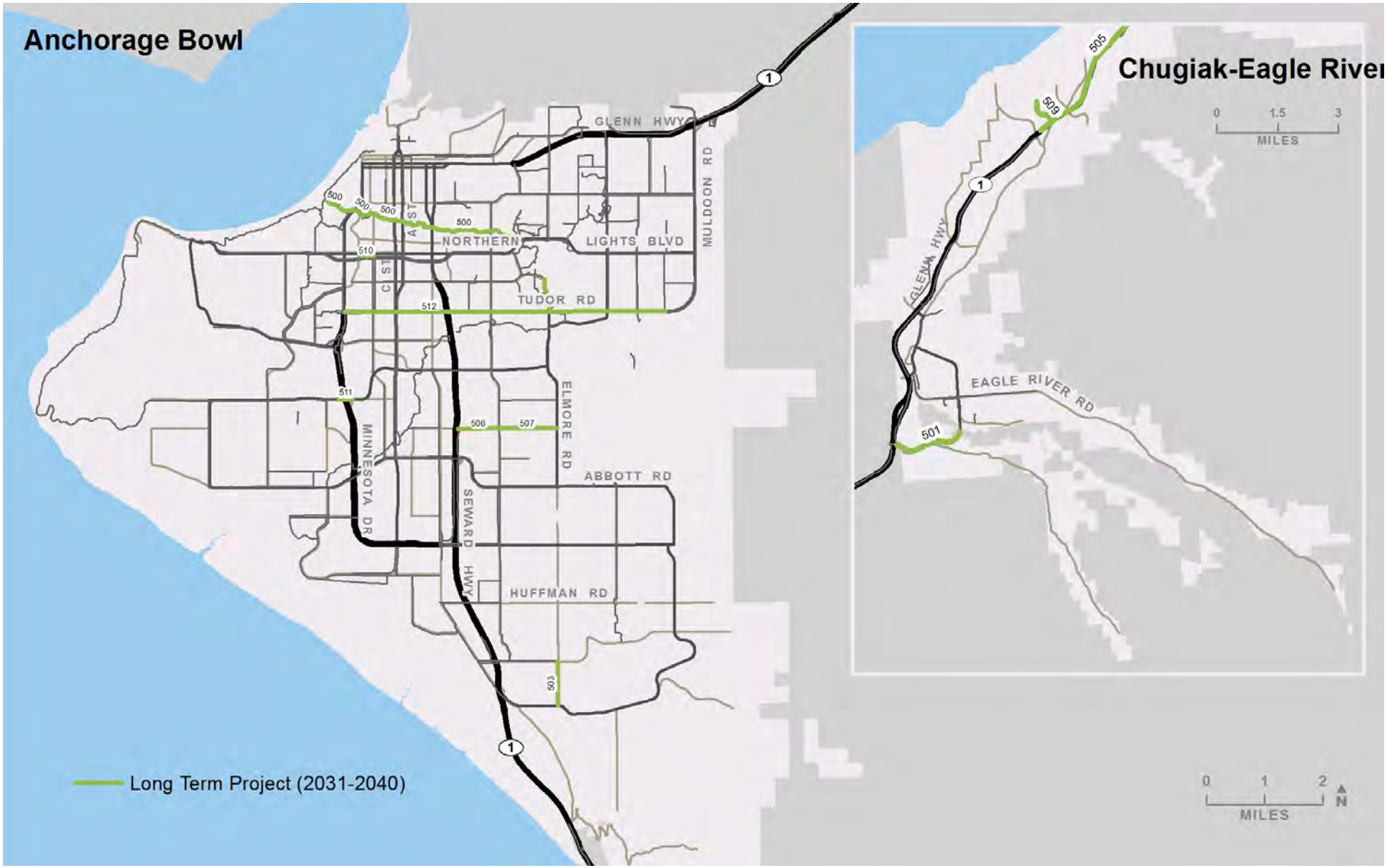


Figure 7-7 Recommended 2040 MTP Non-Motorized Projects - Long Term (2031-2040)



Public Transportation

Great transit is an essential part of a multimodal transportation system. Transit can move a lot of people in a small space. It helps grow an area without worsening traffic congestion and extends the distance a person can walk or bike. Transit provides a cost-effective and environmentally friendly alternative to SOVs. The MTP can influence transit ridership by funding road projects that support transit and by supporting transit-supportive land use decisions.

The challenge for public transportation is to provide sufficient capacity where demand is increasing, but still provide service to areas where ridership is stable or declining. Public transportation has historically lacked the funding it needs, making it hard to fund service improvements.

The good news is that Anchorage's existing transit system has enough extra capacity to accommodate more riders than it currently serves.

To expand service coverage areas or increase service levels, considerable investment would be required to implement the projects identified in PTD's short-range transit plan, currently under development.

Recommended public transportation projects are listed in Table 7-1. Project listings and numbers in these tables do not indicate a priority order within the short- and long-term periods. Project priority will be determined through Transit on the Move, the short-range transit planning process.

Table 7-6 Recommended 2040 MTP Public Transportation Projects - On-Going (2018-2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
700	Transit Intersection Signal Priority Improvements	Install bus signal priority at key intersections along frequent routes. Purpose: System Reliability.	3, 5, 6	Operations	$ 75,000
701	Bus Stop & Facility Improvements	This projects funds the upgrade of facility and bus stop sites to meet both the federally mandated Americans with Disabilities Act [ADA] requirements and the operational needs. Typical bus stop improvements include bus shelters, benches, trash receptacles, landscaping, grading, pacing, utility relocations, lighting, curb adjustments, drainage, constructing paths, and construction/reconstruction of turnouts. Typical facility improvements include upgrades, rehabilitation, and construction/reconstruction not limited to safety, security, facility equipment, structures, underground storage tanks, parking lots, sidewalks, and drainage.	3, 5, 6	Facilities	$ 1,000,000
702	Transit Fleet Replacement Operations	This project provides funding for replacement and potential operational assistance of the Public Transportation Department. The fleet consists of 13-passenger vans, MV-1, 22' and 40' buses that provide service to RideShare, AnchorRIDES, and People Mover. Vehicles will be replaced based on the FTA defined useful life and the People Mover Fleet Management Plan.	1, 5, 6	Rolling Stock / Operations	$ 2,000,000
703	Fleet Replacement/ Expansion	This project funds the fleet expansion and replacement for the AnchorRIDES paratransit service, as well as the fixed route fleet.	1, 5, 6	Rolling Stock	$ 200,000

MTP Goals: 1) Preserve the Existing System 2) Improves Safety 3) Improve Travel Conditions 4) Support the Economy 5) Promote Environmental Sustainability 6) Quality Decision-Making

Note: Project costs shown reflect an anticipated annual amount. Actual funding levels may vary year to year.

Table 7-6 Recommended 2040 MTP Public Transportation Projects - On-Going (2018-2040) cont.

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
704	Bus Stop Improvements/ 1% Section 5307 Transit Improvements	This project funds the upgrade of bus stop sites to meet both the federally-mandated Americans with Disabilities Act [ADA] requirements and the operational needs. Typical improvements include bus shelters, benches, trash receptacles, landscaping, grading, paving, utility relocations, lighting, curb adjustments, drainage, constructing paths, and construction/reconstruction of turnouts.	3, 5, 6	Facilities	$ 25,000
705	Fleet Improvement/ Support Equipment/ Support Vehicle	This project funds improvements to existing transit and paratransit fleets. Typical projects include a ticket reader and issue attachment, which issues passenger passes on the bus; security systems; transit/signal improvements for headway enhancements; mechanical equipment and other improvements for facilities; mobile display terminals' and vehicle communications, radios and locations systems. This project also funds the purchase of replacement vehicles and equipment to support operation of the transit system. Typical purchases include pickup racks, maintenance trucks with special equipment, supervisor vehicles, shift change vehicles, fork lifts, sweepers, and bus access snow removal equipment.	1,3, 5, 6	Rolling Stock / Equipment	$ 150,000
706	Transit Centers/ Support Facilities	This project supports an on-going effort to provide major transit facilities key areas of the city and major destinations. The Anchorage Comprehensive Plan and 2040 Land Use Plan (LUP) identified neighborhood, town, regional commercial, and city centers that function as focal points for community activities with a mix of retail, residential, and public services and facilities. Anchorage Talks Transit coordinated with the LUP and implemented a frequent bus network along transit supportive development corridors. These corridors should provide pedestrian connections to surrounding neighborhoods and transit. Existing and future facility improvements along these corridors and in areas like Midtown, Downtown, U-Med, Dimond Center and Muldoon, are vital to the implementation of these community planning documents.	1, 3, 4, 5, 6	Facilities	$ 150,000

MTP Goals: 1) Preserve the Existing System 2) Improves Safety 3) Improve Travel Conditions 4) Support the Economy 5) Promote Environmental Sustainability 6) Quality Decision-Making

Note: Project costs shown reflect an anticipated annual amount. Actual funding levels may vary year to year

Table 7-6 Recommended 2040 MTP Public Transportation Projects - On-Going (2018-2040)

MTP #	Project Name	Project Description	MTP Goals	Address Federal Performance Area	2018 Cost Estimate
707	Section 5310 Enhanced Mobility of Seniors & Individuals w/ Disabilities	Projects may include purchasing buses and vans; wheelchair lifts, ramps, and securement devices; transit-related information technology systems including scheduling/routing/one-call systems; mobility management programs; and acquisition of transportation services under a contract, lease, or other arrangement. Other activities may include travel training; volunteer driver programs; building an accessible path to a bus stop, including curb-cuts, sidewalks, accessible pedestrian signals or other accessible features; improving signage or way-finding technology; providing same day service or door-to-door service; purchasing vehicles to support new accessible taxi, ride-sharing and/or vanpooling programs; and mobility management programs.	1, 3, 4, 5, 6	Rolling Stock / Equipment / Facilities	$ 200,000
708	Section 5339 Bus and Bus Facilities Program	This program includes capital projects to replace, rehabilitate and purchase buses, vans, and related equipment, and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.	1, 3, 4, 5, 6	Rolling Stock / Equipment / Facilities	$ 600,000

MTP Goals: 1) Preserve the Existing System 2) Improves Safety 3) Improve Travel Conditions 4) Support the Economy 5) Promote Environmental Sustainability 6) Quality Decision-Making
Note: Project costs shown reflect an anticipated annual amount. Actual funding levels may vary year to year

Rail

The Alaska Railroad provides passenger and freight rail service from Anchorage to and from outlying areas. Passenger service provides an alternative mode of inter-city travel. Keeping passenger service safe and efficient will allow the ARRC to meet the needs of its passengers. Railroad projects are listed in Table 7-8.

Table 7-7 Recommended 2040 MTP Railroad Projects

MTP #	Project Name	Project Description	Address Federal Performance Area	2018 Cost Estimate
800	1% Transit Security on the Alaska Railroad Corporation projects.		Equipment	$ 150,000
801	Preventative Maintenance (5307)	This project partially funds statewide maintenance costs of passenger vehicle railcars and locomotives. Preventive maintenance is defined as all activities, supplies, materials, labor, services and associated costs required to preserve or extend the functionality and serviceability of the asset.	Rolling Stock, Facilities, Equipment, Infrastructure	$ 3,500,000
802	1% Associated Transit Enhancements	Can include benches, landscaping, and other transit related amenities.	Facilities	$ 130,000

Table 7-7 Recommended 2040 MTP Railroad Projects cont.

MTP #	Project Name	Project Description	Address Federal Performance Area	2018 Cost Estimate
803	Track Rehabilitation (5307)	Rail and tie rehabilitation within AMATS boundaries.	Infrastructure	$ 525,000
804	Radio System	Replace and/or upgrade radio system equipment and communication components.	Equipment	$ 290,000
805	Track Rehabilitation (5337)	Rail and tie rehabilitation within AMATS boundaries.	Infrastructure	$ 400,000
806	Preventative Maintenance (5337)	This project partially funds statewide maintenance costs of passenger vehicle railcars and locomotives. Preventive maintenance is defined as all activities, supplies, materials, labor, services and associated costs required	Rolling Stock, Facilities, Equipment, Infrastructure	$ 3,900,000

Freight

Anchorage is a gateway connection to the world for Alaska; freight shipments from elsewhere sustain the state and local economies. Modernizing the Port of Alaska (currently in process) is essential for safe, reliable, and cost-effective port operations. It will also improve the Port's resiliency, improve operational efficiency, and accommodate modern shipping operations. The modernization project will also allow the Port to better accommodate changing statewide economic and market needs. MTP freight projects include improving access to the Port, airport, and railroad terminals and those facilities' connections to the NHS. The cost of moving goods directly affects end-user costs as well as economic vitality. The AMATS Freight Advisory Committee provides a forum for continuing interaction with members of the freight community, as well as establishing a dialog on issues and concerns affecting freight operations.

Recommended Special Plans, Projects and Studies

MPOs may identify plans, projects, or studies that may be undertaken to provide additional analysis or detail, or to clarify need for and solutions to issues identified during MTP development. While this section is not meant to list every plan or study that may be undertaken by AMATS in the next 20 years, it indicates some of the major recommended plans and studies intended to be pursued (see projects #133 and #211 in the roadway table list).

Recommended Plan System Performance

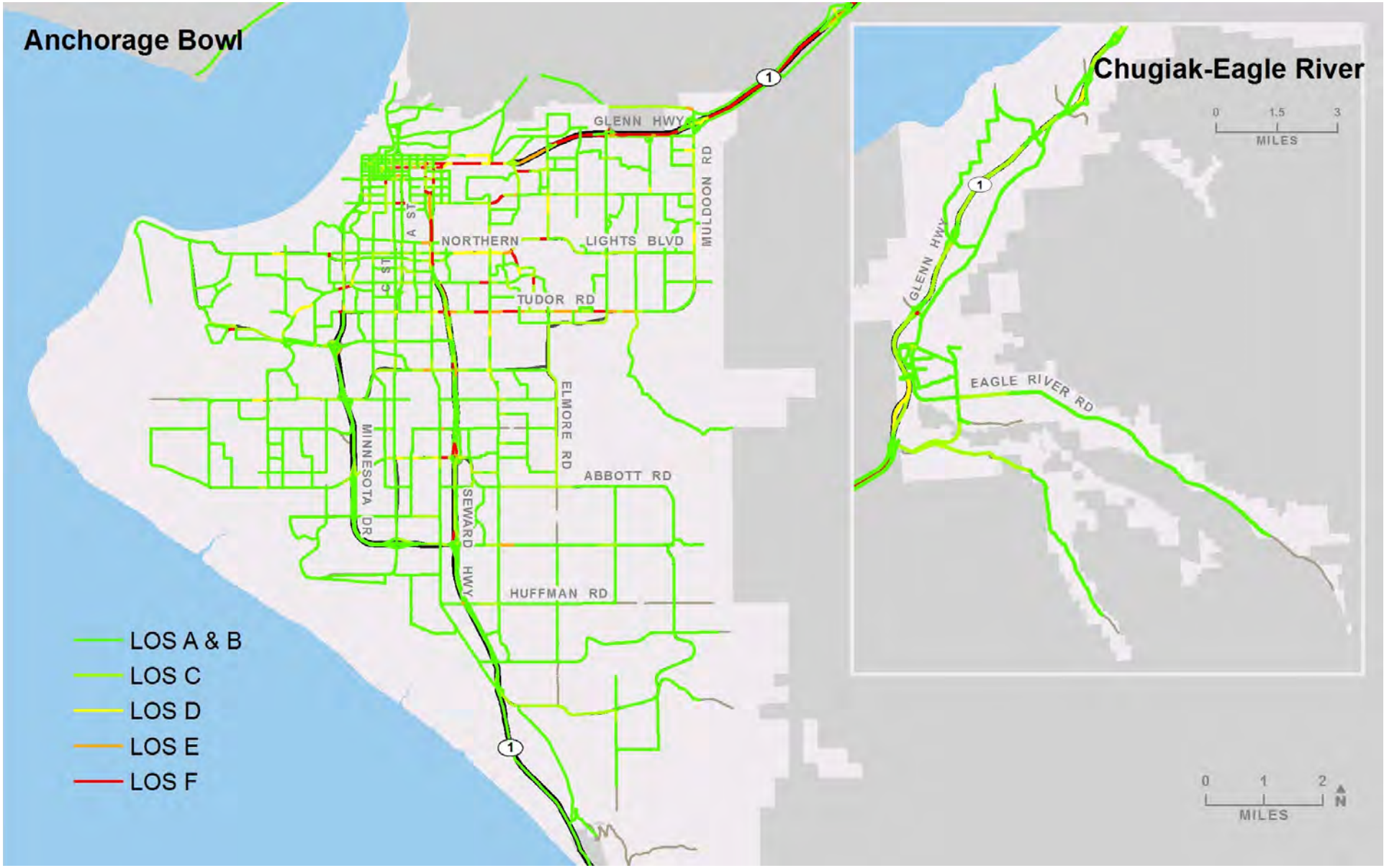
The 2040 MTP network consists of all the short-term and long-term road, public transportation, and non-motorized projects listed earlier in this chapter. Figure 7-5 hows how the recommended MTP network might perform in the peak period in 2040 in the Anchorage Bowl and Chugiak-Eagle River. In the Anchorage Bowl, most roads perform at an acceptable level-of-service. Some roads, mostly east-west connections, are likely to be overloaded and congested (orange and red segments). These include sections of the Glenn Highway, Tudor Road, and 5th Avenue.

