MSB LRTP
Matanuska-Susitna Borough
2035

Matanuska-Susitna Borough

Long Range Transportation Plan

ADOPTED

December 2017

CODE ORDINANCE

Sponsored By: Borough Manager
Introduced: 10/17/17
Public Hearing: 11/07/17
Postponed to 12/05/17: 11/07/17
Public Hearing: 12/05/17
Adopted: 12/05/17

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 17-114

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING THE MATANUSKA SUSITNA BOROUGH LONG RANGE TRANSPORTATION PLAN AND AMENDING MATANUSKA SUSITNA BOROUGH 15.24.030(B)(12).

WHEREAS, the MSB Long Range Transportation Plan (LRTP) 2017 Update assesses growth in the Matanuska-Susitna Borough over the next 20 years, and identifies the key elements of the Borough's future transportation system that will be needed to serve its growing communities; and

WHEREAS, the LRTP includes 7 overall goals for the Borough's transportation system:

1. Improvement Transportation and Land Use Connection;
2. Provide Transportation Choices;
3. Improve Connectivity;
4. Improve Mobility;
5. Safety - Make Transportation Safer;
6. Support Economic Vitality; and
7. Enhance Environmental Quality.

WHEREAS, the LRTP has been compiled with substantial public involvement and in coordination with representatives of the Alaska

State Department of Transportation and Public Facilities, Central Region; and

WHEREAS, the LRTP is a living document and is to be updated regularly.

BE IT ENACTED:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Amendment of paragraph. MSB 15.24.030(B)(12)is hereby amended as follows:

(12) Long Range Transportation Plan, August 1997, adopted 1997; as amended by Ordinance **Serial No.** 07-070, dated June 2007; **as amended by Ordinance Serial No. 17-114, dated December 5, 2017**.

Section 3. Effective date. This ordinance shall take effect upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this 5 day of December, 2017.

VERN HALTER, Borough Mayor

ATTEST:

LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Sykes, Beck, McKee, Leonard, Mayfield, Doty, and Kowalke

Acknowledgements

The Matanuska-Susitna Borough (MSB) 2035 Long Range Transportation Plan (LRTP) actively sought the opinions, ideas, and comments expressed by the public, elected officials, the Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders to guide the development of this plan. The project team thanks and wishes to recognize all of the MSB residents and stakeholders who took the time to participate in activities and meetings held throughout the LRTP development process. This LRTP better reflects the MSB's current and future transportation needs and solutions as a result of your efforts.

This LRTP was funded by the MSB and the DOT&PF and developed through the efforts of the MSB staff, DOT&PF staff and a consultant team from HDR.

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department

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2035 Matanuska-Susitna Borough Long Range Transportation Plan

APPROVED: DECEMBER 5, 2017

The Matanuska Susitna Borough (MSB) Planning Department is pleased to present the 2035 MSB Long Range Transportation Plan (LRTP). The 2035 MSB LRTP is an update to the currently adopted 2007 MSB LRTP and Official Streets & Highways Plan (OSHP). Since Alaska's dramatic fiscal changes have continued due to the falling price of oil, the MSB has responded accordingly with an LRTP that incorporates fiscal constraints. Part of this response included the removal of many megaprojects from Alaska's Statewide Transportation Improvement Program (STIP), such as the Knik Arm Crossing ($2 billion), which would connect downtown Anchorage to Port MacKenzie in the borough. The MSB worked diligently with Alaska DOT&PF Central Region to reflect this linkage change in the LRTP's traffic demand modeling (TDM) efforts, which impacts socioeconomic impacts and trip generation throughout the Borough, as well as the travel in and out of Anchorage. All of these efforts are the product of an invaluable coordination effort between MSB and the Alaska DOT&PF Program Development Division.

In addition to state and local changes, the signing into law of the Fixing American's Surface Transportation (FAST) Act in December 2015 resulted in many positive changes for federal transportation funding. States can now look forward to continuous funding for Fiscal Years 2016 – 2021, including grant opportunities for local governments such as the Mat-Su Borough. By putting the Mat-Su's transportation policies through a rigorous public process, the 2035 MSB LRTP sets the stage for future federal grant opportunities right here in the Valley. After over 3 years of discussion, analysis, and consultation with Alaska DOT&PF, the MSB has produced a document that clearly outlines the combined goals of the Mat-Su for both DOT&PF- and MSB-owned surface transportation, including:

- Improve Transportation & Land Use Connection
- Provide Transportation Choices
- Improve Connectivity
- Improve Mobility
- Make Transportation Safer
- Support Economic Vitality
- Enhance Environmental Quality

As the Mat-Su continues to grow, we look forward to furthering the relationship between DOT&PF, the Mat-Su Borough, and the cities of Houston, Palmer, and Wasilla when implementing sustainable solutions to our transportation system. To accomplish this task, the Alaska DOT&PF has allocated over $695,000 in federal funding to facilitate partnerships, increase public participation, and fill data gaps to aid in better decision-making by appointed and elected officials.

This plan has received feedback from state and borough transportation staff, the Transportation Advisory Board, the Planning Commission, numerous citizens, technical experts, and policy makers. We believe this plan represents a realistic view on a wide range of issues, and is a document we can rely on to guide the borough's transportation planning, construction and maintenance for the next 20 years.

Thanks to all of you who participated in this 2035 Matanuska-Susitna Borough Long Range Transportation Plan.

Respectfully,

Eileen Probasco
Director of Planning and Land Use
Matanuska Susitna Borough

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Abbreviations

ARRC	Alaska Railroad Corporation
ATV	All-Terrain Vehicle
CAC	Citizen Advisory Committee
CATS	Chickaloon Area Transit System
CIP	Capital Improvement Program
DOT&PF	Alaska Department of Transportation and Public Facilities
DPW	MSB Department of Public Works
FAST	Fixing America's Surface Transportation
FHWA	Federal Highway Administration
HSIP	Highway Safety Improvement Program
KAC	Knik Arm Crossing
LRTP	Long Range Transportation Plan
MAP-21	The Moving Ahead for Progress in the 21st Century Act
MASCOT	Mat-Su Community Transit
MOA	Municipality of Anchorage
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSB	Matanuska-Susitna Borough
NHS	National Highway System
ORV	Off-Road Vehicle
OS&HP	Official Streets and Highways Plan
PBPP	Performance-based Planning and Programming
PHAC	Parks Highway Alternative Corridor
ROW	right-of-way
RSA	Road Service Area
RTPO	Regional Transportation Planning Organization
SRTS	Safe Routes to Schools
STIP	Statewide Transporation Improvement Program
TAC	Technical Advisory Committee
TDM	Transportation Demand Modeling
TSM	Transportation System Management
UAA	University of Alaska Anchorage

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Chapter 1 Introduction

The Matanuska-Susitna Borough (MSB) developed this Long Range Transportation Plan (LRTP) in coordination with the Alaska Department of Transportation and Public Facilities (DOT&PF) to help guide transportation solutions, improvements, funding decisions, and policy development by the MSB and the State of Alaska both in the near and long term through 2035. Development of this LRTP included significant and useful input from the public, city and agency staff, and other stakeholders. This LRTP update process provided an opportunity for everyone who lives, works, or travels though the MSB to communicate their ideas about needed transportation improvements. The purpose of this plan is to identify and communicate the MSB's highest transportation priorities.

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Geographic Setting

The MSB lies in the heart of South-central Alaska, encompassing more than 24,000 square miles (about the size of the State of West Virginia) of valleys, mountains, lakes, rivers, and streams. The MSB includes portions of the Chugach Mountains to the Southeast; portions of the Alaska Range to the northwest; and essentially the entire Talkeetna and Clearwater Ranges in its interior. The Municipality of Anchorage, upper Cook Inlet, and Knik Arm delineate the MSB's southern boundary.

Legal Requirements

Established in 1964, the MSB is a second-class borough. Its powers are granted by the State of Alaska through Alaska Statute 29, Municipal Government, and include Title 29.40.30, Comprehensive Plan. Transportation planning is identified as a key element of the MSB's comprehensive planning process.

The MSB established a more formal approach to transportation planning when it adopted its Transportation Planning and Programming Process policy in February 1993. This policy provided guidance that led to the development of the MSB's first LRTP in 1997 and its 2007 LRTP update. That guidance is the basis for the current effort and provides a framework to plan for a 20-year regional, multimodal transportation system. This LRTP must consider needed transportation improvements based on changing socioeconomic, population, and demographic trends. The transportation element of adopted Community Comprehensive Plans has been considered and incorporated into the development

of this Borough-wide transportation plan within the parameters of the Fiscal Constraint Element of the LRTP. Adopted LRTPs are incorporated into the MSB's Comprehensive Plan.

The MSB is on the cusp of meeting the requirements to become a designated Metropolitan Planning Organization (MPO). An MPO is a federally mandated policy organization that oversees transportation planning within the designated urbanized area. MPOs are required for all urbanized areas (a geographic area that has 50,000 or more in population and a population density of greater than 500 persons per square mile) as determined by the U.S. Census. Part of the MSB is expected to meet these criteria after the 2020 U.S. Census and the Borough will establish an MPO at that time. It is too early to identify the exact MPO boundaries but it will likely encompass the historic MSB Core Area, which includes the Cities of Palmer and Wasilla and the unincorporated areas in between and along their margins.