Table 7-9 compared the recommendations to the 2013 existing conditions and the 2040 existing plus committed scenarios.

Table 7-9 Comparison of the Recommended Alternative to the 2013 Baseline and 2040 E+C

	2013	2040 E+C	Recommended Alternative
Auto Statistics			
VMT	4,639,283	5,914,460	5,977,705
VHT	119,635	152,808	149,162
VMT by LOS			
A	3,828,191	4,130,997	4,004,910
B	328,382	631,066	698,091
C	261,692	354,420	487,015
D	150,353	254,674	206,669
E	27,173	202,807	197,333
F	43,493	340,496	383,688

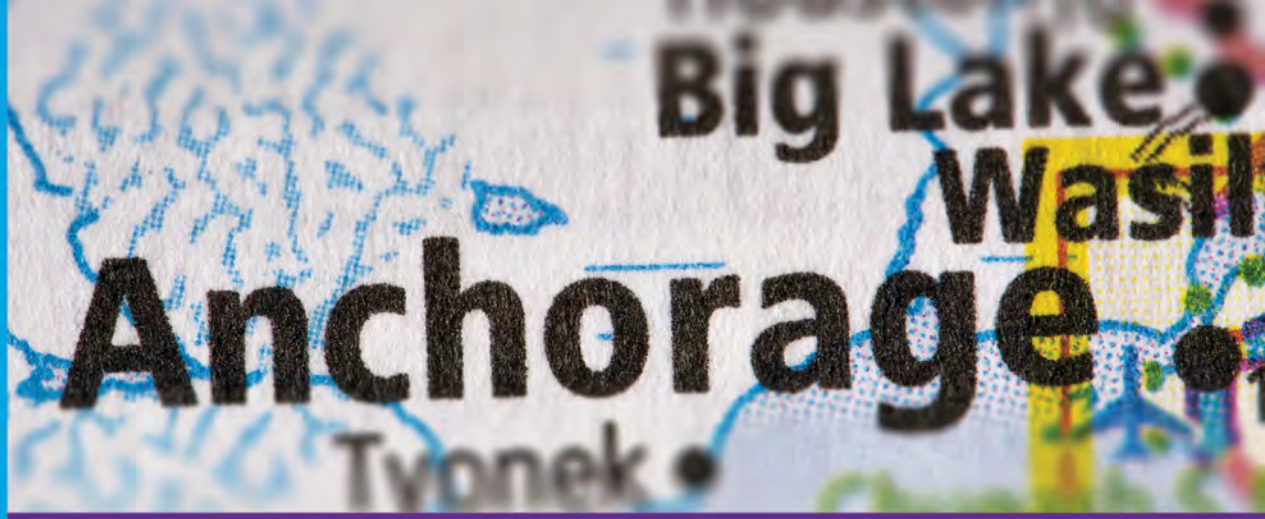
Figure 7-8 Recommended Alternative Peak Period LOS



Chapter

8

Implementation



MTP2040

LINK - CONNECT - MOVE

This chapter identifies the policy guidance and specific action items, organized by goal and objective, that are recommended to help implement the 2040 MTP.

Chapter

8

Introduction

This chapter identifies the policy guidance and specific action items, organized by goal and objective, that are recommended to help implement the 2040 MTP. Regular reassessment of progress, system performance, and traffic congestion will aid in establishing priorities for implementation activities. The action items below are those for which AMATS is responsible. Please note that each action is dependent on available funding.

GOAL 1 Preserve the Existing System: Maintain the transportation system in a state-of-good repair.

Objective 1A - Maintain and rehabilitate the existing transportation system to achieve and maintain a state of good repair for all modes.		
Item #	**Policy/Action**	**Description**
1A-1	Action	Utilize the System Preservation Performance Measures and Targets to help identify projects for the next MTP.

GOAL 2 Improve Safety: Increase the safety and security of the transportation network

Objective 2A - Reduce vehicle, pedestrian, and bicyclist crashes, especially those resulting in traffic fatalities and serious injuries.		
Item #	**Policy/Action**	**Description**
2A-1	Action	Explore removing Right Turn on Red at select locations within AMATS.
2A-2	Action	Coordinate with MOA and DOT&PF Traffic on ways to help address mega-blocks (long roadway segments having infrequent non-motorized crossings).
2A-3	Action	Review Vision Zero action items list for any that can be incorporated into the MTP, especially action items that relate to speeding, peak periods, and defensive driving.
2A-4	Action	Develop education campaigns for rules of road (for all users) and street safety (for all users).
2A-5	Action	For future road projects,address wildlife-vehicle incidents based on existing maps and traffic accident data and through consultation with the Alaska Department of Fish & Game and DOT&PF.
2A-6	Action	Utilize the Safety Performance Measures and Targets to help identify projects for the next MTP.
Objective 2B - Decrease emergency response time.		
2B-1	Action	Work with the Anchorage Police Department and Anchorage Fire Department to gather incident response time data to identify potential improvements for the next MTP.

Objective 2C - Reduce vulnerability and increase resiliency of transportation infrastructure from natural hazards and disasters.		
2C-1	Action	Identify neighborhoods that lack secondary access and identify potential improvements to aid resiliency and redundancy of access for the next MTP update.
2C-2	Action	Review MOA climate action plan for action items to include in the next MTP update. Participate in plan updates.
2C-3	Action	Review MOA All-Hazards Mitigation Plan for action items to include in the next MTP update.
Objective 2D - Minimize conflicts between freight and other motorized and non-motorized travelers.		
2D-1	Action	Collaborate with the trucking industry and create educational materials to help drivers and non-motorized users understand commercial vehicle requirements, particularly for stopping, turning radii, and sight distances, and provide information on how to operate more safely within heavily used freight corridors.
2D-2	Action	Identify potential conflict points based on proposed freight route map, transit routes, and bike/pedestrian facilities, along with stakeholder coordination, to identify improvements for the next MTP update.

GOAL 3 Improve Travel Conditions: Develop an efficient multi-modal transportation system to reduce congestion, promote accessibility, and improve system reliability.

Item #	Policy/Action	Description
3-1	Action	Investigate congestion management alternatives to roadway expansion projects.
3-2	Policy	Develop an interconnected network of streets, where appropriate, (a) to facilitate emergency response, particularly for fire and medical services; (b) for evacuation in event of disaster; (c) for ease and variety of travel; and (d) to promote even distribution of traffic.
3-3	Policy	Promote reduction of the carbon footprint resulting from the transportation system in the AMATS area through more efficient movement of people and goods.
Objective 3A - Decrease travel time		
3A-1	Action	Evaluate methods of improving travel-time data collection.
3A-2	Action	Utilize the Reliability Performance Measures and Targets to help identify projects for the next MTP.
Objective 3B - Improve, as necessary, expressway, arterials, and collector roads and intersections to safety and efficiently handle projected traffic.		
3B-1	Action	Maintain and update the AMATS travel model as needed.
3B-2	Action	Implement and update the MTP and TIP.

Objective 3C - Establish an adequate number of access points from subdivisions to adjacent higher-order streets.		
3C-1	Action	Continue to work with MOA Planning to ensure that the minimum number of access points are established during plat reviews for future development as required by the Municipal code.
Objective 3D - Improve the existing transportation system efficiency through the implementation of effective and innovative transportation system management,		
3D-1	Action	Make recommendations for additional TDM studies throughout the AMATS area based on the results of the U-MED TDM study.
3D-2	Action	Work with the Anchorage School District on congestion during pickup/drop-off at all schools and support school carpooling.
3D-3	Action	Implement the recommendations from the AMATS Transportation Systems Management and Operations (TSMO) Plan in the 2019-2022 TIP.
3D-4	Action	Update and improve the AMATS regional travel demand model to accommodate TSM/TDM strategies.
3D-5	Policy	Promote and support TSM and TDM projects that improve the efficiency and better utilization of existing roadway corridors.
3D-6	Policy	Support TSM strategies to 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, encourage consolidation of access in developing commercial and high-density residential areas through shared use of driveways and local access streets.
3D-7	Action	Explore development of a traffic operations center for the AMATS area.

Objective 3E- Promote bicycle, pedestrian, and transit use		
3E-1	Policy	Work with AMATS committees to define an achievable mode split target consistent with MTP Goals.
3E-2	Action	Revise current AMATS policy on funding percentage by mode and link it with the mode share percentage policy.
3E-3	Action	Continue to support MOA Planning on review of private development projects to ensure non-motorized amenities are provided.
3E-4	Action	Work on development of local and regional park-and-ride systems in conjunction with PeopleMover and MOA Planning.
3E-5	Action	Support MOA Planning and Traffic departments on parking strategies that support multi-modal transportation options.
Objective 3F - Improve accessibility to major education, recreation, employment, commercial, health care, and other public facilities.		
3F-1	Action	Coordinate with DNR on Chugach State Park Access improvements.
3F-2	Action	Continue to work with MOA Planning to preserve existing platted easements for trails and establish new platted easements in subdivisions for access to schools, regional parks, recreational facilities, employment centers, and institutional and governmental facilities.
3F-3	Action	Update the Area-wide Trails Plan.
Objective 3G - Enhance the physical connectivity between neighborhoods by increasing the number of roadway, pedestrian, bicycle, and transit connections.		
3G-1	Action	Review the CMP performance measures to develop a connectivity index for bike and pedestrian travel.

Objective 3H - Reduce congestion.		
3H-1	Action	Implement the recommendations from the AMATS Transportation Systems Management and Operations (TSMO) Plan in the 2019-2022 TIP.
3H-2	Policy	Promote increased use of TDM/TSM measures.
Objective 3I - Reduce the passenger vehicle miles traveled (VMT) and passenger vehicle hours traveled (VHT) per capita.		
3I-1	Action	Work with MOA Planning to implement the 2040 Land Use Plan to increase land use diversity and transit-supportive land use development consistent with the plan.
3I-2	Policy	Support initiatives that increase bicycle, pedestrian, and transit mode share.
Objective 3J - Increase competitiveness of transit.		
3J-1	Action	Utilize Transit System Reliability Performance Measures and targets to help identify projects for the next MTP.
Objective 3K - Improve year-round mobility.		
3K-1	Action	Work with the MOA on establishing districts to collect revenue for improved winter maintenance.
Objective 3L - Improve incident clearance time.		
3L-1	Action	Work with local emergency support providers to explore options for reducing incident clearance times.
Objective 3M - Improve system reliability for all modes.		
3M-1	Action	Utilize the System Reliability Measures and targets to help identify projects for the next MTP.

GOAL 4 Support the Economy: Develop a transportation sytem that supports a thriving, sustainable, broad-based economy.

Item #	Policy/Action	Description
4-1	Policy	Improve and promote access, mobility, signage, intermodal connectivity, efficiency, and circulation for freight in major transportation corridors for the Port of Alaska, Ted Stevens Anchorage International Airport (TSAIA), and the Alaska Railroad Corporation to maintain Anchorage, regional, state, and worldwide transportation services for passengers, goods, and national security.
Objective 4A - Optimize the transportation system to meet the needs of the Port of Alaska, TSAIA, the Alaska Railroad, military bases, employment centers, and industrial and commercial areas as well as to enhance intermodal capabilities.		
4A-1	Action	Adopt a freight route map.
Objective 4B - Enhance travel and tourism.		
4B-1	Action	Coordinate with the tourism industry on how to better integrate their needs into the AMATS process.
4B-2	Action	Develop a non-motorized marketing program like the Transit Marketing program in the TIP.
4B-3	Action	Review the non-motorized plan, when adopted, for policy/action item recommendations for the next MTP.
Objective 4C - Promote a dynamic transportation system that supports the local and regional economy and job growth.		
4C-1	Action	Track travel time data to the Port of Alaska and TSAIA and along the Glenn and Seward Highway corridors and via the NHS network.

Objective 4D - Set policy and plan for new technology such as autonomous vehicles and electric vehicles.		
4D-1	Action	Make recommendations for additional TDM studies throughout the AMATS area based on the results of the U-MED TDM study.
4D-2	Action	Continue to work with partner agencies on preparing for new and emerging technologies.
4D-3	Action	Work with partner agencies to explore waiting areas/transportation hubs for Uber/Lyft within AMATS.
4D-4	Action	Explore opportunities for an AV/CV downtown shuttle demonstration project.
4D-5	Action	Continue monitoring improvements to electric and autonomous vehicle technology and actions taken by other states and local communities.
4D-6	Action	Develop an emerging transportation technology strategic plan.

GOAL 5 Promote Environmental Sustainability: In developing the transportation network, protect, preserve, and enhance the community's natural and built environment and quality of life, including the equity of all users and social justice, while considering our northern climate and supports planned land use patterns.

Item #	Policy/Action	Description
5-1	Policy	Encourage travel by means other than single-occupancy vehicle travel.
5-2	Policy	Encourage and promote projects and programs for active transportation to maintain the health and welfare of citizens.
Objective 5A - Promote transportation improvements that provide for the needs of traditionally underserved populations.		
5A-1	Action	Incorporate and use the non-motorized plan update's health and equity information data in future MTP/TIP project selection criteria.
5A-2	Action	Use the health and equity information from the non-motorized plan update as a way to continue to enhance AMATS' capability to address environmental justice and Title VI issues.
Objective 5B - Preserve and improve air quality to maintain the health and welfare of citizens.		
5B-1	Action	Develop incentives to increase TDM/TSM measures such as subsidized transit passes.
5B-2	Policy	Support infrastructure for electric vehicles.
5B-3	Action	Evaluate the impact of regionally significant roadways projects in the MTP on air quality, including carbon monoxide and particulate matter, as part of the planning and design process.

Objective 5C - Reduce or mitigate storm water impacts of surface transportation.		
5C-1	Policy	Transportation plans and future recommended projects should work in concert with the Alaska and National Pollution Discharge Elimination System Permits.
Objective 5D - Use coordinated transportation and land use planning techniques that support intermodal connections to reduce reliance on auto trips.		
5D-1	Action	Work on expanding the vanpool program.
5D-2	Action	Work to implement transportation recommendations from the Transit Supportive Development Corridor (TSDC) Strategic Implementation Plan.
Objective 5E - Coordinate transportation and land use decisions to support livable northern communities.		
5E-1	Action	Coordinate regarding snow plow priorities. Establish priorities based on transit routes, walkable land-use-designated areas, and equity considerations.
5E-2	Action	Identify ways to reduce snow accumulation on sidewalks and pedestrian walkways.
5E-3	Action	Identify and support development of locations where covered and connected walkways downtown are possible.
5F - Minimize adverse impacts on existing communities, such as neighborhood through-traffic movements, speeding, noise, and light pollution.		
5F-1	Action	Work with the MOA Traffic Department to implement identified traffic calming improvements.
5G - Minimize and mitigate impacts on the natural environment, such as water resources, fish and wildlife habitat, watersheds and wetlands, and parklands.		
5G-1	Policy	Comply with existing federal and state regulations regarding project development and permitting.
5G-2	Action	Work with environmental resource agencies to update environmental baseline information.

Objective 5H - Enhance aesthetics through transportation improvements consistent with community character.3E-		
5H-1	Action	Continue implementation of AMATS-funded projects using the context-sensitive solutions process.
Objective 5I - Match street design to the use and character of the community/neighborhood through Complete Streets, recognizing that characters may vary from primarily commercial to primarily residential and from primarily urban to primarily rural.		
5I-1	Action	Develop a Complete Streets checklist.
5I-2	Action	Develop an AMATS Street Typology based on the 2040 Land Use Plan that integrates Functional Classification.
5I-3	Policy	Update MTP/TIP criteria to integrate the AMATS Street Typology.
5I-4	Action	Develop a process to implement the AMATS Street Typology.

GOAL 6 Quality Decision-Making: Make sound public investments.

Item #	Policy/Action	Description
6-1	Policy	Identify how objective-driven and performance-based decision-making using performance measures can be better used to identify needed improvements in the next MTP.
6-2	Action	Review and update the AMATS specific performance measures.
6-3	Policy	Continue collaboration with regional planning partners such as the Mat-Su Borough, the Port of Alaska, TSAIA, Alaska Railroad Corporation, Joint-Base Elmendorf-Richardson, DOT&PF, MOA, and the Native Village of Eklutna.
6-4	Action	Investigate and adopt modifications related to multimodal performance measures within the AMATS area.
Objective 6A - Prioritize the projects within the MTP to optimize the benefit-cost ratio.		
6A-1	Action	Examine tools for estimating benefit-cost ratio for evaluating and prioritizing projects for all modes.
Objective 6B - Consider the life-cycle costs of projects when evaluating and selecting them within the MTP.		
6B-1	Action	Evaluate adding a new MTP or TIP screening criteria that considers life-cycle costs.
Objective 6C - Optimize benefits of capital expenditures.		
6C-1	Action	Develop a cost/benefit analysis tool for use with the MTP and TIP.

Objective 6D - Continue to improve regional cooperation and planning to address important transportation issues.		
6D-1	Action	Continue regional collaboration on projects, priorities, resources, and strategies mutually affecting the MOA and the Mat-Su Borough.
Objective 6E - Reduce unnecessary project delivery delays (which add to project costs) through efficient coordination.		
6E-1	Action	Review and integrate project development streamlining initiatives from FHWA (e.g., promote the use of planning environmental linkage studies).
6E-2	Action	Reconsider the AMATS operating procedures and MTP plan adoption procedures to streamline the processes.
Objective 6F - Coordinate planning efforts across disciplines (such as transportation, land use, economic development, emergency management, parking management, public health, and the military) and geographic areas.		
6F-1	Action	Work with MOA Planning and the private sector to install non-motorized friendly amenities.
6F-2	Action	Develop a framework for Transit-Supportive Development Corridor studies and associated strategic implementation plans.
6F-3	Action	Coordinate across disciplines on parking requirement changes including parking pricing, off-street parking mandates, and ways to reduce surface parking and identify opportunities for non-motorized improvements.
6F-4	Action	Explore new technologies for prepaid parking and discounts for seniors/low-income individuals.
6F-5	Policy	Continue to pursue close coordination of transportation and land use linkage goals of the Anchorage Bowl and Chugiak-Eagle River
6F-6	Action	Update the MTP evaluation criteria to include the Anchorage Bowl and the Chugiak-Eagle River land uses.
6F-7	Policy	Continue to follow a planning process based on comprehensive, cooperative, and continuing interaction with stakeholders.
6F-8	Policy	Promote the integration of appropriate non-motorized and public transportation facilities within new and major roadway reconstruction projects
6F-9	Action	Continue development review of site plans to promote system connectivity.
6F-10	Policy	Continue to support and consider MOA land-use codes, comprehensive plans, non-motorized plans, public transportation plans, freight plans, design standards, along with DOT&PF plans in project selection and development.
6F-11	Action	Review and update the evaluation criteria for the next MTP.

Process - From the MTP to Project Implementation

Consultation and Cooperation for Environmental Activities

Current federal requirements governing development of plans like the Anchorage MTP dictate that AMATS must consult, as appropriate, with state and local agencies responsible for land-use management, natural resources, environmental protection, conservation, and historic preservation. Among the consultation activities, the recommendations of the MTP must be compared with applicable state conservation plans or maps and available inventories of natural or historic resources to assess possible impacts of the plan.

In addition, the MTP must describe potential environmental mitigation activities. To prepare this section of the MTP, the team facilitated discussion with federal, state, and tribal entities responsible for land management and wildlife, as well as regulatory agencies, during plan development. Outreach efforts included inviting resource agency representatives to discuss major recommendations in the MTP. The locations of recommended road and public transportation improvements in the MTP were overlain on MOA Coastal Zone resource maps showing sensitive areas—consisting of wildlife habitat, wetlands, and other physical features. These maps were made available to the resource agencies for review.

The resource agencies were invited to provide input, suggestions, and guidance about projects or programs (for example, congestion management, TDM, and TSM) for the MTP projects.

The consultation from the resource agencies was considered to be guidance that complemented, not replaced, other formal guidance, such as the National Environmental Policy Act (NEPA) requirements. Several agencies responded with suggestions, and their recommendations are provided in the following section.

The State of Alaska is no longer participating in the Alaska Coastal Management Program as of July 2011. This program provided guidance and coordination for development permits at the state, federal and local level. Until the state elects to reinstate the program again in the near future, this coordination between various permitting agencies must be handled solely by the project applicant. Coordination is necessary

The following federal, state, tribal, and local resource agencies were contacted:

- ·Alaska Department of Environmental Conservation, Air Quality
- ·Alaska Department of Fish and Game, Wildlife Management
- Alaska Department of Natural Resources, Habitat Management
- Alaska Department of Natural Resources, Office of Project Management and Permitting
- Alaska Department of Natural Resources, State Parks
- Alaska Department of Transportation and Public Facilities Statewide Environmental Office
- Alaska Mental Health Trust Land Office
- Alaska State Historic Preservation Office (SHPO)
- Anchorage Historic Preservation Commission
- Chugiak-Eagle River Historical Society
- MOA Department of Health and Human Services (DHHS), Air Quality
- MOA Heritage Land Bank
- MOA Parks and Recreation
- MOA Planning Department, Coastal Zone Planning
- MOA Public Works Department, Project Management and Engineering (PME), Watershed Management Section
- Native Village of Eklutna, Land and Environment Department
- University of Alaska Anchorage Land Management
- U.S. Army Corps of Engineers (USACE)
- U.S. Bureau of Land Management, Lands/Realty Group
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS)
- U.S. Department of the Interior, U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency (EPA)

between permitting agencies to ensure compatible permit conditions and timelines that meet project deadlines.

The MOA Planning Department, EPA, and USACE recommended that the policies and maps of the Anchorage Wetlands Management Plan, new Coastal Resource Atlas maps, and Municipal Watershed Management Services Stream and Drainage Mapping Standards (a periodically updated database) should be consulted for potential project impacts.

They noted that projects should include early consultation with the MOA Watershed Management Section (in PME) and MOA Current Planning Section to obtain the most up-to-date information about these resources.

Proposed road improvements and trails have the potential to affect wetlands, streams, or intertidal areas, either directly or

indirectly. The EPA recommends the following:

- Promote project planning and design that maximizes avoidance of aquatic areas, valuable wetlands and other environmentally sensitive areas. Where these areas cannot be avoided, negative impacts should be minimized and/or mitigated.
- Minimize direct, indirect, and cumulative impacts through planning and design, where avoidance is impracticable.
- Implement measures to offset unavoidable adverse impact.
- To avoid adverse impacts to aquatic resources, the mitigation sequence must be followed to determine the type and level of mitigation required under Section 404 of the Clean Water Act.

The EPA-recommended actions are required by Part 230.10(a), Section 404(b)

(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, of the Clean Water Act. Compliance with this regulation is necessary to obtain USACE authorization for aquatic fill.

Permit applicants seeking authorization must include an 'alternatives analysis', which describes alternative road routes that were considered, with background data and rationale supporting the project's preferred alternative. USACE must concur with the project's alternative analysis before the applicant proposes compensatory mitigation. From information presented in the alternatives analysis, USACE can determine the Least Environmentally Damaging Practicable Alternative (LEDPA) that meets the overall purpose and need of the project. USACE will not issue a permit for actions with greater environmental damages when other alternatives are practicable.

Projects affecting wetlands identified in the Anchorage Wetlands Management Plan should comply with the enforceable policies and management strategies of the wetlands plan, and the design and construction budgets for all projects that would involve adverse impacts to aquatic areas should include funding to provide for avoidance, minimization, and compensatory mitigation measures.

Avoidance measures include the following, where practicable:

- Maximizing opportunities for forms of transportation other than automobiles
- Alignment of routes through uplands or the edges or lower value portions of wetlands
- Use of retaining walls and other features to minimize fill footprints
- Incorporation of onsite storm water

treatment measures

For unavoidable impacts, compensatory mitigation measures include the following:

- Replacing or upgrading existing culverts or other structures that block or impede fish passage
- Increasing the length of existing bridges
- Restoring previously damaged reaches of streams or areas of wetlands
- Providing for permanent protection of valuable aquatic areas
- Using Wetland Mitigation Banks when appropriate and as outlined by EPA, 40 CFR Part 230, Compensatory Mitigation for Losses of Aquatic Resources; Final Rule. A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or preserved in order to provide compensation for unavoidable impacts to aquatic resources permitted under Section 404. The value of a bank is defined in terms of "credits." USACE, EPA and MOA developed the Anchorage Debit-Credit Methodology (ADCM, updated 2011) to calculate debits, placing a value on impacts incurred with a project, and credits, the value of appropriate compensation to offset impacts, such as wetland preservation. Mitigation banks are a form of "third-party" compensatory mitigation, in which the responsibility for compensatory mitigation implementation and success is assumed by a party other than the permittee. This transfer of liability has been a very attractive feature for Section 404 permit-holders, who would otherwise be responsible for the design, construction, monitoring, ecological success, and long-term protection of the site. Within the Municipality, a private mitigation bank is operating now and the MOA, Heritage Land Bank is in the process of creating a mitigation bank to service the Municipality.
- The USACE may also direct an applicant to pay Fee-in-Lieu of Mitigation to offset a project's impacts. After calculating the project's debits with the ADCM, an overall monetary value is correlated based on the Relative Ecological Value of the aquatic resource area affected. Hence, higher value sites, such as "A" wetlands, are more costly to compensate for in this manner. The fee is paid to a local non-profit entity who is accredited to provide stewardship and protection of comparable wetlands in perpetuity.

Specific responsibilities also are required for project management in areas with Essential Fish Habitat (EFH). The legislation, process,

and recommendations of NMFS for work in EFH are described below:

The Magnuson-Stevens Fishery Conservation and Management Act (http://www.nmfs.noaa.gov/sfa/magact) as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established a new requirement to describe and identify EFH in each fishery management plan.

- An EFH consultation is triggered when a federal agency, or its designee, determines that an action to be authorized, funded, or undertaken by the agency may adversely affect EFH. For example, if the Federal Highway Administration (FHWA) is funding a road in the MOA, FHWA or the designee (consultant) would need to consult NMFS to determine whether the project would adversely affect EFH.
- An "adverse effect" is any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH.
  Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.
- ·Early consultation (project pre-scoping or scoping phase) with NMFS personnel about EFH is highly encouraged. Early consultation can help avoid potential conflicts during the permitting process.

For more information about EFH, conttact the Habitat Conservation Division at (907) 271-5006, email HCD_Alaska@ noaa.gov, or refer to the list of Habitat Conservation Division contact information for support staff and fisheries biologists at http://www.fakr.noaa.gov/ habitat/. For frequently asked questions about EFH, go to http://www.fakr.noaa.gov/habitat/efh/faq.htm.

To determine whether projects may affect culturally sensitive sites, project managers should consult the SHPO inventory of reported sites and consult with the Native Village of Eklutna, Land and Environment Department. All potential impacts to cultural resources in a project area should be determined and should be addressed through potential mitigation measures in project documentation.

The DOT&PF has signed a Programmatic Agreement (PA) with FHWA, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer to

help streamline Section 106 of the National Historic Preservation Act (36 CFR 800) processing for Federal-Aid Highway Program (Program) projects that may affect roads eligible for the National Register of Historic Places (NRHP). The agreement provides an alternative process and establishes thresholds for Program projects with low potential to affect features that may make a road eligible for NRHP listing. Interim Guidance is being established for project implementers, anticipated to be approved by first quarter 2012, and is expected to be in effect until an Alaska Historic Roads Context and Final Guidance to evaluate Alaska roads is established. The Interim Guidance will include an agreed upon list of Alaska roads to be treated as NRHP eligible during the interim period and activity lists to define projects that have no potential to cause effects to these roads and projects that have no adverse effect. Provisions for developing an Alaska Historic Transportation Routes Booklet are included for distribution to the general public. Currently roads within the AMATS planning area are not included on the proposed list of roads to be treated as NRHP eligible but could be added in the future.

The agreement only pertains to effects on roads. It does not apply to road related features (bridges, tunnels, etc); non-road historic properties (archaeological sites, buildings, structures, districts); portions of roads in historic districts or National Historic Landmarks. For more information about the PA, contact the DOT&PF Cultural Resources Manager, Statewide Environmental Office in Anchorage at (907) 269-6229 or the DOT&PF Environmental webpage http://dot.state.ak.us/stwddes/desenviron/resources/historicproperties.shtml

Project Implementation

Before it is implemented, a project or program must first be included in one of the following funding documents: the MOA Capital Improvement Program (CIP) or the AMATS Transportation Improvement Program (TIP). The AMATS TIP is subsequently included without change in the DOT&PF Statewide Transportation Improvement Program (STIP), directly or by reference, after approval of the TIP by the MPO and the Governor.

Each funding document identifies the most likely funding source and ranks the projects and programs by priority. The CIP is funded locally with general obligation bonds or state grants. The AMATS TIP and the DOT&PF STIP are funded primarily with federal transportation dollars originating from the gasoline tax paid into the Highway Trust Fund and complemented by state or local matching funds.

The funding source is important because each source requires specific project development processes. It determines whether NEPA documentation or state or local permitting processes apply to a project.

Regardless of the process, a very important component of project implementation is conformance with local plans, laws, and policies. For the Anchorage metropolitan area, applicable plans are the MTP, Anchorage Bowl and Chugiak-Eagle River comprehensive plans, the OS&HP, and the Anchorage Non-Motorized Transportation Plan.

Projects must conform to Anchorage land-use regulations (Title 21), as well as local guidance such as the Design Criteria Manual, A Strategy for Developing Context Sensitive Transportation Projects (municipal projects), Alaska Highway Preconstruction Manual, and local plans. Two important local bodies that provide review are the Planning and Zoning Commission and the Urban Design Commission. MTP projects are forwarded to these bodies for review and approval during project development, as appropriate.

Federal Funding of Project Development

Federal funding requires that a project be completed in accordance with a process defined by the FHWA and in accordance with the NEPA. The end result of the NEPA process is a decision document granting environmental clearance for the project to proceed to detailed design of the preferred alternative. The decision document can vary depending on the level of environmental analysis.

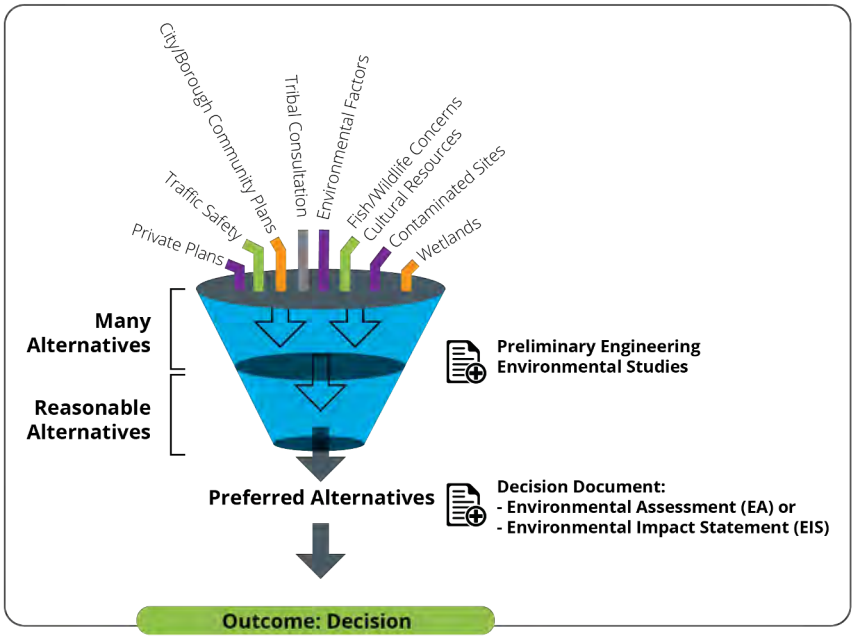
The decision document for an Environmental Impact Statement (EIS) or Environmental Assessment (EA) is a Record of Decision (ROD) or Finding of No Significant Impact (FONSI), respectively.

Environmental clearance can also be granted for smaller projects with smaller impacts. These projects receive a Categorical Exclusion upon completion of a Categorical Exclusion checklist and provision of supporting documentation.

For processes requiring an EIS, the decision-making follows the process shown in Figure 8-1; studies, planning documents, and site-specific information help form many alternatives. These alternatives are screened through environmental studies and preliminary engineering to identify reasonable alternatives that are further evaluated in the EIS or EA, resulting in selection of a preferred alternative.

Public input is sought in completing the document early in the scoping phase and after the draft and final documents are prepared. The ROD or FONSI documents the decision, allowing the next step in project development to begin.

Figure 8-1 Project Decision-Making Process



The decision document for an EA is Finding of No Significant Impact (FONSI); the decision document for an EIS is a Record of Decision (ROD).

The typical schedule for a federal-aid highway project requiring an EIS is shown in Figure 8-2. Some steps can be accomplished simultaneously. After ensuring all federal, state, and local requirements are met, FHWA approval is required to move the project to the next step.