Once the MPO is established, a fiscally constrained LRTP to address the transportation needs within the designated MPO will be required. The LRTP will guide the MPO planning process and future funding decisions. There is more discussion of MPO requirements in Chapter 5, under Transportation Governance.

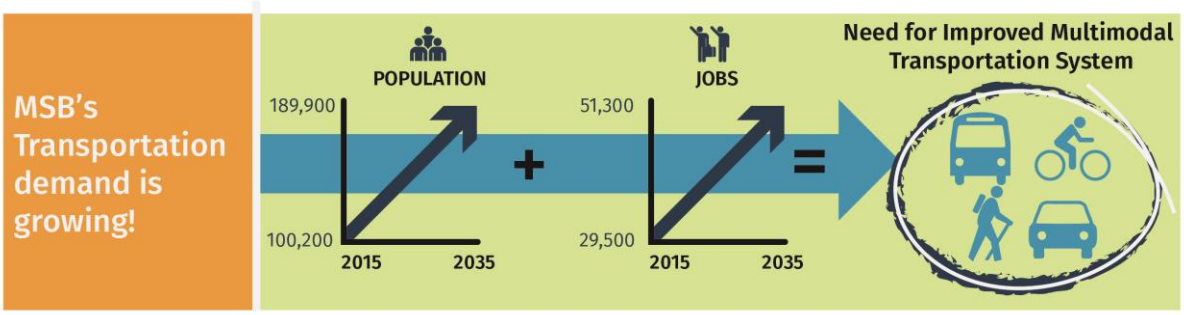
Why Update the Plan?

The MSB last adopted an LRTP in 2007. Since then, many changes have affected the MSB's transportation system, and changes will continue to occur over the next 20 years. The transportation system needs to grow and adapt to changing employment and demographic patterns. At the same time, there are substantial financial challenges that limit the ability to fund new transportation facilities and maintain existing ones. This LRTP update addresses these new conditions and helps ensure that the transportation system meets the existing and future transportation needs.

The purposes of this LRTP are to:

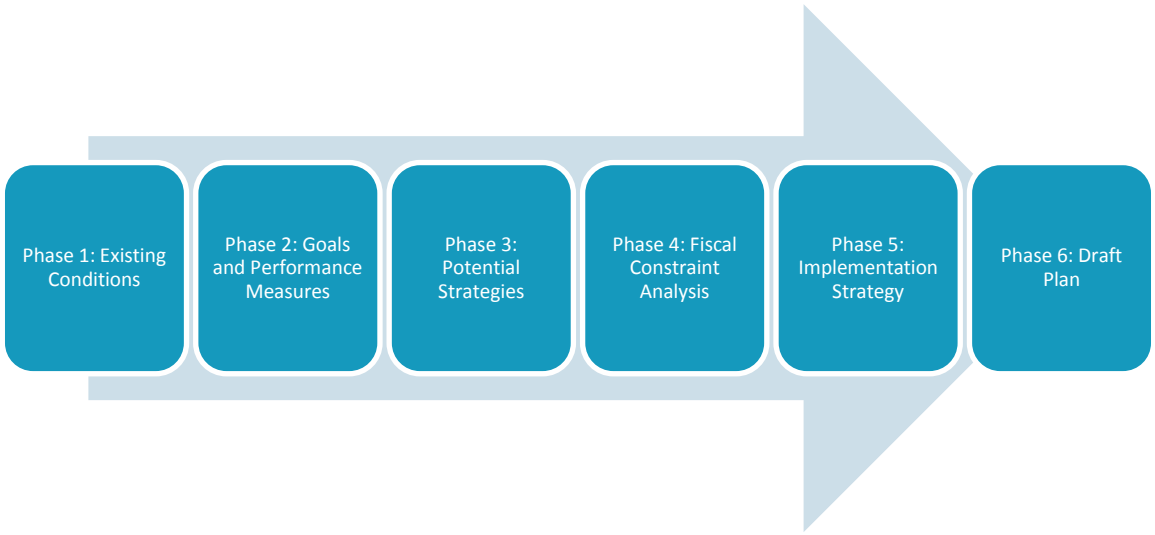
- Establish community goals for the MSB transportation system;
- Plan and recommend strategies for all modes of travel, including personal automobiles, bus/transit, bicycles, pedestrians, freight, rail, marine, and aviation;
- Develop and analyze a range of improvements that address identified mobility, safety, and accessibility needs;
- Develop a prioritized, fiscally constrained list of roadway improvements to be completed through 2035; and

- Develop a short-term implementation strategy.



Planning Process

The planning process used to develop this LRTP is shown below.



Organization of the Plan

This LRTP is organized into the following 7 chapters:

Chapter 1: Introduction	• Provides an introduction to the LRTP, the requirements for planning, and an overview of the plan.
Chapter 2: Performance Based Long Range Transportation Planning and Performance Measures	• Provides an overview of the performance based planning process, the MSB LRTP Goals, Strategies, and Conceptual Performance Measures.
Chapter 3: Public Engagement	• Describes the process used to engage the public and other stakeholders in this LRTP.
Chapter 4: The MSB Today	• Describes demographic conditions and an overview of MSB transportation modes including roadway, transit, aviation, rail, marine, bicycle, and pedestrian systems.
Chapter 5: Future Challenges and Risks	• Summarizes challenges and risks that the MSB transportation system will face over the next 20 years.
Chapter 6: Recommendations	• Describes the fiscal constraint analysis along with short-, medium-, and long-term roadway, transit, bicycle, and pedestrian, and other recommendations.
Chapter 7: Implementation Strategy	• Describes the short-term actions to be taken by the MSB to implement the LRTP recommendations.

Appendix A describes the existing demographic conditions and transportation systems in more detail. It also provides additional detail about the LRTP recommendations and environmental considerations.

Appendix B summarizes the public engagement activities held throughout the LRTP update process and comments received during the planning process.

Chapter 2 Performance-Based Long Range Transportation Planning

In recent years, transportation agencies have been increasing their use of performance management, which is "using performance data to support decisions to help achieve desired performance outcomes.[1]" The MSB and DOT&PF are starting to use a Performance-based approach to transportation planning to improve decision making and to ensure we are using our scarce financial resources wisely.

This plan takes a Performance-Based Planning approach to improve transportation decision-making, and to help make the best use of scarce financial resources.

What is Performance-Based Long Range Transportation Planning?

According to the Federal Highway Administration (FHWA), "Performance-based planning and programming (PBPP) refers to the application of performance management within the planning and programming processes of transportation agencies to achieve desired performance outcomes for the multimodal transportation system. PBPP attempts to ensure that transportation investment decisions are made – both in long-term planning and short-term programming of projects – based on their ability to meet established goals for improving the overall transportation system. Furthermore, it involves measuring progress toward meeting goals, and using information on past and anticipated future performance trends to inform investment decisions.[2]"

This plan follows the guidelines put forth by FHWA to allow for performance-based planning by establishing a strategic direction, goals and objectives, and performance measures (see Figure 1). Data-based analysis, public engagement, and a concerted effort between programming and implementation results in a plan that can accomplish goals and make transportation funding decisions efficient and effective.

[1] Federal Highway Administration. September 2013. Performance-Based Planning and Programming Guidebook. Report FHWA-HEP-13-041, p. 1. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/pbppguidebook.pdf
[2] Ibid.

Figure 1. Performance-Based Planning Framework

Benefits of Performance-Based Planning

In PBPP, each step in the process is connected to the next to ensure that goals translate into specific measures. This forms the basis for identifying and analyzing potential improvement strategies for the LRTP. In the end, recommendations are based on expected performance returns. Benefits of PBPP include:

- **Improved Investment Decision Making:** PBPP allows for transparent discussion about the public's desired outcomes and the strategic direction the MSB should take based on measurable targets. It provides important information for the decision-making process and helps decision makers consider the multimodal transportation system.
- **Improved Return on Investments and Resource Allocation:** In PBPP, information about past performance is used to make better decisions about the best future use of available funding. Investing in improvements that will make the most difference, increases the return on investment and improves allocation of scarce resources.

- **Improved System Performance:** PBPP encourages planners to evaluate and recommend improvements to decision-makers based on anticipated system-wide, measureable effects which are tied to goals; rather than on a project by project basis.
- **Increased Accountability and Transparency:** The PBPP provides clear and easily understood information about how transportation dollars were spent and the resulting performance improvement of the expenditures.
- **Demonstrates the Link between Funding and Performance:** With PBPP, it is easier to connect results with the money spent. This helps set expectations and demonstrates the effectiveness and need for additional funding.

National Goals

The "*Moving Ahead for Progress in the 21st Century Act*" (MAP-21), signed into law in 2012, was a 2-year funding and authorization bill to govern United States federal surface transportation spending. It 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 "*Fixing America's Surface Transportation (FAST) Act*," passed in 2015, continues MAP-21's overall performance management approach.