Figure 8-2 Typical Schedule for a Federal-Aid Highway Requiring an Environmental Impact Statement

Chapter

9

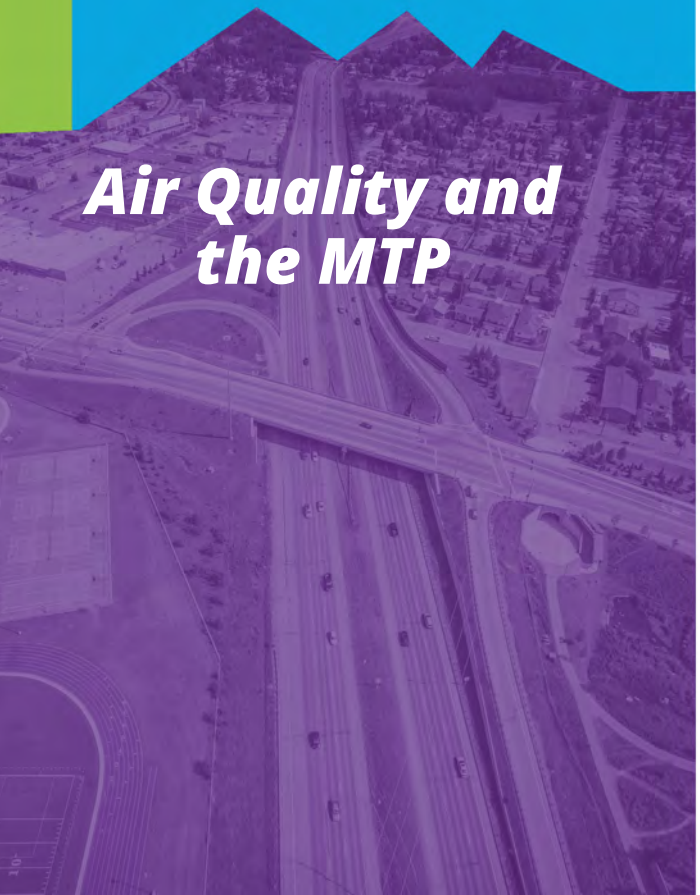
Air Quality and the MTP

MTP2040

LINK - CONNECT - MOVE

Chapter

9



Air Quality and the MTP

Introduction

In accordance with the 1970 Clean Air Act, the U.S. Environmental Protection Agency (EPA) established national ambient air quality standards (NAAQS) for six common air pollutants, including ground level ozone, sulfur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), airborne lead, and particulate matter. Particulate matter is regulated as particles less than 10 microns (PM_{10}) and as particles less than 2.5 microns ($PM_{2.5}$). The Municipality of Anchorage is compliant with the NAAQS for ground level ozone, sulfur dioxide, nitrogen dioxide, airborne lead and $PM_{2.5}$. Due to historical exceedances of the CO NAAQS in Anchorage and exceedances of the PM_{10} NAAQS in Eagle River, Anchorage and the State of Alaska are committed to CO and PM_{10} maintenance plans which have been incorporated into the Alaska State Implementation Plan (SIP). The plans utilize transportation system control measures to reduce CO and PM_{10} from automotive and roadway sources in the Anchorage and Eagle River maintenance areas. The Anchorage CO and Eagle River PM_{10} maintenance plans are effective for 10-years from their approval by EPA on May 2, 2014 and on March 3, 2013 respectively. The Alaska Department of Environmental Conservation is in the final review process of a second ten-year update of the Eagle River PM_{10} Limited Maintenance Plan for submission to EPA for approval. Anchorage and State of Alaska air quality planners expect the Municipality of Anchorage to remain compliant with national air quality standards through 2040 even with projected growth in travel on the transportation system.

Background

Anchorage enjoys low levels of most types of air pollution. Sulfur dioxide, nitrogen dioxide, lead and ozone have been monitored and are not a significant concern. Air pollutants of concern include carbon monoxide, particulate matter, including PM_{10} and $PM_{2.5}$, and air toxics. The American Lung Association issued Anchorage a grade of "B" in their 2019 State of the Air Report due to a few episodes per year of high 24-hour average concentrations of particle pollution. Although Anchorage presently maintains air quality standards for all criteria pollutants, it does incur elevated levels of PM_{10} during the early spring melt season (typically mid-March through April) and may also experience episodes of high daily concentrations of $PM_{2.5}$ during spring or summer whenever smoke from large-scale wildfires is present in southcentral Alaska.

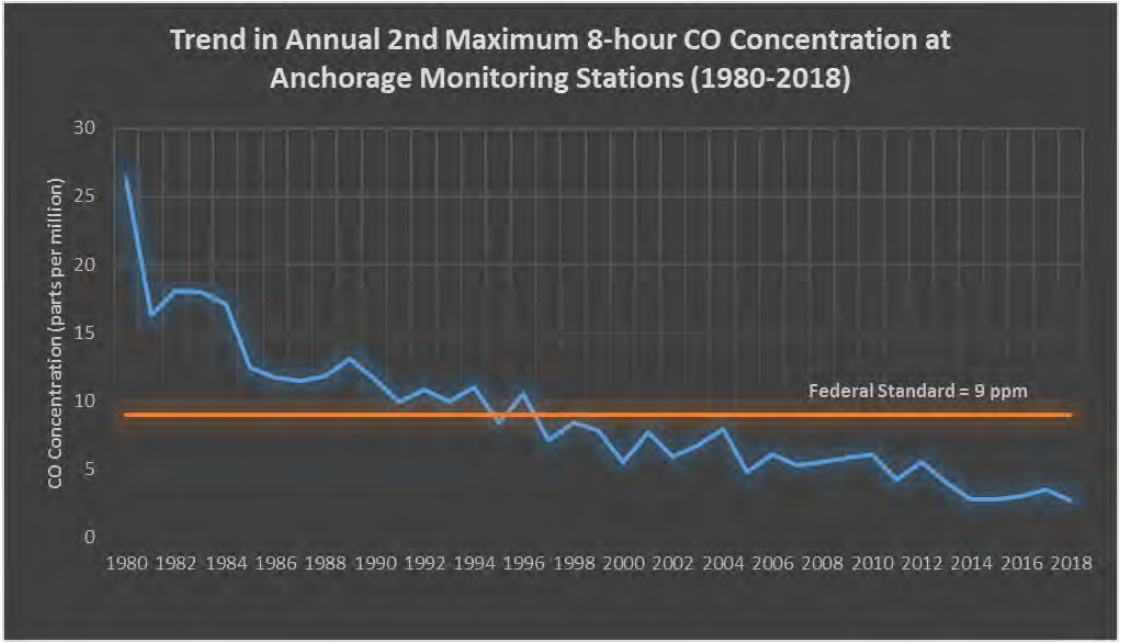
Figure 9-1 Use of Non-Motorized and Public Transportation Helps Decrease Emissions

Carbon Monoxide

During the past two decades, Anchorage has experienced dramatic reductions in ambient concentrations of CO. In the early 1980s, Anchorage violated the 8-hour CO standard as many as 50 times per year. Since then, concentrations have dropped more than 70 percent. Anchorage has had no violations of the CO NAAQS since 1996. Motor vehicles are the main source of CO pollution in Anchorage. Cars and trucks account for almost 80 percent of the CO emitted in the Anchorage Bowl. Continual advancements in technology to control air pollution on newer vehicles are largely responsible for this improvement. In January 2012, the EPA approved a revised CO control plan for Anchorage that showed the vehicle inspection and maintenance program was no longer necessary to meet the federal CO standard. Effective on May 2, 2014, Anchorage was reclassified as a Limited Maintenance Plan (LMP) area for CO. Anchorage continues to implement CO reduction measures such as continued investment in and optimization of transit bus and vanpool programs.

to decrease the use of single occupancy vehicles and reduce motor vehicle emissions. The trend in CO concentrations is shown in Figure 9-2. The highest CO concentrations in Anchorage occur in mid to late winter when strong temperature inversions trap air pollutants in a stagnant layer of cold dense air close to ground level. Vehicle CO emissions are greatest shortly after a cold start when catalytic control systems operate inefficiently. Peak CO concentrations in Anchorage occur in

Figure 9-2 Trend in 2nd Maximum CO Concentrations at Anchorage Monitoring Stations (1980-2016)



residential areas where vehicles are commonly parked outside, started cold and allowed to warm up by idling before the morning commute.

The MOA promotes the use of engine block heaters when temperatures fall below 20°F to reduce cold-start emissions. Congestion Mitigation Air Quality (CMAQ) Public Awareness programs include the Plug@20 Advertising Campaign, promoting the use of engine block heaters to reduce cold-start vehicle emissions, and the annual spring Bike to Work Campaign to promote bicycle commuting (see Fig. 9-3).

Figure 9-3 Plug@20 Campaign and 2017 Bike to Work Poster

Particulate Matter (PM_{10})

The federal air quality standard for PM_{10} is set at 150 micrograms per cubic meter (µg/m3) averaged over a 24-hour period, not to be exceeded more than three times in any three-year period. Although PM_{10} levels in Anchorage and Eagle River sometimes exceed 150 µg/m3, no more than three exceedances have occurred in a three-year period and the MOA is compliant with the standard.

High PM_{10} concentrations typically occur during spring break-up when melting snow and ice expose a winter's worth of accumulated traction material on roadways. This sediment is stirred up by traffic, especially on high-speed, high-volume streets, potentially creating extremely dusty conditions. To control road dust emissions, the Anchorage Air Quality Program (AAQP) continually monitors dust levels. If air quality deteriorates, AAQP communicates with municipal and state street maintenance crews, and recommends applications of magnesium chloride brine to stabilize road sediment until it can be effectively removed by road sweepers followed by a post-sweep flush to remove residual silt. The magnesium chloride brine keeps sediments in place until daily low temperatures are safely above freezing to allow application of water to road surfaces.

In the late 1980's, dust from unpaved roads in the Eagle River area led to frequent violations of the standard. By 1991, most of these roads had been paved or surfaced with recycled asphalt and violations ceased. In March 2013, Eagle River's PM_{10} Limited Maintenance Plan (LMP) was officially approved by the EPA. Eagle River is now considered a maintenance area for PM_{10}.

Figure 9-4 Percent of Good AQI PM_{10} Values 2000-2018

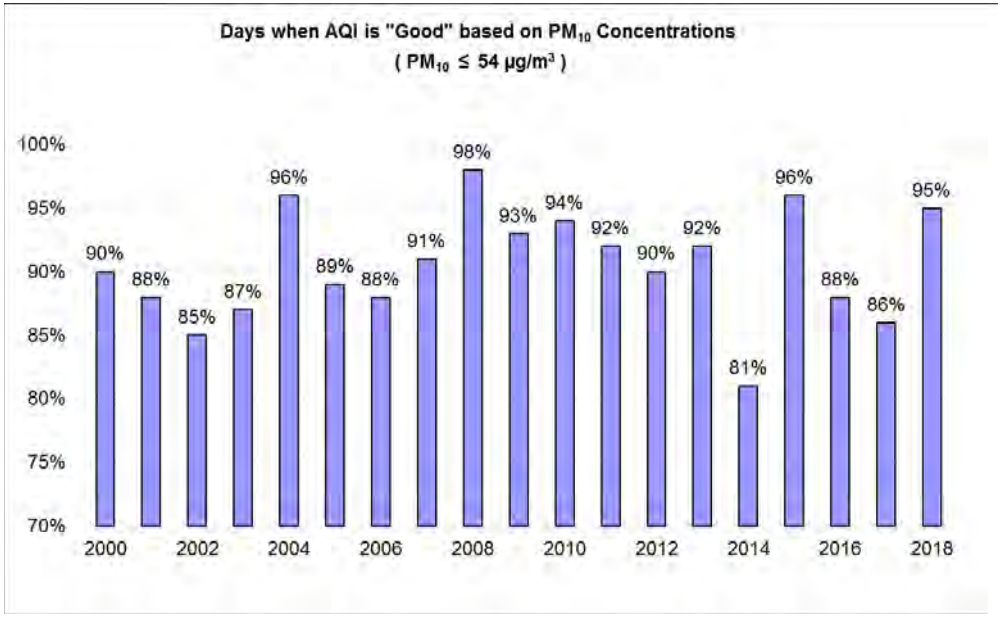
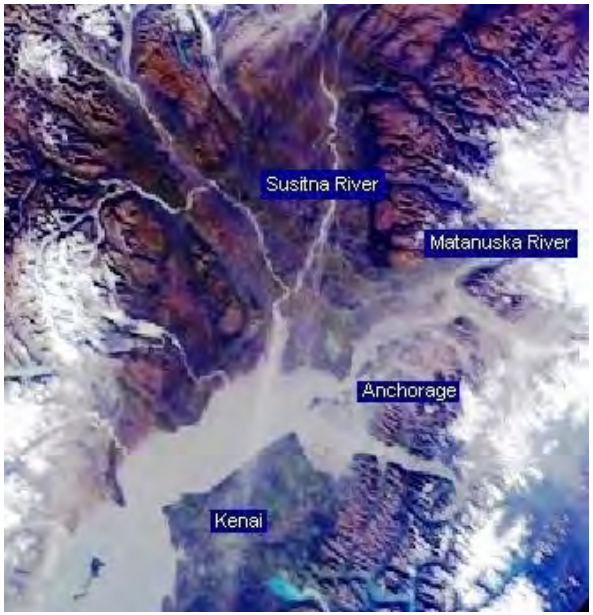


Figure 9-5 Street Sweeping Operations on "I" Street, April 2015

Natural events like volcanic eruptions and windstorms can have a significant impact on PM_{10} concentrations. Anchorage is surrounded by volcanoes to the south and west. The eruptions of Mt. Redoubt in 1990 and Mt. Spurr in 1992 were responsible for numerous exceedances of the PM_{10} standard both during the initial ash fall and in the months following when lingering ash was stirred up by wind and traffic.

Wind-blown glacial dust from the Matanuska-Susitna Valley can periodically impact Anchorage PM_{10} levels. Under specific meteorological conditions, large amounts of dust from the Matanuska, Knik, and Susitna River valleys north of the MOA can be transported to Anchorage and Eagle River by wind. This phenomenon has been responsible for many of the PM_{10} exceedances that have occurred in Anchorage over the years. The EPA excludes violations resulting from volcanic eruptions or transport of glacial river dust if the exceedances can be classified as an Exceptional Event (not caused by human actions).

Figure 9-6 Glacial Dust Transported to Anchorage by High Winds, September 24, 2010

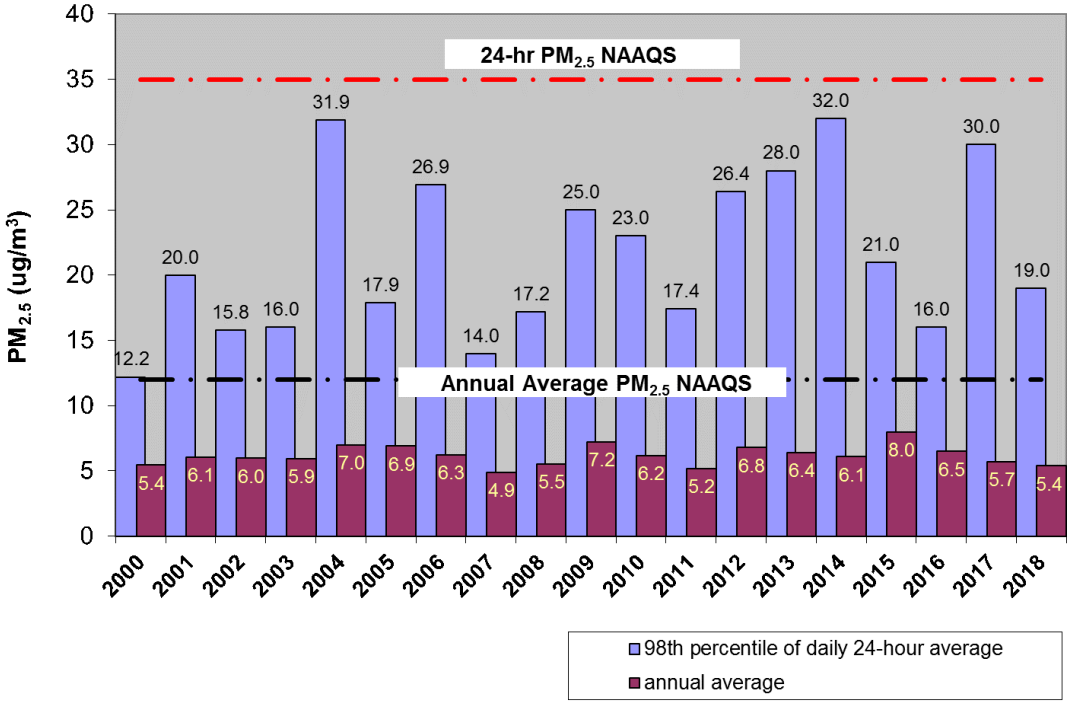


Particulate Matter ($PM_{2.5}$)

$PM_{2.5}$, also called fine particle pollution, has become a more prominent air quality issue for Alaska. Wood smoke from outdoor wood boilers, fireplaces and wood stoves can cause significant neighborhood impacts. Fine particle pollution has significant health ramifications, harming lungs, blood vessels and the heart. In 2006, the EPA instituted a more stringent 24-hour average $PM_{2.5}$ standard reducing the level from 60 to 35 µg/m3. Anchorage remains in compliance with the revised 24-hour $PM_{2.5}$ standard.

Figure 9-7 Wood Fired Boiler Smoking in Neighborhood

Figure 9-8 Variability of PM2.5, Annual Average and Yearly Maximum 24-Hr Average



Lead and Ozone

In 2008, EPA established a more stringent air quality standard for airborne lead based on current scientific evidence of health impacts. The new standard lowered airborne lead from 1.5 to 0.15 micrograms per cubic meter or one-tenth its former level. Merrill Field was selected by EPA as one of 15 airports nationwide for inclusion in a one year study to determine whether airports serving large numbers of piston powered aircraft are in compliance with the NAAQS for lead. Sampling completed by AAQP in October 2012 showed levels were 0.07 µg/m3 or less than half the new federal standard.

Ozone was monitored in Anchorage and in Eagle River in 2010-2012. During the April through October monitoring periods, the highest 8-hr maximums were 50 parts per billion (ppb) at the Parkgate site in Eagle River and 47 ppb at the Garden site in Anchorage. Both were well below the current NAAQS of 70 ppb.

Benzene and Other Toxic Air Pollutants

Motor vehicle emissions are the major source of benzene and other toxic air pollutants including Volatile Organic Compounds (VOCs) and Poly Aromatic Hydrocarbons (PAHs). Although EPA has not established an ambient air quality standard for pollutants like benzene (a known carcinogen), they are associated with increased cancer and other health risks. A 2008-09 municipal study indicated that ambient benzene concentrations in Anchorage were among the highest in the United States. The benzene content of Anchorage gasoline - nearly 4 percent by volume at that time - was 3 to 10 times higher than the benzene content of gasoline sold in most other U.S. cities.In 2012, EPA promulgated rules limiting refineries to maximum average benzene content and establishing cold temperature motor vehicle emissions standards for new vehicles. The AAQP conducted a follow-up study in 2013. Results indicated that gasoline sold locally was meeting the reduced benzene standard, and ambient benzene levels had declined substantially. Data showed that the amount of benzene in fuel was reduced by about 70 percent and that ambient benzene concentrations had dropped from an average of 5.05 to 1.53 ppb.

Air Quality Conformity for the 2040 MTP

An Air Quality Conformity analysis was performed by Anchorage Air Quality Program staff to assure that the 2040 MTP is consistent with the Alaska State Implementation Plan (SIP) for air quality and with federal rules governing regional air quality conformity. Analysis for consistency with the Alaska SIP included a review of Anchorage CO and Eagle River PM_{10} air monitor data through calendar-year 2018 (the most recent EPA-certified data) to assure that the Anchorage CO and the Eagle River PM_{10} maintenance areas continue to uphold the qualification criteria established by EPA for use of the limited maintenance plan (LMP) option employed for each area.

The EPA provides the limited maintenance plan (LMP) option for CO maintenance areas that have a design value not exceeding 7.65 ppm. Using data through December 31, 2018, the Anchorage CO maintenance area was found to have a CO design value of 3.5 ppm.

Table 9-1 Anchorage CO Annual Monitor Value Statistics

	2nd maximum, 8-hr CO Concentration		
	Garden Site	**Turnagain Site**	**CO Design Value**
2014	2.5	2.8	3.1
2015	2.8		2.8
2016	3		3
2017	3.5		3.5
2018	2.7		3.5

The primary CO control measures for Anchorage, as committed to in the Alaska SIP, include: (1) an air quality

public awareness program aimed at promoting use of engine block heaters to reduce CO cold start emissions, and the promotion of bicycling, walking, transit and other alternatives to use of a single occupancy vehicle; (2) a transit marketing program; and (3) promotion of carpooling and vanpooling.The Anchorage Transportation Planning program continues to apply these control measures and has funded them in the current Transportation Improvement Program (TIP).

The EPA allows use of the LMP option to prepare PM_{10} limited maintenance plans for areas that have a 5-year average PM_{10} design value not exceeding 98 ug/m3.By the empirical frequency distribution method as outlined in outlined in section 6.3.3 of PM_{10} SIP Development Guideline (EPA-450/2-86-001, June 1987) Eagle River PM10 monitor data collected through December 31, 2018 was found to have a 5-year average PM_{10} design value of 96 µg/m3.

Table 9-12 5-Year Average Eagle River PM_{10} Design Values

5-Year Period	Average DV (µg/m3)
2004-2008	85
2009-2013	87
2014-2018	96
LMP Qualification Criteria	≤ 98 µg/m3

The primary measures for control of PM_{10} in the Eagle River maintenance area are: (1) the upkeep of pavement chip-seal on previously unpaved residential and collector streets (2) and use of winter traction sand containing less than 2% of fines within the Eagle River PM_{10} maintenance area. These PM_{10} primary control measures are assured by MOA land use regulation and by a cooperative agreement between State of Alaska and Anchorage road maintenance programs respectively.The Anchorage CO and Eagle River PM_{10} LMP elements of the Alaska air quality control plan (SIP) remain compliant with EPA's LMP-option eligibility criteria for each pollutant. The Municipality of Anchorage continues to uphold its CO and PM_{10} maintenance plans consistent with the Alaska SIP. On August 14, 2019 Anchorage Air Quality Program staff presented these analyses to the Transportation Conformity Interagency Consultation Team in a draft conformity determination report, consistent with the transportation plan conformity rules mandated in 40 CFR § 93.112. Comments and recommendations receive from the consultation team have been incorporated into a public review draft titled Air Quality Conformity Determination for the Anchorage 2040 MTP, which will be provided by AMATS for 30-day public review in conjunction with the public review of the Anchorage 2040 MTP.

Appendix

A

MTP2040

LINK - CONNECT - MOVE

Abbreviations & Glossary

Appendix

A

Abbreviations

ADA	Americans with Disabilities Act
AMATS	Anchorage Metropolitan Area Transportation Solutions
ADN	Anchorage Daily News
APD	Anchorage Police Department
ARDSA	Anchorage Roads and Drainage Service Area
ARRC	Alaska Railroad Corporation
ASD	Anchorage School District
BRT	bus rapid transit
CBD	Central Business District
CBERRRSA	Chugiak/Birchwood/Eagle River Rural Roads Service Area
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CMAQ	congestion mitigation and air quality
CO	carbon monoxide
CPI	consumer price index
CSS	context-sensitive solution
CVISN	Commercial Vehicle Intelligent System Network
DHHS	Department of Health and Human Services
DOLWD	Alaska Department of Labor and Workforce Development
DOT&PF	Alaska Department of Transportation and Public Facilities
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration

GIS	geographic information system
GO	general obligation
HB	House Bill
HOV	high-occupancy vehicle
HSIP	Highway Safety Improvement Program
ISER	Institute of Social and Economic Research
ITS	Intelligent Transportation System
JBER	Joint Base Elmendorf-Richardson
KABATA	Knik Arm Bridge and Toll Authority
KAC	Knik Arm Crossing
LMP	Limited Maintenance Plan
LOS	level of service
LRSA	limited road service area
LRTP	long-range transportation plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
Mat-Su	Matanuska-Susitna
MOA	Municipality of Anchorage
mph	miles per hour
MPO	Metropolitan Planning Organization
MTP	metropolitan transportation plan
NEPA	National Environmental Policy Act
NGO	non-governmental organization
NHS	National Highway System
NMFS	National Marine Fisheries Service
O&M	Operations and Maintenance
OS&HP	Official Streets and Highways Plan
P3	public-private partnership
PC	Policy Committee
PIP	Public Involvement Plan
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PME	Project Management and Engineering
POA	Port of Alaska
PPP	AMATS Public Participation Plan
PTD	Public Transportation Department
ROD	Record of Decision
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
SB	Senate Bill
SHPO	State Historic Preservation Office
SOV	single-occupancy vehicle

STIP	Statewide Transportation Improvement Program
TAC	Technical Advisory Committee
TAZ	traffic analysis zone
TDM	transportation demand management
TE	transportation enhancement
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TRAAK	Trails and Recreation Access for Alaska
TSAIA	Ted Stevens Anchorage International Airport
TSM	transportation system management
UAA	University of Alaska Anchorage
ULB	Useful Life Benchmark
U-Med	University-Medical
UPWP	Uniform Planning Work Program
USACE	U.S. Army Corps of Engineers
VHT	vehicle hours traveled
VMT	vehicle miles traveled

Glossary

Americans with Disabilities Act (ADA): Federal civil rights legislation for disabled persons passed in 1990; calls on public transit systems to make their services more fully accessible, as well as to underwrite a parallel network of paratransit service.

Anchorage Metropolitan Area Transportation Solutions (AMATS): A federally mandated, joint state-local process for planning and programming surface transportation improvements in the Anchorage Bowl and Chugiak-Eagle River areas when federal funds are being used. AMATS committees are comprised of representatives from a variety of agencies and organizations.

Anchorage Municipal Code (AMC): The legislative tool to enforce municipal policies. It is divided into 24 chapters, generally referred to as "Titles." The key transportation-related titles are:

- AMC Title 9, "Traffic Code," covers what is considered the "traffic" aspects of transportation. It addresses items such as traffic signs and markings, general driving regulations, and parking regulations.
- AMC Title 21, "Land Use Regulation," contains transportation requirements pertaining to various land use development issues. It covers requirements and standards for subdivision streets, zoning classifications, and changes.
- AMC Title 24, "Streets and Rights-of-Way," addresses issues such as construction, snow removal, and landscaping.

Anchorage Non-motorized Transportation Plan: A collection of plans prepared by the Municipality of Anchorage that address planning issues for non-motorized transportation: Areawide Trails Plan, 1997; Anchorage Pedestrian Plan, 2007; and Anchorage Bicycle Plan, 2010.

Anchorage Roads and Drainage Service Area (ARDSA): The largest Road Service Area in Anchorage. ARDSA has full maintenance and construction authority for drainage and road facilities in the Anchorage Bowl.

Annual Average Daily Traffic (AADT): Daily traffic volumes seasonally adjusted to compensate for different amount of traffic during different times of the year.

Arterial: A functional classification of a type of roadway that provides for trips of medium to moderate length. Intersections are at-grade, and access from adjacent lots is partially controlled. Some access to adjacent major land uses may be permitted. Arterials may be divided two- directional facilities, couplets of undivided one-way roadways or, in some situations, undivided

two-way roads. These facilities are often subclassified as "major arterial" and "minor arterial". (See Major Arterial, Minor Arterial, and Official Streets and Highways Plan.)

Average Daily Traffic: The average number of vehicles passing a certain point in a 24-hour period.

Bus Rapid Transit: Bus service that operates vehicles with traffic signal preemption transmitters, electronic fare collection, low floors for quick passenger entry and exit, and other amenities.

Bypass: A road designed to go around existing development. It could be classified as a freeway or expressway.

Capacity: The maximum number of vehicles a lane or road can accommodate during a given time period.

Capital Improvement Program (CIP): A municipal document that addresses funding for transportation and public facilities in the Municipality of Anchorage. Most projects funded in the CIP come from local taxes.

Categorical Exclusion: A category of actions that do not individually or cumulatively have a significant effect on the human environment. When ability to demonstrate this status is documented, a project requires neither an Environmental Assessment (EA) nor an Environmental Impact Statement (EIS).

Clean Air Act (CAA): Federal legislation that requires each state with areas that have not met federal air quality standards to prepare a State Implementation Plan (SIP). The sweeping 1990 amendments to the CAA established new air quality requirements for the development of metropolitan transportation plans and programs.

Collector: A functional classification of a type of roadway that offers a balanced service for both moving traffic and providing access relatively low-speed, short trips are accommodated. A collector collects traffic for local streets and larger properties (and in limited situations, single lots), and channels it to the arterial system. These facilities are further subclassified as "Residential," "Industrial/ Commercial," and "Neighborhood."

Commute: A repetitive home-to-work or work-to-home trip.

Commute alternative: Includes carpooling, vanpooling, transit, bicycling, walking, and telecommuting, as well as any alternative work-hours program.

Commuter Rail: A passenger rail service that primarily operates between a city center and middle to outer suburbs.

Complete Streets: Streets that are designed and operated to enable use and mobility for all users.

Comprehensive Plan: A document that serves as a guideline for community development. It is a policy document that

integrates social, economic, and cultural; land use, environmental, transportation, and energy concerns. The comprehensive plan identifies the issues, goals, and objectives that provide a framework for community decision-making.

Congestion Management Program: A set of potential actions that, if taken, would reduce congestion levels on the overall transportation network within the Municipality. The results of the recommended actions would have the effect of improving traffic circulation, reducing the number and cost of physical improvements to the road- way, and improving air quality.

Congestion Mitigation and Air Quality (CMAQ): A federal program that emphasizes the importance of the link between transportation and air quality. To that end, CMAQ program funding is applied to transportation projects that reduce vehicle emissions and improve air quality. Transit and traffic flow improvement projects are included, as are projects such as ride sharing, vehicle emissions inspection and maintenance programs, bicycle and pedestrian improvements, and alternative fuels.

Daily Vehicle Miles Traveled (VMT): The total number of miles traveled in a 24-hour day in a specified area by all vehicle types.

Delay: The additional travel time experienced by a driver, passenger, or pedestrian due to circumstances that impede traffic movement.

Design Criteria Manual (DCM): A municipal document that provides the engineering parameters for drainage, illumination, slope, grade, elevation, and so forth for all municipal and private development projects. A companion document is the Project Management Manual (PMM). The DCM/PMM is the Municipality of Anchorage's equivalent to the State of Alaska's Highway Preconstruction Manual.

Dwelling Unit: A building or portion of a building that contains separate living facilities.

Environmental Assessment (EA): An environmental impact document prepared in compliance with the National Environmental Policy Act. When the significance of impacts of a transportation project proposal is uncertain, an EA is prepared to assist in making this determination. If it is found that significant impacts will result, the preparation of an Environmental Impact Statement is required.

Environmental Impact Statement (EIS): An environmental impact document prepared in compliance with the National Environmental Policy Act. An EIS must be prepared if it is determined that a federally sponsored project with federal involvement may have a significant impact.

Environmental Justice: Environmental Justice (EJ) comes from Title VI of the Civil Rights Act (1964). Section 601 states "No persons in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal assistance."

Express Bus: Bus transit service with a limited number of stops, either from a collector area directly to a specific destination or in a particular corridor with stops en route to major transfer points or activity centers.

Expressway: The functional classification of a divided highway that is 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, because of at-grade intersections. Expressways do not provide access to adjacent land uses. Expressways are commonly owned and maintained by the State of Alaska, and their construction is funded with federal assistance. The Highway Preconstruction Manual of the Alaska Department of Transportation and Public Facilities sets specific guidelines for acceptable design and construction of expressway facilities. International Airport Road, between the international airport and Minnesota Drive is designated as a Class IV Expressway on the Official Streets and Highways Plan.

Fatality Rate: The number of fatalities per 100 million vehicle miles traveled.

Federal Highway Administration (FHWA): An agency of the U.S. Department of Transportation responsible for funding highways, trails, and ferries. FHWA authorizes expenditures from the Highway Trust Fund and sets deadlines for planning documents that AMATS is responsible for meeting.

Federal Transit Administration (FTA): An agency of the U.S. Department of Transportation that develops federal policy on public transit issues and allocates capital and operating funds for public transit projects (formerly the Urban Mass Transit Administration).

Feeder Bus: Local bus transit service that provides passengers with connections to mainline arterial service, an express bus service station, or an express bus stop or terminal.

Finding of No Significant Impact (FONSI): The decision document for an Environmental Assessment. A FONSI is prepared to conclude the process and document the decision when environmental analysis and interagency review during the Environmental Assessment process finds a project to have no significant impact on the quality of the environment.

Freeway: The functional classification of a limited access type of roadway that is

intended to provide safe and efficient movement of substantial volumes of traffic at high speeds. Access is rigidly controlled

Geographic information system (GIS): GIS is an information system that is designed to work with data referenced by spatial or geographic coordinates. It may be considered a "tool" for analysis and decision making. It may be composed of maps, databases and point information.

Headway: The time between departures of transit vehicles moving along the same route in the same direction.

High-Occupancy Vehicle: A vehicle carrying two or more people.

High-Occupancy Vehicle (HOV) lane: The technical term for a carpool or commuter lane.

Highway Preconstruction Manual (HPM): The state manual for design guidance. High- way projects that use federal funding assistance are subject to the development process and design standards contained in the latest version of the DOT&PF Highway Preconstruction Manual. The HPM is the state's equivalent to the municipal Design Criteria Manual. It affects all roadways under DOT&PF's jurisdiction.

Household: All persons who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters.

Inspection and Maintenance Program (I/M Program): An element of Anchorage's Air Quality Plan.

Intelligent Transportation System (ITS): A system that uses modern electronic communications and control technologies to provide travelers with better information on traffic conditions, provide vehicles with safety equipment, and improves the transportation infrastructure.

Intermodal: Between or including more than one means, or mode, of transportation, such as automobile, transit, ship, bicycle, and walking.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA): Landmark federal legislation (pronounced "ice tea") signed into law in 1991 that made broad changes in the way transportation decisions are made. It provided funding authorizations for highways, safety, and mass transportation from the Highway Trust Fund. ISTEA emphasized diversity and balance of modes, as well as the preservation of existing systems before construction of new facilities. ISTEA expired in 1997, but much of its program structure is carried forward in new federal legislation.

Land Use Regulation AMC Title 21. (See Anchorage Municipal Code.)

Level Of Service (LOS) :A standard means of measuring traffic congestion by evaluating the capacity of a road with respect to the

number of vehicles using the road in a given time frame. LOS is categorized into six levels, A through F, with LOS A representing the best possible condition and LOS F representing the worst.

Local road: A functional classification of a type of roadway that provides access to individual homes and other land uses as discussed in Chapter 1 of the DCM. The required improvements to local roads are established in AMC Title 21.

Improvements to local roads constructed under Road Improvement Districts (RIDs) will also follow requirements as described in AMC Title 21. The Municipal Assembly is responsible for approving RIDs and granting any waivers to the standards.

Major arterial: A functional subclassification of a type of roadway that provides for moderately long (inter-area), through trips between regionally significant traffic generators. Its primary function is traffic movement. A major arterial offers direct access to other arterials and collectors and

Metropolitan Planning Organization (MPO): The organizational entity designated by law (23 U.S. Code 134 and Section 8 of the Federal Transit Act) with lead responsibility for developing transportation plans and programs for urbanized areas of 50,000 or more in population. An MPO is established by agreement of the Governor and the units of general-purpose local government that together represents 75 percent of the affected population of an urbanized area.