The national goals, as outlined in Section 150(b) of MAP-21 and continued in the FAST Act, include:

- **Safety –** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure condition –** To maintain the highway infrastructure asset system in a state of good repair.
- **Congestion reduction –** To achieve a significant reduction in congestion on the National Highway System (NHS).
- **System reliability –** To improve the efficiency of the surface transportation system.
- **Freight movement and economic vitality –** To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental sustainability –** To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced project delivery delays –** To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies work practices.

Figure 2 shows how the elements of this LRTP fit within each of the national planning goals.

Figure 2. National Planning Goals Addressed by MSB 2035 LRTP

Safety	• Establishes goals and strategies to improve the safety of the transportation system for all users • Includes crash data • Identifies projects eligible for the Highway Safety Improvement Program (HSIP)
Infrastructure Condition	• Identifies bridges that are structurally deficient and functionally obsolete • Identifies a strategy to keep pavement quality and bridge condition at acceptable levels
Congestion Reduction	• Establishes a mobility goal and strategies to reduce congestion • Evaluates existing roadway congestion levels • Evaluates future roadway congestion levels • Identifies projects to address current and future congestion issues • Identifies ways to increase use of non-automobile modes of transportation
System Reliability	• Establishes a goal and strategies to improve connectivity and mobility • Identifies projects to improve system reliability
Freight Movement and Economic Vitality	• Establishes a goal and strategies to improve the local economy • Identifies projects to improve freight movement and access to jobs
Environmental Sustainability	• Establishes a goal and strategies to enhance the environment and quality of life • Identifies natural and human environmental constraints and environmental justice areas • Considers environmental factors when identifying recommendations
Reduced Project Delivery Delays	• Includes high-level environmental constraint information (such as wetlands, floodplains, and minority populations) for use in future coordination with resource and permitting agencies

MSB Goals, Strategies, and Performance Measures

The MSB has identified goals, strategies, and performance measures to guide transportation decisions and assess the effectiveness of transportation investments over the next 20 years.

GOAL: a broad statement that describes a desired outcome

STRATEGY: a plan of action or policy to achieve a goal

PERFORMANCE MEASURE: a metric used to evaluate progress in meeting a goal or strategy

In developing goals, strategies, and performance measures, the following were considered:

- Federal, state, and local requirements and policies including MAP-21 and the FAST Act
- Changing conditions that could impact how the transportation system will perform over the next 20 years
- Comments and feedback from the public at large and MSB advisory groups

MSB Transportation Goals and Strategies

Transportation goals identify and describe what the community desires in their future transportation system. In developing the goals, the project team (MSB, DOT&PF, and HDR) heard feedback that transportation in the MSB is evolving. While the automobile has been the primary mode of transportation, residents expressed a focused interest in improving transit and active transportation options for all ages and abilities. This LRTP reflects the expanding vision of transportation in the MSB.

Expansion of transportation options in the MSB does not mean automobiles and roads will not be important. Surface transportation options will continue to be a vital part of the MSB transportation system. The goal is to provide a transportation system that serves the people who want to drive by providing access to employment, shopping, retail, and medical services, as well as serves people who choose or require alternatives to a personal vehicle. Based on input received from public workshops and meetings, as well as input from and research by the LRTP project team, the following goals were developed to reflect what our community wants their future transportation system to look like:

- Goal One: Improve Transportation and Land Use Connection
- Goal Two: Provide Transportation Choices
- Goal Three: Improve Connectivity
- Goal Four: Improve Mobility
- Goal Five: Make Transportation Safer
- Goal Six: Support Economic Vitality
- Goal Seven: Enhance Environmental Quality

The project team identified strategies to meet the challenge of developing an efficient, safe, multimodal transportation system. Each goal and strategy is discussed in greater detail below.

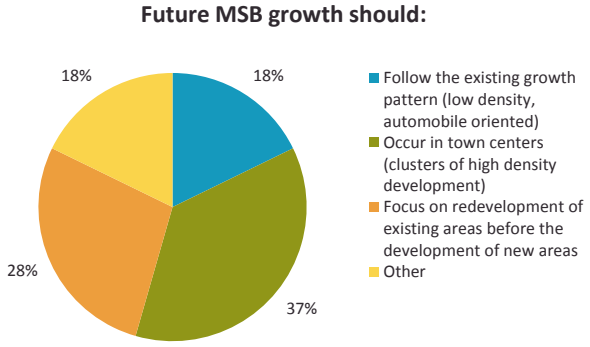
GOAL ONE: Improve Transportation & Land Use Connection

Transportation and land use are fundamentally connected. Everything that happens to land use has transportation implications, and vice versa.

Strategy: Update the MSB Comprehensive Plan

The MSB Comprehensive Plan was adopted in 1970 and has been updated several times since then; the most recently in 2005. The MSB Comprehensive Plan should be updated to reflect changed conditions in the MSB, changes in how residents view future growth in the MSB, and to link future growth better with transportation improvements. In the MSB LRTP *Tough Choices Survey*, only 18 percent of survey respondents indicated that future growth should follow existing growth patterns. Updating the Comprehensive Plan would allow residents from all over the MSB to provide input about their vision for future land use in the MSB and the land use tools that should be used to implement that vision, including land use changes that better reflect citizen's changing transportation priorities. For example, according to the *Tough Choices Survey*, specific issues the MSB should consider include:

- Develop incentives for transit corridors,
- Encourage mixed-use development [more conducive to walking], and
- Create development incentive nodes [which promote shorter trips, walking trips, and are easier to serve with transit].



Source: MSB LRTP *Tough Choices Survey*

Strategy: Continued Updates to Subdivision Regulations

As each update to the MSB Comprehensive Plan update is completed, the Subdivision Regulations (MSB Title 43) should be updated to reflect the Comprehensive Plan recommendations and be more reflective of transportation connectivity and modal needs.

Strategy: Continued Integration of the MSB Subdivision Construction Manual

The existing MSB Subdivision Construction Manual was adopted in 1991 and is updated as needed. The MSB needs to continue updating the manual to ensure new subdivisions are built according to current best practices, utilizing guidelines and standards to ensure that road standards are in compliance. In

addition to updating the manual, MSB Title 43 should also be updated to reflect these changes and integrate the manual's guidelines into plat reviews will ensure consistent enforcement of regulations.

Strategy: Create Transit Supportive Development

To support transit, higher residential and employment densities are needed. The MSB should pursue transit-supportive land uses within a quarter (1/4)-mile radius of either side of the identified mainline transit routes to develop the ridership base needed to support effective, sustainable transit service. The MSB should also encourage infill development along these corridors as practical.

Strategy: Strategic Access Development Plans

Strategic planning of the number and location of driveways and side streets (access development) is one point where land use and transportation collide. Strategic access development, particularly along arterial roads and highways, protect the public's investment by ensuring the functionality of the corridor. For example, arterial roads, such as the Bogard Road/Seldon Road corridor, are intended for mobility across longer distances.

Integrating land use and platting decisions consistent with the proposed strategic access development plans will help arterial corridors maintain mobility. The MSB should also consider strategic access development plans along existing and proposed arterial streets and highways to inform decision makers and the public of acceptable access points and to enforce access restrictions that protect the functionality of the road. An example of current strategic access development planning in the MSB is the current coordination between MSB and DOT&PF Central Region for the Parks Highway Access Development Plan (Big Susitna River Bridge through Denali State Park).

Strategy: Explore Remote Land Use Access & Infrastructure Issues

Much of the MSB is not accessible by road, so people have to fly, boat, ski, hike, or use a snow machine, off-road vehicle (ORV) or all-terrain vehicle (ATV) to travel to these areas. Popular public recreation lands often lack basic transportation infrastructure, such as designated parking areas and appropriate related wayfinding signage. This lack of infrastructure will often result in make-shift access areas. Access that is not planned, designed and constructed to approved standards can lead to negative environmental impacts, as well as potentially negative impacts on access infrastructure (aviation, marine or surface) and user safety. In addition to safety and environmental concerns, makeshift access that is not managed or maintained responsibly can lead to future questions of appropriate uses, trespass of private property, and illegal access.

GOAL TWO: Provide Transportation Choices

Provide transportation choices that allow people more effective travel options for a variety of purposes.

Strategy: All-Terrain Vehicle (ATV)/Off-Road Vehicle (ORV) Use Policy

ATV/ORV use within the MSB is increasing. These vehicles provide valuable transportation service for remote area access and recreation. However, these vehicles often travel along road right-of-ways in more developed areas and at times compete with other users. Addressing the travel needs of ATV/ORVs and other users to create a safe transportation system for all users should be considered when making long-term transportation planning decisions in the MSB. Decisions regarding how to incorporate or manage use of ATV/ORVs should be addressed through development of area-specific mode use policies.

Strategy: Develop a Long-Range Transit Vision

Currently, there is no coordinated long-range vision for transit in the MSB. The project team heard from stakeholders about the desire for commuter bus service from Knik Goose Bay Road to Anchorage. Stakeholders also identified a desire for additional fixed-route transit in the MSB Core Area. Such service could start as an initial bus route between Palmer, Wasilla, and the Mat Su Regional Medical, adjacent health care facilities and the Mat Su College (see Figure 3). Stakeholders also identified future needs for additional routes (see Figure 4) in the future to provide more coverage of the Core Area.

Figure 3. Vision for New Fixed Route Bus Service

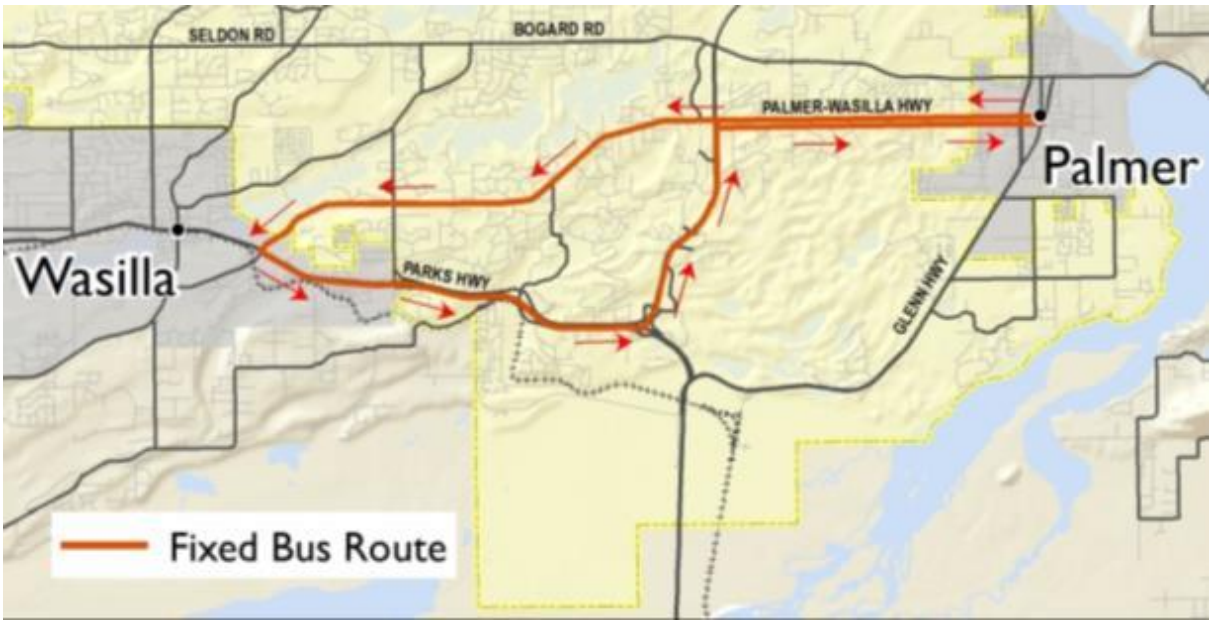
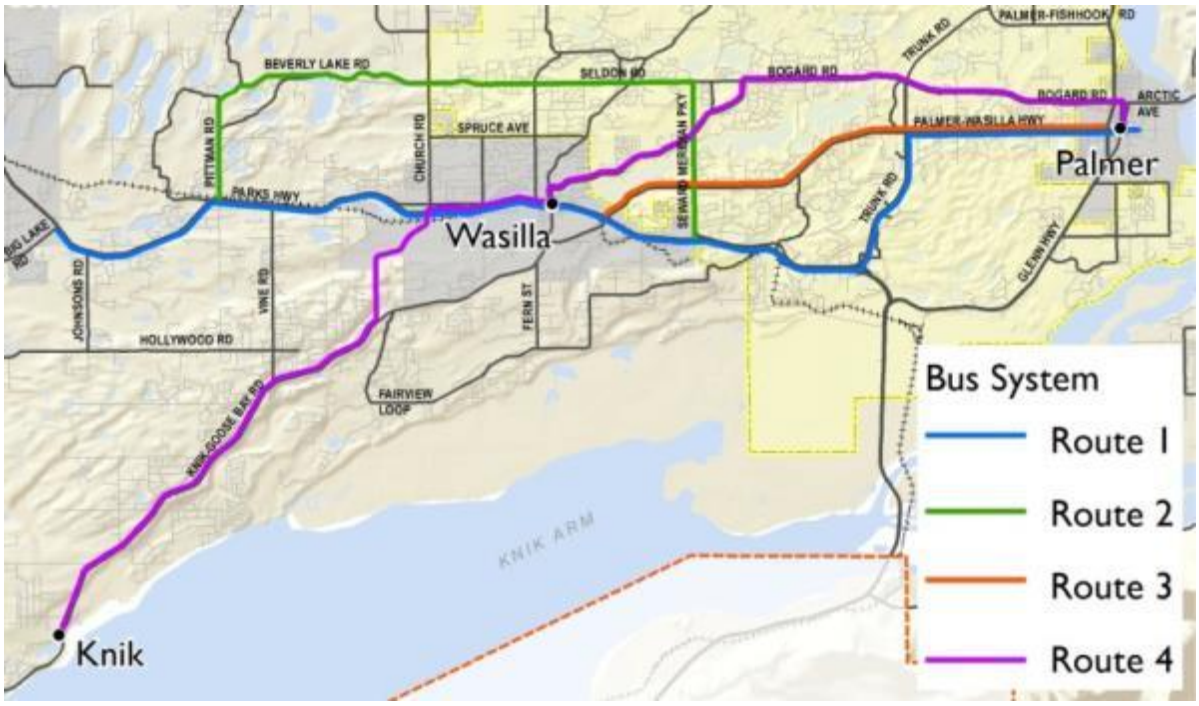


Figure 4. Potential Expanded Bus Route System



Strategy: Support Improved Passenger Rail Service

Commuter rail between Anchorage and the MSB has been studied for many years and continues to be of great interest. As population continues to increase in south central Alaska, improved commuter options such as rail should be considered in long-term transportation planning decisions.

Strategy: Expand Vanpools Program

Vanpools are similar to carpools, except they typically involve more people traveling in a larger vehicle. Vanpooling allows people to share the ride and expenses associated with commuting. The Municipality of Anchorage's (MOA) Public Transportation Department offers and administers the Share-A-Ride vanpooling program, and many program participants are MSB residents who commute to Anchorage or Joint Base Elmendorf-Richardson. The existing program does not allow vanpools that start and end within the MSB, although the MSB could organize a program to handle such intra-borough trips. Expanding the existing vanpool program would allow more residents who commute from the MSB to Anchorage to participate.

Strategy: Consider Additional Demand Response Service

Demand response service is a non-fixed-route transit system. This system operates similarly to a taxi, but carries more than one fare at a time. Stakeholders indicated they would like more demand response service in the MSB, including longer hours, more coverage, and shorter wait times. Demand response service is likely to be more popular in the future as the MSB population grows and ages, as seniors tend to make up a significant portion of the users. The MSB and transit providers should work together to identify how additional demand response service could be provided and funded. Demand response service can be provided by a transit provider. New and emerging technology allow services such as UberPOOL[3] and Lyft Line[4] to provide a similar service.

Strategy: Encourage Ride Sharing Services

Providing transit service in the MSB is challenging because of its geographic size and low population density. Traditionally, ride sharing or carpooling involved the sharing of vehicles by passengers to reduce costs, vehicle trips, traffic congestion, and automobile emissions. In recent years, ride sharing is the term used for companies that offer for-hire, for-profit driving services (like Uber or Lyft). These companies connect riders with noncommercial drivers who provide rides for hire in their private vehicles. Companies use an internet-based platform to match drivers and riders.

These services are attractive because they provide door-to-door service, making them more convenient than buses and cheaper than taxis. They can also help address gaps in the transit system. For example, they can provide a late night option when transit is less frequent or not provided. The MSB should

[3] *What is UberPOOL?* https://help.uber.com/h/5d3fa7d0-9831-4ead-b4f4-0299eb443ea2
[4] *Lyft Line* https://www.lyft.com/line

contact ride sharing providers to learn more about what it would take to provide these services in the MSB.

Active Transportation refers to self-propelled, human-powered modes of transportation, such as biking, walking, non-mechanized wheel chairing, or even snowshoeing/skiing.

Strategy: Develop an Active Transportation Master Plan

The goal of an Active Transportation Master Plan is to make it easier to walk and bike to work, school, recreation, or other locations in the MSB. The plan would do so by creating a vision for the bicycle and pedestrian system and identifying recommendations to implement that vision.