Minor arterial: A functional subclassification of a type of roadway that provides for medium-length (intra-area), urban trips and serves high-intensity commercial and residential generators. Its primary function is traffic movement. A minor arterial also offers direct access to adjacent land uses, other arterials, collectors, and major residential streets. A minor arterial is generally an undivided, two-directional facility. Minor Arterials are designated in the Official Streets and Highways Plan. (See Arterial and Official Streets and Highways Plan.).

Mode: Any one of the following means of moving people or goods: aviation, bicycle, highway, paratransit, pedestrian, pipeline, rail (commuter, intercity passenger and freight), transit, space and water.

Mode split: Mode split refers to the percentage of trips taken by each of the possible modes.

Model: A computerized set of equations used to forecast traffic volumes and public transit ridership in a future year.

Multimodal: Representing more than one mode of transportation, especially within a system or corridor.

Multimodal Transportation Planning: Efforts to plan transportation improvements that consider more than one mode of travel; for example, driving,

ridesharing, use of public transit, bicycling, walking, and other modes. A multimodal approach to transportation planning focuses on the most efficient way of getting people or goods from place to place, be it by truck, train, bicycle, automobile, airplane, bus, foot, or even a computer modem.

Multi-way Boulevard: A type of street that is designed to separate through traffic from local traffic by use of medians.

National Ambient Air Quality Standards (NAAQS): National standards for air quality. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

National Environmental Policy Act of 1969 (NEPA): Legislation that established a supplemental mandate for federal agencies to consider the potential environmental consequences of their proposals, document the analysis, and make this information available to the public for comment prior to implementation.

National Highway Performance Program (NHPP): Under MAP-21, the enhanced National Highway System (NHS) is composed of approximately 220,000 miles of rural and urban roads serving major population centers, international border crossings, intermodal transportation facilities, and major travel destinations. It includes the Interstate System, all principal arterials (including some not previously designated as part of the NHS) and border crossings on those routes, highways that provide motor vehicle access between the NHS and major intermodal transportation facilities, and the network of highways important to U.S. strategic defense (STRAHNET) and its connectors to major military installations.

The NHPP is authorized at an average of $21.8 billion per year to support the condition and performance of the NHS, for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in an asset management plan of a State for the NHS.

National Highway System (NHS): A network of primary highways and ferry routes designated by the FHWA, USDOT, considered most important to interstate travel, national defense, connection with other modes of transportation, and essential to international commerce. The focus of the NHS is the long-range movement of people, goods, and services. This approximately 160,000-mile network consists of the 42,500 miles of the Interstate System, plus other key roads and arterials throughout the United States. In the MOA, DOT&PF in consultation with AMATS handles the programming of NHS project funding. These principle arterials or connections to major transportation terminals include: (1)

Seward Highway from 5th Avenue to the southern MOA boundary line near Portage; (2) Glenn Highway (5th/6th Avenues) from L Street east to the MOA boundary near Knik River; (3) Minnesota Drive from 5th Avenue to its connection with the Seward Highway; (4) Post Access from 5th Avenue north to Hollywood Drive and the north end of the Port of Anchorage; (5) International Airport Road west of Minnesota Drive; (6) Muldoon Road; (7) Tudor Road; and (8) Boniface Parkway access to Joint Base Elmendorf-Richardson.

Nonattainment area: A designation of the U.S. Environmental Protection Agency indicating that a geographic region has not met the National Ambient Air Quality Standard (NAAQS) for one or more transportation-related pollutants. In Alaska, portions of Anchorage, Fairbanks, and Juneau are so designated.

Non-National Highway System (non-NHS) The portion of the transportation system outside the National Highway System that includes the remainder of the area roadways. AMATS designates the priorities for the non-NHS, based on a project priority process used in the development of the AMATS Needs List.

Official Street and Highway Landscape Plan (OSHLP): The plan that provides guidelines for the inclusion of landscaping along primary transportation corridors for both aesthetics and slope stabilization. The Landscape Improvement Study furnishes additional guidance.

Official Streets and Highways Plan (OSHP): The plan that identifies the location and functional classification of roadways recommended in the MTP. The OS&HP is used during land subdivision and development to ensure that right-of-way for planned roads is properly and adequately reserved. Also intended to guide and coordinate high traffic generation development along the appropriate class(es) of roadway.

Operating revenues: Monies used to fund general, day-to-day costs of running transportation systems. For transit, costs include fuel, salaries, and replacement parts; for roads, operating costs involve maintaining pavement, filling potholes, paying worker salaries, and other expenses.

People Mover Route Restructuring Plan: The 2002 Municipality of Anchorage report titled *The People Mover Blueprint: A Plan to Restructure the Anchorage Transit System*. This report, prepared by RLS and Associates, Inc., presents the results of a comprehensive analysis of the People Mover route structure to identify ways to provide more of a customer focus to the bus system. The recommended route structure will increase public transportation ridership because service will be more frequent, routes will be more direct, new routes will be provided, buses will run earlier and later in the day, transfers will be easier and quicker to

make, and schedules will be easier to remember.

Performance Measure: A metric used to evaluate progress towards meeting a goal or strategy

Planning: A phase in transportation system development to determine the likely future transportation needs of an area.

Planning and Zoning Commission (PZC): An appointed Municipality of Anchorage body.

Policy Committee (PC): The formal decision-making body of AMATS, which approves final planning and programming documents.

Programming: A phase in transportation system development when the type and level of resources needed to design and build projects are determined and the scheduling of those resources occur.

Project Management Manual (PPM): The document presenting municipal policy that guides individuals who are responsible for the development and construction of municipal projects. (See Design Criteria Manual.)

Public Involvement Program (PIP): A program identifying the processes and techniques required to be proactive in transportation decision-making.

Record of Decision (ROD): A document issued as the final step in the Environmental Impact Statement process. The ROD identifies the selected alternative, presents the basis for the decision, identifies all the alternatives considered, specifies the "environmentally preferable alternative," and provides information on the adopted means to avoid, minimize, and compensate for environmental impacts.

Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA): Federal legislation that carries on much of the program structure begun under the Intermodal Surface Transportation Efficiency Act of 1991. SAFETEA provides funding authorizations for highways, safety, and mass transportation from the Highway Trust Fund.

Single-Occupancy Vehicle (SOV): A vehicle with one occupant, the driver, who is sometimes referred to as a "drive-alone."

State Implementation Plan for Air Quality (SIP): The document describing the strategies necessary to bring nonattainment areas into conformity with the National Ambient Air Quality Standards. The SIP demonstrates shows how the State of Alaska will meet air quality standards, as required by the 1977 Clean Air Act Amendments.

State of Alaska Department of Transportation and Public Facilities (DOT&PF): The state agency that is responsible for highways, mass transit, aviation, and ports and implements the State of Alaska's overall transportation policy.

Statewide Transportation Improvement Program (STIP): A transportation improvement program produced by the Alaska Department of Transportation and Public Facilities (DOT&PF). The Anchorage Metropolitan Area Transportation Solutions (AMATS) holds special status under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) for program development. As an urban area with greater than 200,000 population, the Anchorage urban area falls under the Transportation Management Area (TMA) rules. Under ISTEA, AMATS is empowered to determine its own priority for projects and prepare its own Transportation Improvement Program (TIP) based on funding allocated to AMATS within the STIP. In the other 49 states, TMAs are allocated funds based on a statutory formula. ISTEA contains an exception to this requirement for Alaska, in that the allocation of funds for Alaska TMAs is determined by DOT&PF within the STIP.

Surface Transportation Program (STP): A new categorical funding program created with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). A specific clause found in the ISTEA legislation directs that these funds may be spent on any public road in Alaska, regardless of classification. Of the STP funds, 10 percent must be spent on Transportation Enhancement projects. Funds may be used for a wide variety of purposes, including roadway construction, reconstruction, resurfacing, restoration, and rehabilitation; roadway operational improvement; capital costs for transit projects; highway and transit safety improvements; bicycle and pedestrian facilities; scenic and historical transportation facilities; and, preservation of abandoned transportation corridors. The federal funds ratio varies and is either 90.97 percent or 93.4 percent, depending on the specific category of work.

Target: A quantifiable level of performance or condition to be achieved within a time period. A performance measure target has the same unit and precision level as its measure.

Technical Advisory Committee (TAC): A formal body of representatives from various agencies and interests that reviews transportation planning documents and advises the Policy Committee of Anchorage Metropolitan Area Transportation Solutions (AMATS).

Traffic Analysis Zone (TAZ): A unit of geography commonly used in transportation planning models.

Trails and Recreational Access for Alaska (TRAAK): A program and component of Governor Tony Knowles' Transportation Initiative (June 1995) established to improve access and recreational opportunities in the state. Administered by DOT&PF, TRAAK addresses trails, scenic highways, recreational access points, and interpretive facilities. The program is funded primarily

with federal dollars from the Surface Transportation Program.

Transit Facilities Design Guidelines: The document specifying guidelines and recommended methodology for the location and design of bus stops and other transit facilities within the Municipality of Anchorage. Items addressed include transit vehicle dimensions, location and design of bus pullouts, and other transit amenities.

Transportation Demand Management (TDM): A general term for strategies that result in more efficient use of transportation resources. Representative low-cost ways to reduce demand by automobiles on the transportation system include programs to promote telecommuting, flex time, and ridesharing.

Transportation Enhancement: A category of projects defined in the Intermodal Surface Transportation Efficiency Act as involving "provisions of facilities for pedestrians and bicycles; acquisition of scenic easements or historic sites; scenic or historic highway programs; landscaping and other scenic beautification; historic preservation, rehabilitation and operation of historic highway buildings, structures, or facilities (including railroad facilities); preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails); control and removal of outdoor advertising, archaeological planning and research; and mitigation of water pollution due to highway runoff." Transportation Enhancement projects have been of particular interest to the general public and users of nontraditional transportation-related facilities.

Transportation Equity Act for the 21st Century (TEA-21): The most recent comprehensive federal transportation enabling legislation, enacted on June 9,1998. This act retains and expands many of the programs created in 1991 under the Intermodal Surface Transportation Efficiency Act (ISTEA). It reauthorizes federal surface transportation programs for 6 years (1998–2003) and significantly increases overall funding for transportation.

Transportation Equity Act: A Legacy for Users of 2005 (SAFETEA-LU): Legislation reauthorizing the federal highway and transit programs formerly authorized under Transportation Equity Act for the 21st Century (TEA-21).

Transportation Improvement Program (TIP): A 3-year capital program of transportation projects, focused on federal funding for roadway, trails, and transit capital projects for the urbanized area. The TIP covers federal, state, and local funding for roadway, transit, trails, and enhancement projects. The document includes new projects, as well as previously funded projects that require additional effort.

Transportation Management Area (TMA): An area subject to special federal requirements for congestion management systems, project selection, and certification. These special requirements are for urbanized areas having a population of more than 200,000.

U.S. Department of Transportation (USDOT): The federal cabinet-level agency that is responsible for highways, mass transit, aviation, and ports and implements the nation's overall transportation policy. Headed by the Secretary of Transportation, the USDOT includes the Federal Highway Administration and the Federal Transit Administration, among others.

U.S. Environmental Protection Agency(EPA): The federal agency that reviews air quality conformity analysis and advises the Federal Highway Administration and Federal Transit Authority on approval of a conformity finding.

Unified Planning Work Program (UPWP): Federally required document outlining the activities to be undertaken in support of federally funded transportation projects.

Urban Design Commission (UDC): A group whose members review and make recommendations for local public facilities such as street and roadway landscape improvement projects. The members provide advice on urban design matters.

Useful Life Benchmark (ULB): The expected lifecycle of a capital asset within a transit provider's operating environment.

Vehicle Revenue Miles: The miles traveled by a transit provider when a vehicle is in revenue service (i.e., the time when a transit vehicle is available to the general public and there is an expectation of carrying passengers).

Appendix

B

MTP2040

LINK - CONNECT - MOVE

Public Involvement Chronology

Public involvement activities for the 2040 MTP are on-going.

This appendix will be completed at the end of the planning process.

Appendix

C

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Environmental Justice and Community Impacts

Environmental Justice

This appendix examines community impacts and environmental justice considerations associated with the 2040 MTP.

Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (1994) is a product of the Title VI of the Civil Rights Act of 1964. The EO directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. Metropolitan planning organizations, like Anchorage Metropolitan Area Transportation Solutions (AMATS), are required by the U.S. Department of Transportation (US DOT) to identify and address disproportionately high and adverse public health and environmental effects of transportation policies, programs, and activities on low-income and minority populations.

The US DOT Order on Environmental Justice [1] defines low-income as a person whose median household income is at or below the Department of Health and Human Services poverty guidelines. It also defines minority as a person who is:

(1) Black: a person having origins in any of the black racial groups of Africa;

(2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;

(3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;

(4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or

(5) Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The purpose of this appendix is to conduct an evaluation of the 2040 Metropolitan Transportation Plan (MTP). The analysis contains two parts: (1) analysis of the transportation needs of low-income and minority populations and (2) determination of whether the benefits and burdens of the existing and proposed transportation system investments (contained in the 2035

MTP) are distributed equitably among target (low- income and minority) and non-target population within Anchorage. Information about outreach to environmental justice populations can be found in Chapter 2.

Transportation Needs of Low-Income and Minority Populations

From a review of U.S. Census data and other, locally gathered survey information, it appears that low-income and minority populations are disproportionately dependent on the public transportation system. According to the 2013-2017 American Community Survey[2] , approximately 2.5% of the minority workers 16 years and older in the Municipality of Anchorage ride the bus to work compared to only 1.1% of the non- minority worker 16 years or older population. Moreover, the majority of persons using transit to travel to work are considered low-income (61.2% of the workers 16 years and older making less than $25,000 per year) compared to 25.3% of all workers (2013-2017 ACS).

Benefits and Burdens of MTP projects to EJ Populations

The MTP's recommendations will benefit the area's population in many ways including mobility, safety, time savings and economic development. Since each project's benefits and burdens are unique, it is difficult to assess the impact to low-income and minority populations at a regional scale. This analysis does not replace the individual project analysis that will be completed for each project during its development.

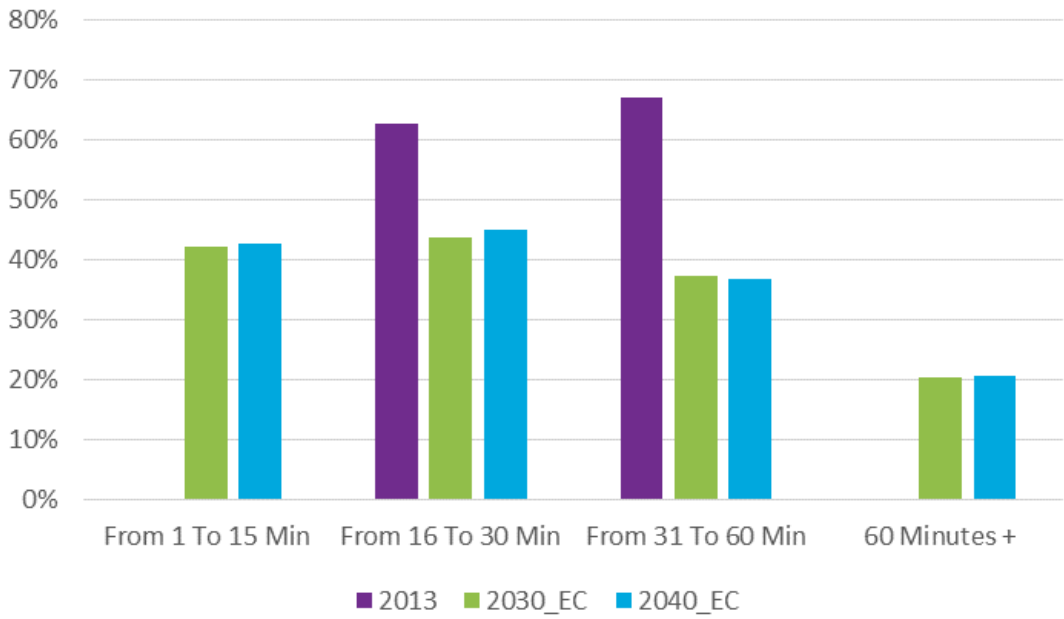
Benefits from non-motorized improvements include reduced emissions, less land used for parking, improvements in community health, and improved pedestrian safety. Some negative impacts that may result from the non-motorized improvements include reduction in motor vehicle capacity and additional conflicts at intersections.

Benefits from transit improvements include increased mobility for individuals who do not drive, increases in person capacity without increasing a road's footprint, reduction in VMT, provides more transportation choices, more competitive travel time to the private vehicle, and reduced vehicle emissions. The investment in transit and non-motorized improvements will particularly benefit low income populations that do not have access to personal vehicles and the disabled who may be unable to operate personal vehicles. Low-income populations may benefit from the replacement of the transit fleet as the transit service spends the most time in these neighborhoods. Due to the nature of the proposed

improvements, there will be little negative impacts associated with transit improvements except short-term construction related impacts.