Strategy: Adopt a Policy Requiring Bike/Pedestrian Improvements near/along Transit Corridors

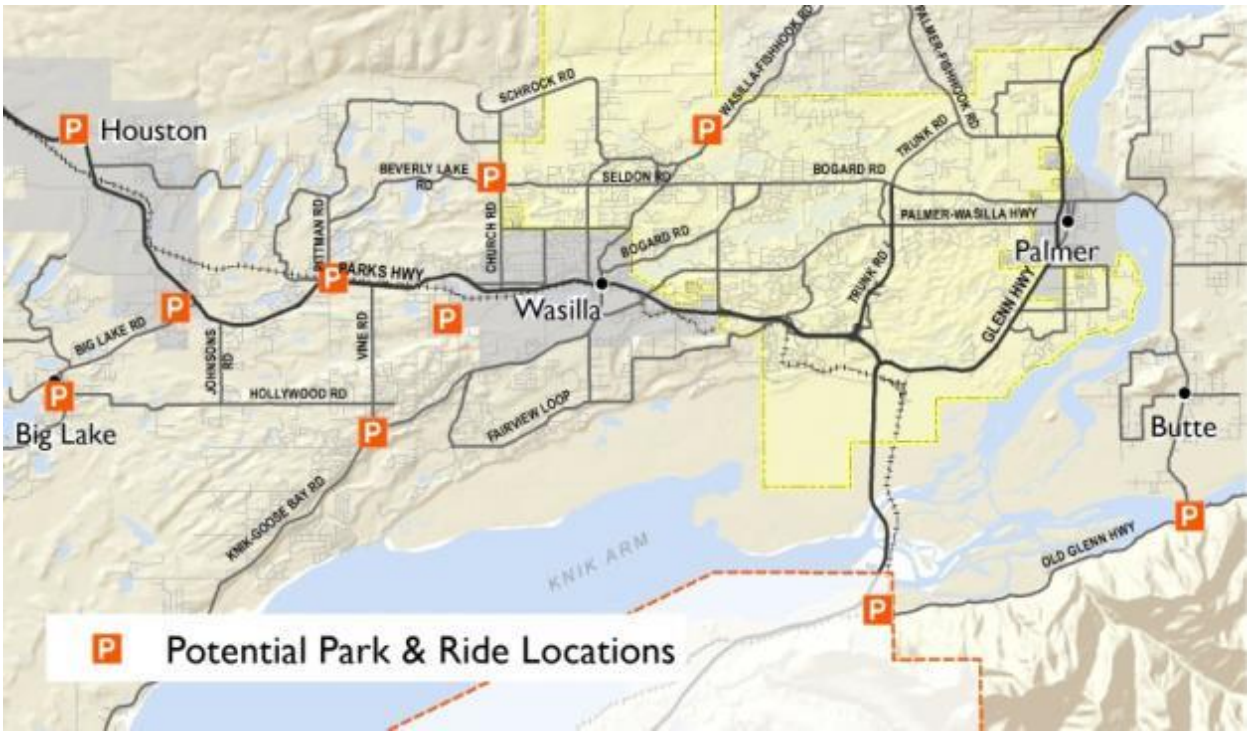
Transit ridership depends on having safe access to transit facilities. People need to be able to safely get to and from the bus stop with appropriate facilities such as sidewalks, ramps, and crosswalks. The MSB should develop a policy that encourage multi-modal investments near transit corridors to increase and improve safe access to transit stops and facilities.

Strategy: Develop Park and Ride Facilities

A park and ride facility is a parking lot where commuters leave their vehicles and take transit, vanpool, or carpool with others for the remainder of their trip. During the workshops and based on public input, new park and ride facilities were suggested at the following locations (see Figure 5):

- Houston
- Downtown Big Lake
- Big Lake/Parks Highway
- Church/Seldon Roads
- Parks Highway/Pittman Road
- Knik Goose Bay /Vine Roads
- Wasilla Fishhook Road near Shaw Elementary School
- Old Glenn Highway/Knik River Road
- New Glenn/Old Glenn Highways

Figure 5. Potential Park and Ride Locations



Park and ride construction should be incorporated into major roadway improvements and coordinated with transit services. MSB, state, and local transportation professionals should develop a prioritized list for future park and ride improvements. Informal park and ride locations may also be identified by working with commercial property owners and businesses who may want to encourage commuters to park in their lots in exchange for potential business.

Strategy: Improve Awareness of Transportation Choices

Some people drive because it is familiar to them. The MSB should work to increase people's knowledge, and in turn comfort level, with other modes of transportation. While there are many ways to promote awareness, two ways supported by stakeholders include:

Bus Training

For people who do not currently use transit, taking a bus can be daunting. Many people have unanswered questions about how to pay, how to determine which route to take, how to find the bus schedule, and other issues. Training that educates people about public transportation options, how to ride the bus, and how to plan trips can lead to increased transit ridership as people become comfortable using the bus system. Bus training can be offered relatively inexpensively, on a regular or as-needed basis.

Bike to Work and School Day Initiatives

Bike to Work and Bike to School Day initiatives encourage people to use alternative transportation. These events often have incentives such as treat stations and coffee stops to

encourage people to ride their bikes. In many communities, cyclists who ride can register to win special prizes. These initiatives are supported by many different organizations, including local bicycle stores, restaurants, local governments, and others. Anchorage hosts its annual Bike to Work Day in May. In 2016, 3,703 bike riders were counted on key roads and trails.

Strategy: Establish a Public Facility Siting Policy

The locations of new public facilities are selected for a variety of reasons, including the availability of land, proximity to other land uses, cost of site development, and ease of vehicle access. Too often, however, the ability to access a public facility by transit is not one of the considerations. A public facility siting policy would require the MSB to evaluate the ability of existing transit providers to reach the proposed site of a new facility. This policy would not require new public facilities to be built in proximity to transit; rather, it would allow decision makers to make informed decisions regarding how each facility would (or would not) be accessed by transit users. Some facilities, such as public libraries, would benefit from being accessible by transit, while others, such as landfills and water treatment plants, would have little benefit. The MSB's *Build Out Analysis* (2009) provides a solid foundation for development of this policy.

Strategy: Develop a Complete Streets Policy

A Complete Streets Policy encourages the development of roadways that are designed and operated to safely and comfortably accommodate users of all ages and abilities and modes, including, but not limited to, motorists, transit and school bus riders, cyclists, pedestrians, and emergency vehicles. A Complete Street is not a specific design; rather it is a means of developing a design to fit the community context of the road. Complete Streets allow people to comfortably choose transportation options other than automobiles. This policy can improve the efficiency and capacity of existing roads by making it easy and safe for users to switch modes.

Why Complete Streets?

According to AARP, 47 percent of older Americans say it is unsafe to cross a major road near their home.

Source: Planning Complete Streets for an Aging America, AARP Public Policy Institute

GOAL THREE: Improve Connectivity

Connectivity is the practice of incorporating redundancy throughout a roadway network as a strategy for accommodating increased traffic. That is, there are numerous ways to travel from Point A to Point B.

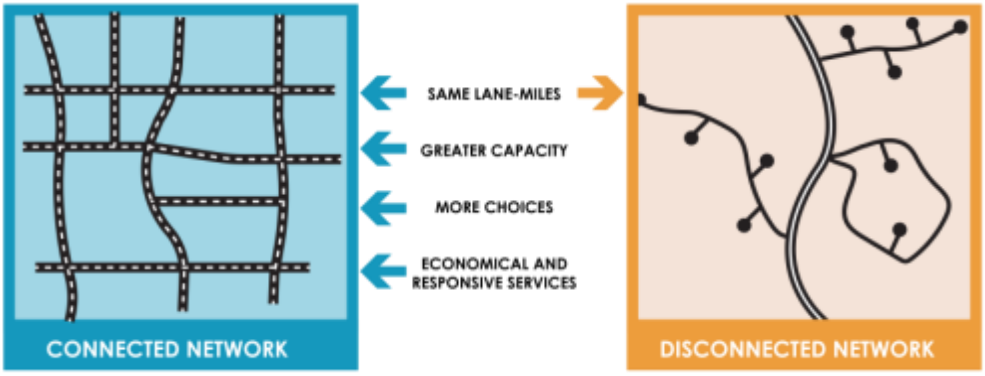
Better connectivity can improve mobility, accessibility, reduce traffic congestion, and reduce the need to improve arterial roadways. A poorly connected street or pedestrian network encourages people to drive, creates longer trips, and provides few alternative routes. It is recommended that the MSB work to create an action plan to improve connectivity throughout the system to better accommodate increased travel demand. Improved connectivity can reduce the need for additional lanes to existing facilities, and reduces the use of residential streets as de facto collector roads.

Strategy: Conduct a Roadway Network Connectivity Analysis

A roadway network connectivity analysis looks at the number of connections serving origins and destinations. Good connectivity provides multiple ways to travel between Point A and Point B. Improved connectivity can improve mobility and accessibility, reduce traffic congestion, and reduce the need to increase capacity by lane additions on arterial roadways. A poorly connected street network creates longer trips, provides few, if any, alternate routes, and concentrates traffic volumes on a limited number of arterial roads. The results from a connectivity analysis can

Benefits of connectivity include:

- Shorter, more direct routes
- Lower vehicle speeds
- Lesser crash severity
- Local trips remain on local roads
- More alternative routes
- Improved emergency access and response times
- More efficient utility connections, trash routes, and transit routes
- Travel is less concentrated, meaning less congestion.



be used to identify strategic connections that should be built and corridors that should be preserved.

Strategy: Establish a Subdivision Connectivity Policy

A Subdivision Connectivity Policy in concert with updated subdivision codes and strategic access development can establish a minimum level of street connectivity to create connected neighborhoods. The coordinated policy improvements would lay the foundation for a better connected roadway network that would provide safer access to collector and arterial roads and encourage multi-modal transportation options. Subdivision street connectivity affects the transportation pattern because it allows local roads to be used for local trips, reducing the number of trips made on arterial roads. Residents benefit because their trips are often more efficient, which in turn reduces travel time. This policy, and the updated subdivision code, should address the need for developers to provide collector roads as new subdivisions are built. This policy should address the need for corridor preservation and provide clear policies on the vacation of Section Line Easements and MSB road rights-of-way and road easements. Such vacations will not occur unless the requesting party provides an equal or better replacement for these public assets.