People Mover recently revamped their transit system to increase transit frequency on multiple routes. In doing so, they reduced the overall transit service area. The revised system allowed People Mover to put high-frequency routes in high-density, low-income areas. According to Anchorage Talks Transit: Choices, Outreach, and Future Alternatives, " It is important to note the degree to which poverty is not concentrated in any one part of the municipality. Apart from the more affluent communities in southern Anchorage, all parts of the municipality are home to people who have an incentive to use transit for reasons of income" [3]. Given the existing transit network, Figure C-1 shows the effects of the revamped system on low-income households. For each of the route frequency categories, the figure depicts the percentage of households within a ½ mile buffer of each route frequency that are low-income. In 2013, the MTP baseline year, there were no 15 minute routes in People Mover's system. According to Figure C-1, when modeled in 2030 and 2040, the service change will result over 40 percent of the households that are within a half mile of a 15 minute route are low-income households.

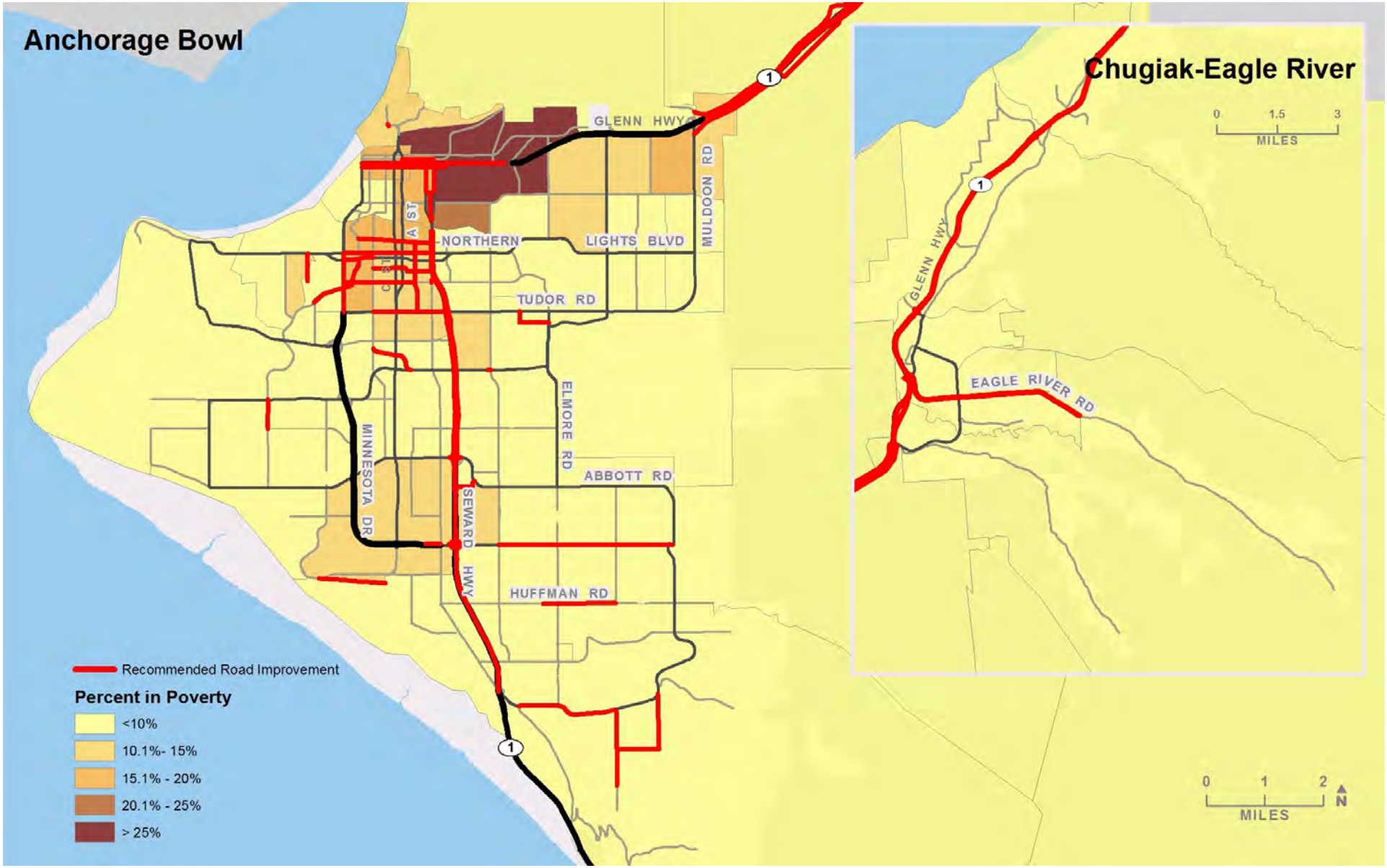
Figure C-1 Percent of Low-Income Households within 1/2 Miles of Transit by Frequency of Service (Headway)



Transit riders have a higher tendency to be members of an environmental justice population. This means that improvements to the transit system tend to benefit low income or minority populations, and also provide greater mobility benefits to the elderly, or people with disabilities. Transit improvements in the plan include projects to improve bus stops and transit facilities that will improve comfort and safety for riders; transit fleet replacements for programs such as AnchorRIDES paratransit service that will provide enhanced mobility for seniors and individuals with disabilities, and signal improvements at key intersections along frequent routes to improve travel times and reliability for transit riders. These improvements will provide benefits to key demographic groups dependent on public transit for their mobility needs.

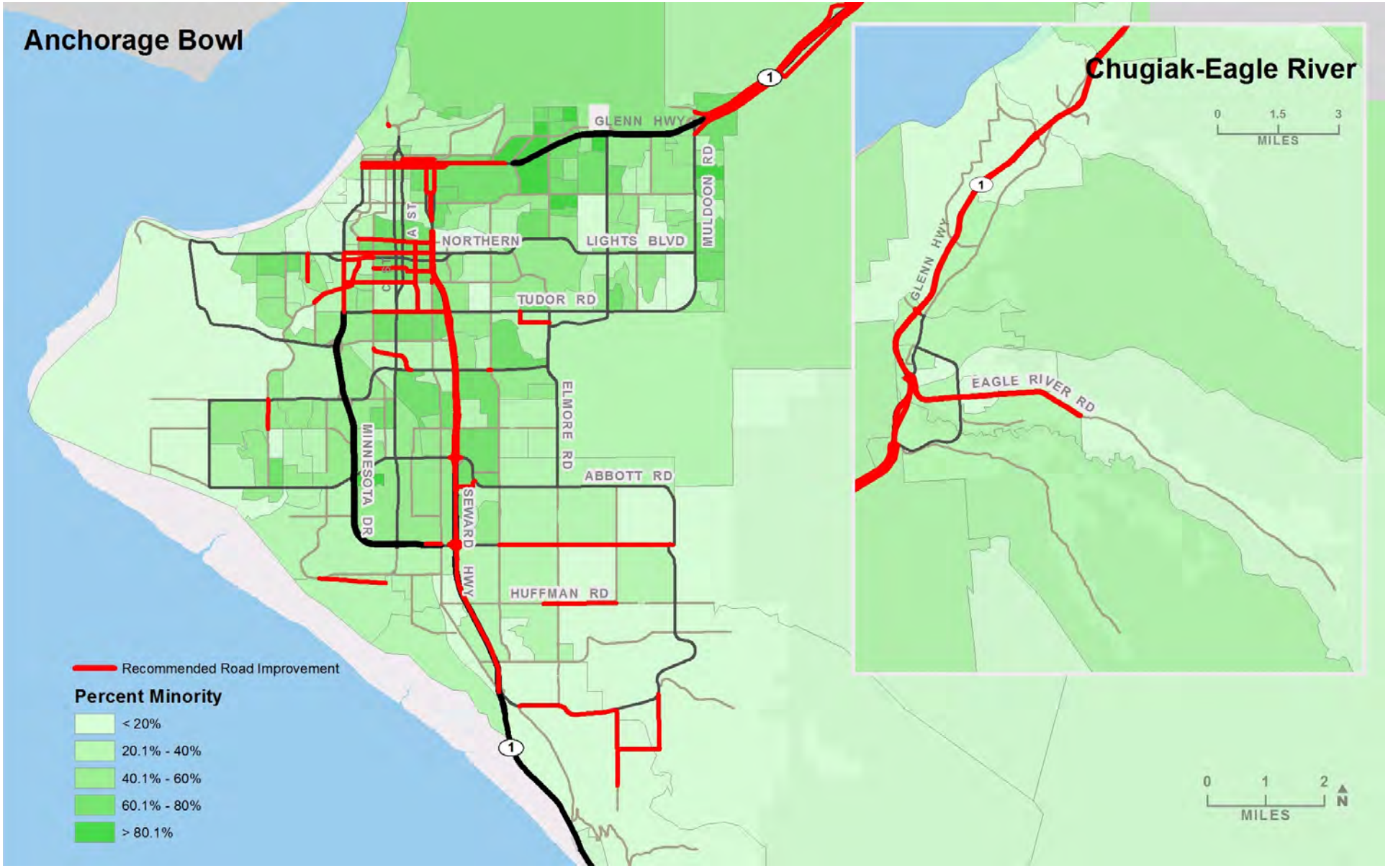
Figure B-2 and Figure B-3 shows the recommended MTP road projects overlaid on maps showing low-income and minority areas. Most of the recommended MTP road projects are to meet the transportation needs in growing parts of the region or to keep the existing system in a state of good repair. The roadway projects that have the potential for the greatest impacts on low-income and minority population are Midtown Congestion Relief – 36th Avenue Interchange, Midtown Congestion Relief – Northern Lights Boulevard/Benson, Midtown Congestion Relief – Chester Creek, Seward Highway/Glenn Highway Connection – 20th Avenue (Chester Creek) to 13th Avenue, Seward Highway/Glenn Highway Connection – Airport Heights Interchanges. These projects have the potential to bisect the Fairview and Mountain View communities, both of which have high percentages of low income and minority residents. These projects may include some benefits to these neighborhoods. The Seward Highway-Glenn Highway area tends to be congested in peak periods. Adjacent communities also report that drivers are cutting through their neighborhoods trying to avoid that congestion. Reducing congestion may also lead to improved air quality, improve travel times for local residents, and an improved ability to walk or bike in the area. Previous studies and plans along this corridor have identified several strategies to mitigate the community impacts of road improvements in this area. Strategies include: depressing the highway to reduce visual blight and noise impacts, covering the highway at strategic locations to provide opportunities to develop parks or open space, extensive use of bridges to improve pedestrian access and neighborhood connectivity. Another strategy is to convert some of the heavily traveled streets (such as Ingra and Gambell streets) as pedestrian-friendly main streets.

Figure C-2 Recommended MTP Road Projects and Concentrations of Low-Income Individuals



Source: American Community Survey, 2013-2017

Figure C-3 Recommended MTP Road Projects and Concentrations of Minority Individuals



Source: American Community Survey, 2013-2017

A calculation of travel time was computed using the AMATS Travel Demand Model for trips made by low-income households as compared to the average overall. The results are presented in Table C-1. As can be seen in the table, trips made by low-income households have lower trip times for all trips and for home-based work trips compared to trips made by all households. While part of this is due to the proximity of low-income areas to employment, it also reflects that the transportation system and land use mix provides for reduced travel times for low income households.

Table C-2 shows the average cost per trip computed using the AMATS Travel Demand Model for low-income households and all households and reports the change of the preferred plan as compared to the 2040 E+C model run. While costs for both income levels are greater as compared to the 2040 E+C model run, the increase in costs would be higher for households overall (1.7%) as compared to low income households (1.3%).

Conclusion

On the basis of the analysis described above, AMATS has determined that the recommendations contained in the 2040 MTP do not have a disproportional impact on areas of high concentration of low-income and minority populations. Furthermore, the 2040 MTP duly considers the transportation needs of low-income and minority populations and provides many recommendations that will substantially benefit these populations.

Table C-1 Average Trip Time by Income in 2040

All Trips	
Low-Income	7.1 minutes
All Income Levels	9.1 minutes
Home-Based Work Trips	
Low-Income	13.6 minutes
All Income Levels	15.1 minutes

Table C-2 Average Cost Per Trip by Income Level in 2040

Average cost by Income	**Average Cost Per Trip**	**Change from 2040 E+C**
Low-Income Households	$0.76	1.3%
All Households	$1.20	1.7%

Notes

[1] FHWA. Final DOT Environmental Justice Order. http://fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102s

[2] American Factfinder. 2013-2017. https://factfinder.census.gov/faces/tableservices/jsf/productview.xhtml?pid=ACS_09_5YR_S0804&productview.xhtml?pid=ACS_09_5YR_S0804&prodType=table

[3] People Mover. Anchorage Talks Transit; Choices, Outreach and Future Alternatives. http://www.muni.org/departments/transit/PeopleMover/Pages/TransitTalks.aspx

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Appendix

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Safety and Security

Safety

The goal of safety planning is to reduce fatalities and injuries on the transportation system. It generally takes a collaborative approach because agencies have limited time and resources, and so they need to work together to have the biggest impact on the area's safety issues. To improve transportation safety, agencies generally consider engineering, enforcement, education, and emergency services (collectively known as the "5Es"):

- Engineering – Improve the physical environment to improve safety. Can include analyzing data and designing improvements. Examples of engineering solutions include installation of warning signs and redesign of an intersection.
- Enforcement – Enforce compliance with traffic laws. Law enforcement often collects crash data. Examples of enforcement-related activities include issuing traffic citations.
- Education - Change people's behavior to help them understand what they should do and not do, and how to safety use the transportation system. Education needs to be directed at all age groups and modes to encourage safer behaviors. Examples of education-related activities include classroom visits and educational materials.
- Emergency Services – When a crash occurs, fast, efficient, and coordinated emergency response is needed. Effective emergency services can help reduce deaths and injuries from crashes. Reducing response times and improving medical care after a crash can often improve crash survival and reduce injury severity. Emergency service agencies can also provide data that can be used in safety planning. Examples of emergency response solutions include using an intelligent transportation system to reduce response times.
- Evaluation - Check to see if strategies are working. Evaluation activities can help with goal-setting and establishing baseline data.

There are already several safety programs underway in the area designed to improve safety. They are summarized on the following pages.

Alaska Strategic Highway Safety Plan

The Alaska Strategic Highway Safety Plan (SHSP) "is a statewide, comprehensive safety plan that provides a coordinated framework for reducing fatalities and serious injuries on all public roads." [1] The SHSP framework focused on the 5Es of safety: engineering, enforcement, education, emergency response, and evaluation. Alaska is currently updating its Strategic Highway Safety Plan (SHSP) to comply with FAST Act requirements.

MOA Safety Initiatives

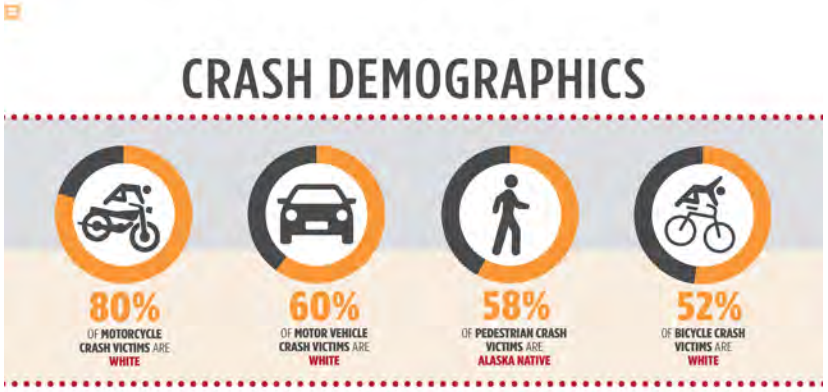
The MOA Traffic Department provides several programs to improve safety:

- Right-of-Way Special Activity Permits –To identify and minimize conflicts in the right-of-way
- Neighborhood Traffic Safety – Works with neighborhoods to address traffic concerns
- School Zone Safety –Responsible for the Safe Routes to School manual and the School Area Traffic Safety manual
- Traffic Impact Analysis - To establish the requirements to offset the traffic impacts of a proposed development on the transportation system
- Intersection Safety Studies –To identify traffic safety problems (if any), identify and evaluate solutions, and recommend appropriate actions.
- Collision Reports –A searchable database that provides information about collision occurrence.

Vision Zero

The MOA participates in Vision Zero, a community commitment to reduce the loss of life and major injuries on roadways to zero while increasing safe, healthy, and equitable mobility for all. The Vision Zero Action Plan was adopted in November 2018 and is available online at http://muni.org/Departments/OCPD/Planning/AMATS/Pages/visionzero.aspx

The Public Transportation Department has a System Safety Policy and Program Plan designed to maintain a safe and



Source: Vision Zero

Transit Safety

injury/illness-free workplace. Some additional safety-related activities conducted by the Public Transportation Department include:

- Adopt-A-Stop – local organizations and individuals agree to keep their adopted bus stop clean (e.g., remove litter) and inform Public Transportation about problems at the stop. Additional information is available at http://www.muni.org/Departments/transit/PeopleMover/Pages/Adopt-A-Stop.aspx
- Investigation of all crashes and incidents
- Hazard assessments and investigations
- Safety training for employees
- Planning for and conducting emergency drills

Bicycle and Pedestrian Safety Planning

The MPO has developed and is updating a plan to address the needs of non-motorized users as part of the MOA Non-Motorized Plan. As of October 2019, an update of the plan is ongoing. This plan analyzed the needs of non-motorized users in the region and identifies recommendations and actions to improve the safety of non-motorized users. Actions taken to-date include incorporation of non-motorized facilities into roadway projects, construction of bicycle facilities, recording of bike and pedestrian crashes, a bike map, and additional signage.