Strategy: Establish Non-Motorized Design Requirements on All Major Collector Roads and Above in the MSB Core Area

A design manual policy requiring sidewalks or separated pathways on all roads in the MSB Core Area that are functionally classified as major collectors or higher would help expand the multimodal network, as well as increase accessibility to transit facilities and improved pedestrian safety. The past 20 years has seen the development of many miles of roadside trails in the MSB Core Area, making it possible to ride on trails or sidewalks from the Butte through Palmer to Wasilla, all the way to Big Lake and Willow. Connecting gaps in the existing network and expanding this network will increase multi-modal transportation choices.

GOAL FOUR: Improve Mobility

Transportation infrastructure exists to improve mobility; i.e., the ability to move around freely and easily. A road that is full of vehicles or has infrequent transit service reduces mobility because it increases travel time.

Strategy: Implement Projects and Programs that Reduce Congestion and Travel Delays and Improve Travel Times

Because automobiles are the primary mode of transportation in the MSB, it is important to have a roadway system with minimal delays, short travel times, and reduced congestion. As part of this LRTP, roadway improvements have been identified to improve mobility over the next 20 years. Specific roadway improvements are described in Chapter 6.

Strategy: Develop an Asset Management Program

FHWA's updated Asset Management Position Paper[5] defines asset management as follows:

[5] FHWA. 2005. Asset Management Position Paper. https://www.fhwa.dot.gov/infrastructure/asstmgmt/amppops.cfm

> Asset management is concerned with the entire life cycle of transportation decisions, including planning, programming, construction, maintenance, and operations.

The MSB and state's Asset Management Programs should be updated and formalized to ensure that all aspects of managing transportation investments are included. Annual maintenance, pavement preservation, and bridge inspections are important aspects, but so are responding to changes in adjacent land use by reevaluating access requirements and programming funds to upgrade substandard facilities. Effective asset management extends the life and function of the public investment in transportation facilities. Within the MSB, asset management crosses several administrative boundaries, including Planning, Platting, Code Enforcement, Capital Projects, Right-of-Way, and Public Works. The MSB should take an integrated approach to its Asset Management Program and include a public awareness component.

Strategy: Expand Wayfinding Strategies for Transit and Trails

Wayfinding refers to maps, signs, graphics, and other information that helps people navigate from place to place. Wayfinding is often used on trail and transit systems to increase people's comfort in using the system. Wayfinding increases mobility by giving people information they can use to effectively move about the system. To determine the most appropriate wayfinding strategy, the MSB should consider a Wayfinding Plan as part of future transit and active transportation plans.

Strategy: Improve Traffic Signal Coordination

The number of traffic signals in the MSB has grown significantly in the last 10 years. More are planned, and signal coordination is a growing concern to ensure smooth traffic flow, especially through Wasilla. Coordinated traffic signals (two or more traffic signals timed to work together) helps cars move through a corridor with a minimal number of stops. Traffic signal coordination is sometimes called a "green wave" because drivers are able to go through a series of green lights.

To work out details for long-term management and cost sustainability, the MSB should work with DOT&PF, the City of Wasilla, and the City of Palmer to develop a Traffic Signal System Management & Maintenance Program. This program would review the existing signal timing and traffic conditions to develop recommendations for improved signal timing as well as to propose a management program with roles and responsibilities of each government entity.

GOAL FIVE: Safety – Make Transportation Safer

Crashes happen on any transportation system, but the MSB can take actions to reduce the number and severity of crashes.

Strategy: Improve Transportation Safety Education

The MSB should work with DOT&PF, law enforcement, and others to encourage safe driving, biking, and walking practices.

Strategy: Continue the Safe Routes to School Program

The MSB should continue to develop and expand the Safe Routes to School Program in coordination with the MSB School District. They should conduct assessments of the remaining schools and work with the School District to implement the recommendations.

Strategy: Continue Support of Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) identifies and funds highway safety projects. The MSB should work with DOT&PF to identify and implement HSIP projects to address high-accident locations within the MSB.

Strategy: Develop and Implement Access Development Plans for all Major Collectors and Arterial Roadways within the MSB

Access control improves safety by limiting traffic conflict points. It also protects the public investment in these major roadways by ensuring their long-term functionality.

Strategy: GOAL SIX: Support Economic Vitality

Improve Access to Jobs for Both Residents and Employers

To support the MSB's continued economic development, people need to be able to access jobs, conduct business, and facilitate the movement of goods and services. Improving multi-modal access to jobs should help more people find employment and give employers access to a larger pool of potential employees.

Strategy: Improve Access to Education for All Students within the MSB

An educated population is important for the future of the MSB. Today's youth need access to education to develop the skills they will need when they enter the workforce. A transportation system that allows students to travel easily and efficiently between home and school has many benefits. The system needs to address access of college and high school students to and from Mat Su College, the University of Alaska Anchorage's (UAA's) Eagle River Campus, and UAA's main Anchorage campus. Poor access creates additional trips, as students have to be driven either in a car or on a school bus. Time spent in transit also takes time away from a student's ability to study, rest, and play. The MSB should work with

the MSB School District, UAA, and private colleges to identify ways to improve transit and access to existing schools and establish access and transit guidelines for locating future schools.

Strategy: Identify and Design Freight Routes

Freight routes provide for the safe and efficient movement of freight. A freight route should safely accommodate freight transportation and require that future improvements to these routes be developed with freight vehicles in mind. Freight routes should consist primarily of major collector roads or above, and should avoid residential areas or other incompatible land uses when possible.

Strategy: Continue Aviation Land Use Policy Development

MSB's Aviation community is strong, vibrant and an important economic engine with over 200 private and public airports providing commercial and private operation throughout the MSB. The recent *Economic Contributions of MSB Airports* Study, completed as part of the MSB Regional Aviation System Plan, quantified these positive economic impacts. Facilitating land use policy development for current and future aviation needs in the MSB should be continued to ensure the long-term economic viability of aviation within the MSB.

Strategy: Encourage the Continued Development of Port MacKenzie and the Completion of the Port MacKenzie Rail Extension

Port MacKenzie and the Port MacKenzie Rail Extension have the potential to provide significant potential economic benefit to the MSB and its residents. The MSB should pursue the continued development and completion of these projects.

GOAL SEVEN: Enhance Environmental Quality

Many people live in the MSB because of its natural setting. They need a transportation system that protects and enhances the environment while preserving quality of life.

Strategy: Support Use of Alternative Fuels and Technologies

The MSB should support the use of alternative fuels and technologies being developed and implemented in order to reduce the impact of transportation (e.g., air quality) on the environment.

Strategy: Coordinate with Resource Agencies on Projects

The MSB should coordinate with resources agencies such as the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Alaska Department of Natural Resources, and Alaska Department of Fish and Game during the initial stages of any transportation improvement project to identify environmental issues of concern. With early consultation, there is a greater probability the project can be developed in a way that minimizes, mitigates, or avoids adverse environmental effects.

Strategy: Promote TDM/TSM Measures

Transportation Demand Management (TDM)/Transportation System Management (TSM) measures reduce demand or redistribute travel demand. These tools can help reduce traffic congestion and vehicle emissions. Examples of TDM/TSM include carpooling incentives and flexible work hours. The MSB should promote TDM/TSM to increase the efficiency of the existing transportation network.

Strategy: Review Roadway Design Guidelines to Promote Sustainability

The MSB should review roadway design guidelines to identify potential changes that would improve the sustainability of the road network and surrounding areas. This review should include but not be limited to floodway construction restrictions, consistency with current best practices, and area-specific design requirements as appropriate.

Strategy: Develop Green Streets Policy

Green Streets are an alternative to traditional storm drain systems that reduce the negative impacts associated with stormwater runoff. Developed to mimic the natural hydrology of an area, Green Streets use vegetative swales, trees, landscaping, and similar features to capture and treat stormwater runoff. A Green Streets approach is often a more cost-effective way to handle stormwater runoff. A Green Streets Policy would require the use of Green Street techniques to manage stormwater runoff from transportation facilities consistently with the function and setting of the road. This is also known as “Low Impact Development.”

Strategy: Develop Municipal Separate Storm Sewer System Program

The MSB will be required to implement a Municipal Separate Storm Sewer System (MS4) permit program once it reaches population thresholds as required by state and federal law. The MSB’s 2013 Stormwater Management Plan identified recommendations to implement this requirement with the key recommendation being the MSB serves as a clearinghouse with support from the Cities of Palmer and Wasilla, DOT&PF, ARRC, and others. This coordinated approach will facilitate a smooth transition to implementing the MS4 program since projects may cross several jurisdictional boundaries.