The State of Alaska has developed the Alaska Statewide Bicycle and Pedestrian Master Plan to identify how to encourage and increase local bicycle and pedestrian activity, and discuss the roles of state and local government in planning and designing pedestrian and bicycle facilities. The plan was adopted by the State on July 1, 2019.

Other plans/programs that address bicycle and pedestrian safety within the MOA include:

- Safe Route to School Program
- Bike to School Day
- Trail Watch

Security

Transportation security is "freedom from harm, tampering, natural disasters, and extreme weather events that would affect motorized and non-motorized travelers. Security goes beyond safety to include planning that prevents, manages, or responds to threats to a region and its transportation system and users" [2].

Security includes planning to prevent, manage, and respond to threats to an area and its transportation system and users.

For this MTP, security includes protecting property and people from intentional damage, criminal activity, or terrorism. It also includes responses to natural and man-made hazards.

Hazards in Anchorage

According to the MOA *All Hazards Mitigation Plan Update* (2016), potential hazards in Anchorage include:

- Earthquake
- Wildfire
- Extreme weather
- Flooding
- Avalanche
- Ground failure/Landslide
- Severe erosion
- Dam failure
- Energy emergency
- Urban fire
- Hazardous materials release
- Dock failure
- Transportation accident
- Communications failure

These hazards can have a significant impact on the transportation system. They can prevent the system from operating properly. They may also interfere with the ability to deliver emergency supplies or conduct evacuation if necessary. Some of the potential impacts to the transportation system include:

- Damage to infrastructure
- Damage to vehicles that restrict mobility
- Traffic congestion
- Inability for emergency services to travel
- Lack of freight movement to Anchorage and between Anchorage and other parts of Alaska
- Hazardous material spills

For additional information about these hazards, please see the MOA All-Hazards Mitigation Plan. These hazards have been considered during the 2040 MTP process. For example, safety was considered when projects were prioritized. Safety considerations included projects located at high crash areas, providing redundancy to the system, and providing secondary access for emergency response purposes. Plan development also included coordination with emergency service agencies and emergency service providers.

Highway Security

The Strategic Highway Network (STRAHNET) system of public highways provides access, continuity, and emergency transportation of military personnel and equipment. This 61,000-mile system was designated by the FHWA in partnership with the Department of Defense. In Anchorage, STRAHNET includes the Glenn and Seward highways, along with the connection to the Port of Alaska.

Climate Action Plan

The MOA has adopted a Climate Action Plan to create a strategic framework to reduce greenhouse gas emissions and adapt to the impacts of climate change. The plan identifies greenhouse gas emissions and projected climate impacts, with a prioritized list of actions that will result in substantial economic, environmental, and community benefits. The plan was adopted on May 21, 2019 and is available online at https://www.muni.org/Departments/Mayor/AWARE/resilientanchorage/pages climateactionplan.aspx

Notes

[1] DOT&PF. Alaska Strategic Highway Safety Plan 2018-2022. http://dot.alaska.gov/stwdplng/shsp/assets/AKDOT_SHSP_2018_2022.pdf

[2] FHWA. The Transportation Planning Process Briefing Book. https://fhwa.dot.gov/planning/publications/briefing_book

ANCHORAGE
Climate Action Plan

Appendix

E

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LINK - CONNECT - MOVE

Fiscal Constraint Analysis

AMATS Transportation Plan - Sources and Uses of Revenue (2018-2040) ($ in millions)

AMATS Transportation Plan - Sources and Uses of Revenue (2018-2040) ($ in millions)

SHORT TERM

2018-2040 All Projects		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Road, Bike/Ped/Trail, ARR Project Costs		999.1	986.6	946.1	892.9	831.0	777.9	713.0	630.7	546.1	457.7	365.5	269.2	168.8
Less: Year's Spending		31.8	59.1	70.7	78.2	68.4	78.9	94.7	95.3	97.3	99.4	101.5	103.7	169.9
Projects Deferred to Future Years		967.3	927.6	875.4	814.7	762.2	699.0	618.3	535.4	448.7	358.3	263.9	165.5	(1.1)
Inflation		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Deferred Projects		986.6	946.1	892.9	831.0	777.9	713.0	630.7	546.1	457.7	365.5	269.2	168.8	(1.1)
Total Transit and ARRC Project Costs	Total Project cost	13.3	14.6	5.8	6.5	7.5	6.5	6.7	7.4	7.0	7.2	7.4	7.6	8.3
Less: Year's Spending	2018-2040 Annual Rev.	13.3	14.6	5.8	6.5	7.5	6.5	6.7	7.4	7.0	7.2	7.4	7.6	8.3
Projects Deferred to Future Years		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Deferred Projects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Costs	Total Project cost	1,012.4	1,001.2	951.9	899.4	838.5	784.4	719.7	638.1	553.1	464.9	372.9	276.8	177.1
Less: Year's Spending	2018-2040 Annual Rev.	45.1	73.7	76.5	84.7	75.9	85.4	101.4	102.7	104.4	106.6	109.0	111.3	178.2
Projects Deferred to Future Years		967.3	927.6	875.4	814.7	762.6	699.0	618.3	535.4	448.7	358.3	263.9	165.5	(1.1)
Deferred Projects		986.6	946.1	892.9	831.0	777.9	713.0	630.7	546.1	457.7	365.5	269.2	168.8	(1.1)

		LONG TERM									
2018-2040 All Projects		**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Total Road, Bike/Ped/Trail, ARR Project Costs		1,116.0	1,033.1	945.7	853.7	757.0	655.3	548.6	436.6	319.0	195.8
Less: Year's Spending		108.2	110.4	112.8	115.2	117.7	120.1	112.7	125.3	128.0	209.5
Projects Deferred to Future Years		1,007.9	922.7	832.9	738.6	639.4	535.2	425.9	311.3	191.1	(13.7)
Inflation		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Deferred Projects	carryover from the end of the Short Term	1,033.1	945.7	757.0	757.0	655.3	548.6	436.6	319.0	195.8	(14.0)
Total Transit and ARRC Project Costs	Total Project cost	6.4	6.0	6.4	6.8	6.4	6.5	7.3	6.8	6.9	7.7
Less: Year's Spending	2018-2040 Annual Rev.	6.4	6.0	6.4	6.8	6.4	6.5	7.3	6.8	6.9	7.7
Projects Deferred to Future Years		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Deferred Projects	carryover from the end of the Short Term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Costs	Total Project cost	1,122.4	1,039.1	763.4	860.5	661.8	661.8	555.9	443.4	325.9	203.5
Less: Year's Spending	2018-2040 Annual Rev.	114.6	116.4	124.0	122.0	763.4	126.7	130.0	132.1	134.9	217.2
Projects Deferred to Future Years		1,007.9	922.7	639.4	738.6	535.2	535.2	425.9	311.3	191.1	(13.7)
Deferred Projects	carryover from the end of the Short Term	1,033.1	945.8	655.3	757.0	655.3	548.6	436.6	319.0	195.8	(14.0)

AMATS Transportation Plan - Forecast Revenues ($ in millions) 2018-2040

	Notes	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
MOA Road Capital (road bonds to LRTP projects)	Note 1	0.7	3.9	4.2	7.7	1.2	1.2	2.2	6.1	6.2	6.4	6.5	6.7
State Legislative Grants (not including State Bonds) - NHS	Note 2	0	0	0	0	0	0	8.8	9	9.2	9.4	9.6	9.8
State Legislative Grants (not including State Bonds) -Non-NHS	Note 2	0	0	0	0	0	0	13.7	13.9	14.2	14.5	14.8	15.1
Federal Other	Note 3	0	0	0	0	0	0	0	0	0	0	0	0
FHWA NHS (Anchorage & Chugiak/Eagle River)	Note 4	2.6	25.1	25.6	26.1	26.7	27.2	27.8	28.4	29	29.6	30.2	30.9
FHWA Non-NHS (Anchorage & Chugiak/Eagle River)	Note 5	18.6	14.5	19.6	20	20.4	20.9	21.3	21.8	22.2	22.7	23.2	23.7
HSIP	Note 6	4.7	9.4	7.3	5	5	5.1	5.2	5.3	5.4	5.6	5.7	5.8
GO Bond	Note 7	0	0	0	0	0	0	0	0	0	0	0	0
Road Revenue Source Total		26.5	52.9	56.6	58.9	53.3	54.4	79	84.5	86.3	88.1	90	91.9
Non-motorized Funds (10% of AMATS Allocation)	Note 8	2.9	2.9	3	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.6
Transportation Alternatives Program (AMATS)	Note 9	0.9	1.7	0.9	0.9	0.9	1	1	1	1	1	1.1	1.1
MOA Capital (bonds to bike/ped MTP projects)	Note 10	1.5	1.5	10.2	15.3	11	20.3	10	5	5.1	5.2	5.3	5.4
State Legislative Grants - Non-Motorized	Note 11	0	0	0	0	0	0	1.5	1.5	1.5	1.6	1.6	1.6
Bike/Ped/Trails Revenue Source Total		5.3	6.1	14.1	19.3	15.1	24.5	15.7	10.8	11.1	11.3	11.5	11.8
MOA Local Funds	Note 12	0	0	0	0	0	0	0	0	0	0	0	0
General Obligation Bond Proceeds	Note 13	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
State General Revenue	Note 14	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1
FTA Urbanized Area (UAP) program (5307)	Note 15	0.9	0.9	0.9	1	1	1	1	1	1.1	1.1	1.1	1.1
FTA Capital Program Funds (5309)	Note 16	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
MAP-21/FAST Bus & Bus Facilities Formula (5339)	Note 17	0	4.3	0	0	0.5	0	0	0.5	0	0	0.5	0
AMATS CMAQ Funding for Transit	Note 18	2.9	7.5	3	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.6
Transit Revenue Source Total		4.4	13.4	4.7	4.8	5.3	5	5.1	5.7	5.3	5.4	6	5.6
Railroad track, facilities and infrastructure	Note 19	8.9	1.2	1.1	1.8	2.2	1.6	1.7	1.7	1.7	1.8	1.8	1.8
Railroad Revenue Source Total		8.9	1.2	1.1	1.8	2.2	1.6	1.7	1.7	1.7	1.8	1.8	1.8
Estimated Total Sources of Funding		36.2	72.4	75.4	83	73.7	83.8	99.8	101	102.6	104.8	107.6	109.3

AMATS Transportation Plan - Forecast Revenues 2018-2040 ($ in millions)cont.

	Notes	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
MOA Road Capital (road bonds to LRTP projects)	Note 1	6.9	7	7.2	7.4	7.6	7.8	8	8.2	8.4	8.6	8.8	138.3
State Legislative Grants (not including State Bonds) - NHS	Note 2	10	10.2	10.4	10.7	10.9	11.1	11.3	11.6	11.8	12.1	12.3	178.2
State Legislative Grants (not including State Bonds) -Non-NHS	Note 2	15.5	15.8	16.1	16.5	16.8	17.2	17.5	17.9	18.3	18.6	19	275.4
Federal Other	Note 3	0	0	0	0	0	0	0	0	0	0	0	0
FHWA NHS (Anchorage & Chugiak/Eagle River)	Note 4	31.5	32.2	32.9	33.5	34.2	35	35.7	36.4	37.2	38	38.8	694.6
FHWA Non-NHS (Anchorage & Chugiak/Eagle River)	Note 5	24.1	24.7	25.2	25.7	26.2	26.8	27.4	27.9	28.5	29.1	29.7	544.2
HSIP	Note 6	5.9	6	6.2	6.3	6.4	6.6	6.7	6.8	7	7.1	7.3	141.7
GO Bond	Note 7	64	0	0	0	0	0	0	0	0	0	78.8	142.8
Road Revenue Source Total		157.9	95.9	97.9	100	102.1	104.3	106.5	108.8	111.1	113.5	194.7	2115.2
Non-motorized Funds (10% of AMATS Allocation)	Note 8	3.7	3.8	3.9	4	4	4.1	4.2	4.3	4.4	4.5	4.6	84.4
Transportation Alternatives Program (AMATS)	Note 9	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	26.1
MOA Capital (bonds to bike/ped MTP projects)	Note 10	5.5	5.7	5.8	5.9	6	6.1	6.3	6.4	6.5	6.7	6.8	163.5
State Legislative Grants - Non-Motorized	Note 11	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2	2	2	29.4
Bike/Ped/Trails Revenue Source Total		12	12.3	12.5	12.8	13.1	13.3	13.6	13.9	14.2	14.5	14.8	303.5
MOA Local Funds	Note 12	0	0	0	0	0	0	0	0	0	0	0	0
General Obligation Bond Proceeds	Note 13	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	4.7
State General Revenue	Note 14	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1
FTA Urbanized Area (UAP) program (5307)	Note 15	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	26.3
FTA Capital Program Funds (5309)	Note 16	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	14
MAP-21/FAST Bus & Bus Facilities Formula (5339)	Note 17	0	0.6	0	0	0.6	0	0	0.6	0	0	0.7	8.2
AMATS CMAQ Funding for Transit	Note 18	3.7	3.8	3.9	4	4	4.1	4.2	4.3	4.4	4.5	4.6	89
Transit Revenue Source Total		5.8	6.4	6	6.1	6.8	6.4	6.5	7.3	6.8	6.9	7.7	143.3
Railroad track, facilities and infrastructure	Note 19	1.9	1.9	1.9	2	2	2.1	2.1	2.2	2.2	2.3	2.3	50
Railroad Revenue Source Total		1.9	1.9	1.9	2	2	2.1	2.1	2.2	2.2	2.3	2.3	50
Estimated Total Sources of Funding		175.6	114.6	116.4	118.9	122	124	126.7	130	132.1	134.9	217.2	2562

Note 1) 2018-2024 reflects the Capital Improvement Program (CIP) Numbers for roadway projects in the MTP. Year 2025 is the 2005-2024 CIP MTP Road average with CPI applied beginning in 2026.

Note 2) 2018-2019 reflect actual legislative capital dollars received for roadway projects in the MTP. 2020-2023 reflect the current and anticipated State of Alaska budget reduction. 2024 is an average of the 2006-2019 Capital Budget grants to MTP projects. CPI applied beginning in 2025.

Note 3) Reflects possible federal grants such as BUILD, FASTLANE, or others.

Note 4) 2018 reflects obligated NHS numbers provided by DOT&PF. 2019 is an average of 2000-2018 obligated NHS numbers with CPI beginning in 2020.

Note 5) 2018 reflects obligated AMATS allocation amounts listed in the 2018 Obligation Report provided by DOT&PF. 2019-2022 reflects the draft 2019-2022 TIP based on the 2018-2021 STIP. 2023-2040 reflects expected AMATS Non-NHS allocation. Reduced by 10% for Transportation Alternatives,10% for CMAQ and 15% for Pavement Replacement each year based on current AMATS policy. CPI applied beginning in 2023.

Note 6) 2018 reflects the 2015-2018 TIP HSIP amount. 2019-2020 reflect the draft 2019-2022 TIP. 2021+ reflects $5M per year, based on a recommendation from DOT&PF with CPI applied in 2023.

Note 7) Based on an average of GO bonds in 2002, 2008, & 2012. Assumes next GO bond infusion in 2030 and 2040. Increases annually by CPI starting in 2019.

Note 8) 10% of AMATS allocation per current policy

Note 9) Portion of the Statewide TAP funding that AMATS receives. 2018-2019 reflects the draft 2019-2022 TIP and 2020 reflects TAP funding received per year from 2015-2018 with CPI applied beginning in 2021.

Note 10) 2018-2024 reflects the Capital Improvement Program (CIP) Numbers for non-motorized projects in the MTP. Year 2025 is the 2005-2024 CIP MTP non-motorized average with CPI applied beginning in 2026.

Note 11) 2018-2019 reflects State Legislative Capital Grants to the MOA for non-motorized projects. 2020-2023 reflect the current and anticipated State of Alaska budget reduction. 2024 reflects the average of 2006-2019 State Legislative Capital Grants to the MOA for non-motorized projects with CPI applied beginning in 2025. Note 12) Funds allocated to transit out of the general revenues of the governmental entity. General revenue funds are determined through the local government's annual budgeting process. 2018-2019 reflects MOA Operating Budget. 2020 reflects an average of 2015-2019 with CPI applied in 2021.

Note 13) A financing mechanism used to raise funds. A bond is secured debt offered through a legal entity that guarantees the purchaser's right to receive a fixed interest payment and the right to be paid the par value of the bond at a definite future date when the bond matures. 2020 reflects an average of 2015-2019 with CPI applied in 2021.

Note 14) Financial assistance obtained from the state government to assist with paying the costs of providing transit services. 2018-2019 reflect zero funding. 2020 reflects the average of 2015-2019 with CPI applied in 2021.

Note 15) Federal Highway Administration (FHWA) program whose funds can be flexed to FTA Section 5307 Urbanized Area Formula Program for transit projects. The Urbanized Area Formula Funding program (49 U.S.C. 5307) makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning. 2018 is an average of 2015-2017 with CPI applied in 2019.

Note 16) FTA's primary grant program for funding major transit capital investments. 2018 reflects an average of 2015-2017 with CPI applied in 2019.

Note 17) FTA grant program which provides funding through a competitive allocation process to states and transit agencies to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities. $500k every 3 years after 2019 with CPI applied starting in 2020.

Note 18) CMAQ funding provided by AMATS.