Strategy: Continue Fish Passage Culvert Replacement Program

The MSB should continue its very successful and aggressive replacement of culverts that impede salmon and fish passage. The MSB matches funds granted through the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, the Mat Su Salmon Habitat Partnership, and other conservation groups to replace failed culverts that impede the passage of salmon and other fish species. This program has significant environmental and economic benefits: improved fish habitat and passage help improve the MSB’s important sport, personal use, subsistence, and commercial fisheries. Properly sized culverts also improve flood water passage, which can result in less road damage during flood events. Culverts often need replacing because they are old and have failed or are the result of past practices that allowed the installation of insufficient or poorly designed culverts. The MSB’s review of new developments that impact streams and waterbodies should require that culverts or bridges are designed to adequately allow the passage of salmon and other fish species. In addition, the MSB should encourage DOT&PF to establish fish passage standards for state roads within the Borough.

Strategy: Improve Air Quality

Parts of the MSB have air quality concerns related to particulate matter (PM 2.5). PM 2.5 refers to fine particles (less than 2.5 micrometers in diameter) that pose a health risk because they can build up in the lungs. In the MSB, the primary sources of PM 2.5 are burning wood and car exhaust. If the MSB violates U.S. Environmental Protection Agency PM 2.5 air quality standards, there are many implications, including the potential loss of transportation funding.

Performance Measures

To implement the goals and strategies identified above, this LRTP identifies performance measures. These measures are also meant to be consistent with and help to implement state and national priorities. The conceptual performance measures described below in Table 1 are for discussion purposes. A concentrated effort to consult and coordinate with the Alaska DOT&PF to develop performance measures, performance targets and appropriate evaluation procedures should be completed as a short-term action item.

Future Performance Monitoring

For each performance measure, the MSB should establish targets to help assess their progress toward the goals. The MSB needs to monitor performance of the transportation system throughout the life of the plan. An annual or bi-annual performance report to MSB leadership and residents to communicate progress and share information about trends and challenges should be instituted. The MSB should re-evaluate established goals and performance measures (and targets once developed) as needed and determine if revisions are necessary.

Table 1. Conceptual Performance Measures

Goal	Conceptual Performance Measures
Goal One: Improve Transportation and Land Use Connection	Number of Mixed Use Developments Approved
	Percentage of School Children Who ride buses
Goal Two: Provide Transportation Choices	Number of Homes Within 0.25 Mile Walking Distance to Regional Attractors and Generators
	Number of Homes Within 0.25 Mile of Transit Corridor
	Designated Park and Ride Capacity and Use
	Number of Transit Boardings
Goal three: Improve Connectivity	Roadway Connectivity Score
	Sidewalk Connectivity Score
	Trail Connectivity Score
Goal Four: Improve Mobility	Level of Service on Select Roads
	Annual Hours of Delay
	Travel Time on Select Roads
	Transit Travel Times on Select Routes
Goal Five: Make Transportation Safer	Number of Fatalities
	Fatality Rate
	Number of Serious Injury Crashes
	Rate of Serious Injuries
	Accident Rate
	Number of Non-motorized Fatalities and Serious Injuries
	Miles of Roadway Pavement in Poor Condition
	Number of Deficient Bridges
Goal Six: Support Economic Vitality	Freight Volume on Highways
	Number of at-grade Rail Crossings
	Total Time from Capital Improvement Project Initiation to Construction
	Direct/Indirect $ from Aviation, Freight, Rail, Port, etc.
Goal Seven: Enhance Environmental Quality	Motor Vehicle Emissions (PM 2.5)
	Number of Impeded Fish Passage Culverts Replaced
	Number of Roadways within Floodways and Floodplains Reduced
	Air Quality Attainment

Chapter 3 Public Engagement

The 2035 MSB LRTP update was accomplished within the context of a multi-faceted, ongoing public engagement effort. The public engagement campaign was designed to increase awareness of the MSB LRTP within the community and provide a convenient way for the public to provide input on transportation concerns and improvements. Engagement efforts included traditional methods, such as public meetings, and newer technological methods, such as an online open house and interactive map. The three milestones where public input was sought were:

Issues Identification, Existing Conditions, and Roadway Alternatives

Alternative Transportation Solutions

Draft LRTP

Focus Group Workshops

The MSB LRTP Focus Group included a cross-section of stakeholders, including cities, Road Service Areas (RSAs), community councils, local businesses, utility companies, and transit providers. The focus group met three times throughout the process, to provide input and guidance on the MSB LRTP.

Public Meetings

The MSB held two sets of public meetings to gather input and inform the public about the LRTP update. Each meeting is described below:

- **Public Meeting 1: July 2014** – Public Meeting 1 was held to inform people about the LRTP update and solicit input and ideas regarding the future transportation vision and project needs. Information about existing conditions and potential roadway improvements was presented. The meetings were conducted as open houses where participants viewed numerous educational materials. Attendees were encouraged to ask questions of project team members and provide input on transportation issues and opportunities they would like to see addressed. Identical meetings were held in three different locations in the MSB: Sutton, Wasilla, and Big Lake.
- **Public Meeting 2: March 2017** – Public Meeting 2 was held to solicit feedback on this draft LRTP. Identical meetings were held in three different locations in the MSB: Sutton, Wasilla, and Houston in March 2017.

Online Open House

Traditional public meetings have limitations. They typically occur in the evening and only a few times during the project's lifetime, making it difficult for some people to attend due to other commitments. To give people more opportunity to participate in the LRTP Update, a series of online public open houses were held.

An online public open house is a web-based tool that takes an in-person public meeting and transfers it to an online forum that is accessible 24 hours per day, 7 days per week to anyone with internet access. Online open houses have the same general format and materials as a public open house, with the opportunity to be "live" for a longer period (e.g., 30 days).

- **Online Open House 1: July 2014** – Online Open House 1 informed people about the LRTP update and solicited input and ideas regarding future transportation vision and needs. Draft roadway conditions and potential improvements were presented. This online open house was available for 25 days.
- **Online Open House 2: July 2016** – Online Open House 2 educated the public about alternative ways, besides roadway improvements, to improve transportation in the MSB. This online open house also featured the *Tough Choices Survey*, meant to provide the MSB with input regarding how it should prioritize transportation decisions. This online open house was available for 48 days.
- **Online Open House 3: March 2017** – Online Open House 3 presented the Draft LRTP and solicited feedback on the draft plan. It was available for 90 days.

Other Public Engagement Events

The project team participated in other public engagement events to inform people about the LRTP update and to get feedback on transportation issues and needed improvements in the MSB. Specific activities included participation in the MSB Transportation Fair and presentations to the following groups:

- Community Council
- MSB Planning Commission
- MSB Transportation Advisory Board
- MSB Aviation Advisory Board
- Palmer Chamber of Commerce
- Wasilla Chamber of Commerce
- Big Lake Chamber of Commerce
- Palmer Kiwanis
- Houston City Council
- Palmer City Council
- Mat-Su Transit Coalition
- Palmer Planning Commission
- Houston Planning Commission
- Wasilla Planning Commission
- Mat-Su Senior Center

Website

The project website, www.msblrtp2035.com, was a primary means of providing information to, and receiving feedback from, the community. Key elements of the website included:

- A "Home" page that provided the latest updates on the LRTP and key links for the public to get information and provide input (e.g., interactive comment map)
- A "Documents" page that provided the latest technical memoranda, meeting documents, interactive comment map, and historical documents
- A "Get Involved," or public involvement, page that included information on past meetings and provided a way for users to contact the project team and sign up for the project mailing list
- An "FAQs," or Frequently Asked Questions, page that provided answers to common questions about the LRTP

- A "Contact Us" page that provided project team contact information, a web-based comment form, and other key links

Comments received via the website during the LRTP update process, along with summaries of stakeholder outreach activities, are included in Appendix B.

Public Input

The project team received a wide range of input from the community on transportation problems and suggested improvements. This feedback was used to identify issues and needs to be addressed, potential improvements to be considered, and modes in which the MSB should invest. Feedback suggested an increased emphasis on non-roadway improvements, identified locations for specific improvements such as park and ride lots and transit routes, and was used to develop goals and strategies.

A summary of the major ideas suggested by the public includes:

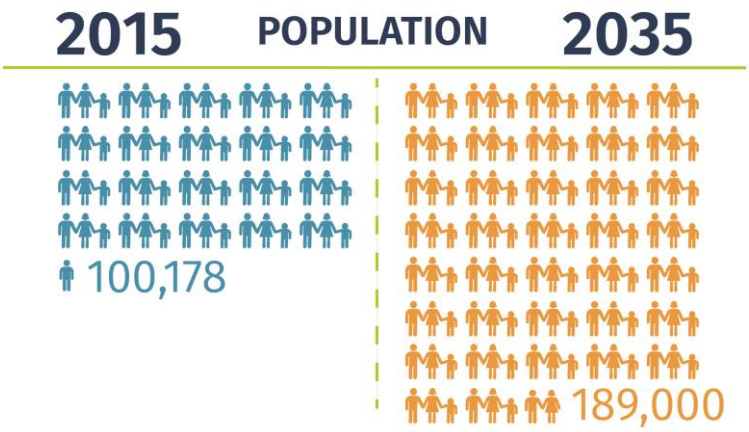
- Improve the Parks, Glenn, and Palmer Wasilla Highways
- Improve Knik Goose Bay and Bogard and Seldon Roads
- Develop a bypass around Wasilla
- Expand the transit system including more regular service to Anchorage and more fixed-route service in the Core Area
- Improve traffic signal timing
- Build or identify additional Park and Ride Facilities to encourage car- and vanpooling
- Promote telecommuting
- Encourage mixed-use and transit-oriented development
- Implement commuter rail
- Build more pedestrian and bike trails
- Address ATV and ORV use in road rights-of-way
- Support people who want to walk or bike

Appendix B provides additional detail about the public outreach efforts and includes:

- Public Meeting/Online Open House presentations and summaries
- Workshop Summaries
- *Tough Choices Survey* results
- Summary of comments received

Chapter 4 The MSB Today

The MSB has been Alaska's fastest growing region for the last three decades. In 2015, the MSB had an estimated population of 100,178 according to the Alaska Department of Labor and Workforce Development.[6] The population of the MSB is expected to continue to grow and could reach 189,000 by 2035.



Demographic shifts are occurring within the MSB, and with those shifts, transportation demand and preferences are changing. For example, the largest generation grouping is now Millennials[7]. Studies show that Millennials, compared to previous generations, tend to drive less, buy fewer cars, prefer dense and walkable neighborhoods, are more likely to rent, and are starting families later[8,9]. Another example is that more residents are reaching retirement age (65 years of age and older) and are choosing to remain in Alaska instead of moving outside. This demographic change is impacting traffic patterns because older drivers are making more trips than they used to[10], and to different locations, instead of commuting to work.

For additional details about existing demographics, please see Chapter 2 of Appendix A.

Economics

Economics, such as the number of jobs and median income of a community, also has a direct relationship to transportation demand. When more people have jobs, there are more people commuting to and from work. Employment location influences commuting patterns. Are people able to find jobs near home, or do they have to travel to other parts of the MSB, to Anchorage, or even farther? Currently, many workers commute into Anchorage, but this will change as the MSB's economy grows and becomes more mature. Income levels influence a household's ability to buy and operate a vehicle (the dominant form of transportation in the MSB) as well as the number of trips made for discretionary purposes. For additional information on existing economic conditions, please see Chapter 2 of Appendix A.

[6] Alaska Department of Labor and Workforce Development. 2016. 2015 Population Estimates by Borough, Census Area, and Economic Region. Available on the internet at http://live.laborstats.alaska.gov/pop/index.cfm
[7] According to the Pew Research Center, Millennials are those born after 1980 and the first generation to come of age in the new Millennium. There is no precise date when this cohort begins or ends. http://www.pewresearch.org/topics/millennials/
[8] http://www.uspirg.org/sites/pirg/files/reports/Transportation%20%26%20the%20New%20Generation%20vUS_0.pdf
[9] http://knowledge.wharton.upenn.edu/article/why-millennials-are-delaying-home-buying-more-than-ever/
[10] http://assets.aarp.org/rgcenter/ppi/liv-com/fs218-transportation.pdf

Existing Roadway System

Highways and roads are our primary transportation system. The 2,630 miles of roads in the MSB are owned and maintained by DOT&PF; MSB and its RSAs; the Cities of Houston, Palmer, and Wasilla; and the Chickaloon Native Tribe. The road system ranges from local residential streets to limited-access freeways. Corridors that are part of the National Highway System (NHS) within the MSB are the Glenn Highway, Parks Highway, Palmer-Wasilla Highway, and Knik-Goose Bay Road. The NHS includes roads that are important to the national economy, defense, and mobility. The Parks and Glenn highways are also part of the Interstate System.

Most of the MSB road system functions at an acceptable Level of Services C/D today. Congestion occurs along the Parks Highway through Wasilla, Knik Goose Bay Road to Vine Road, the Palmer-Wasilla Highway, and there are spot intersection issues along Bogard Road at Engstrom Road and Bogard Road at Seldon Road at peak hours. One section of Knik Goose Bay Road near Wasilla experiences a failing level of service (E or F).

Knik Goose Bay Road between the Parks Highway and Point MacKenzie Road, and the Parks Highway between Wasilla and Big Lake are designated as Highway Safety Corridors due to their high accident rates. The Palmer-Wasilla Highway between Palmer and Wasilla is also being considered for a Highway Safety Corridor designation. This designation lowers speed limits, increases enforcement and fines, and focuses the need to make significant roadway improvements to improve safety. Even if a road has an acceptable level of service, it may still need improvements to address safety concerns.

There is a system-wide lack of north/south and east/west arterial and collector streets that strains the existing network. Recent projects such as the Bogard East extension, Clapp Mack extension, Seldon West extension, improvements to Vine Road, and the reconstruction of Trunk Road have improved this situation, but additional network improvements are needed. The lack of local connectivity among subdivisions adds to traffic, congestion, and safety issues as local traffic must enter the limited arterial network to travel short distances.

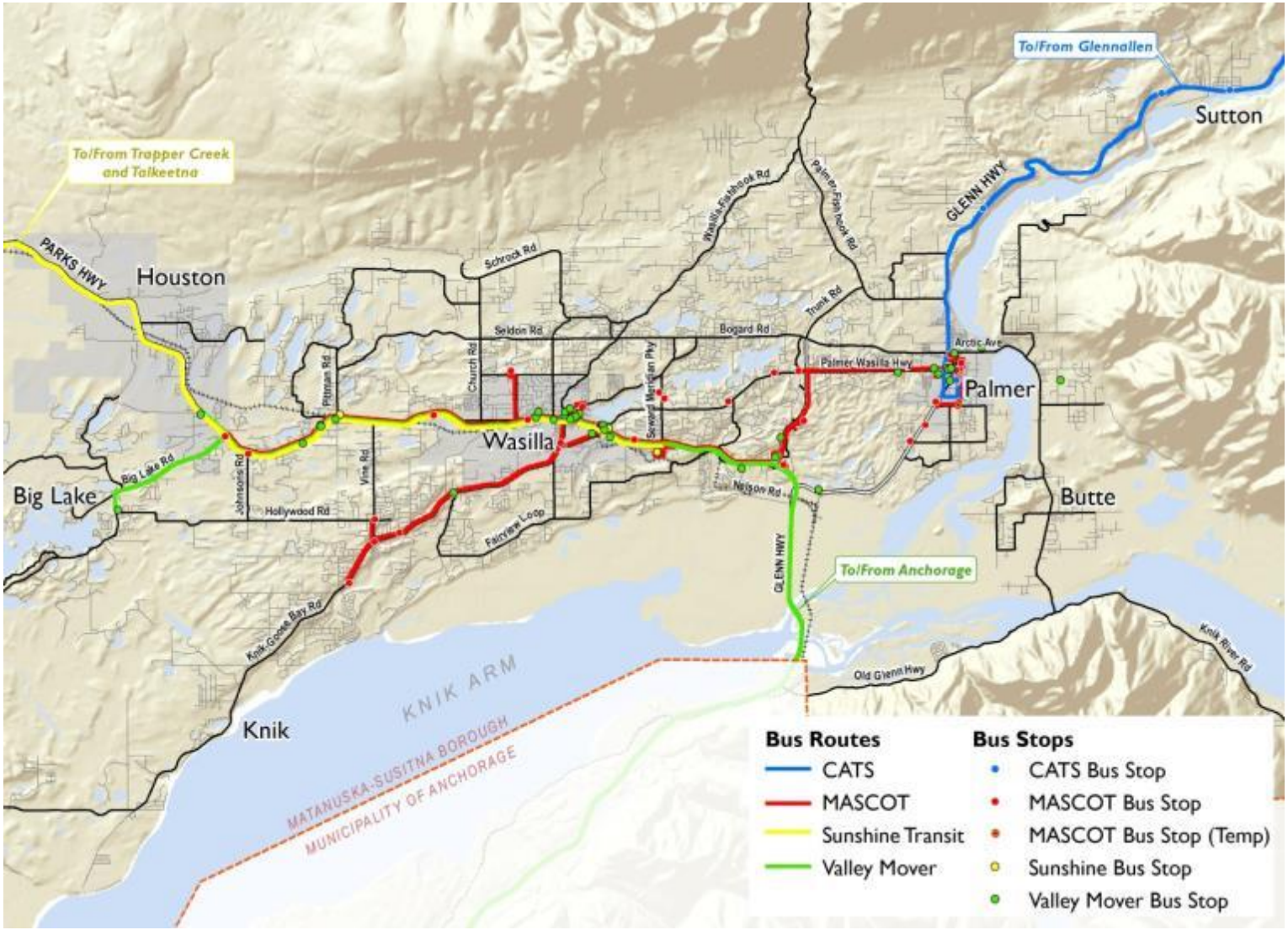
Please see Chapter 3 of Appendix A for a more detailed discussion on the existing roadway system.

Existing Transit System

Transit service is provided by People Mover's Share-a-Ride vanpool program and three non-profit entities: the recently combined Mat-Su Community Transit (MASCOT)[11] and Valley Mover, Sunshine Transit, and Chickaloon Area Transit System (CATS). The Mat-Su Senior Center (formerly known as the Palmer Senior Citizens Center) also provides transportation to individuals who meet certain eligibility qualifications, such as being over 60 years of age or qualifying for the Medicaid Waiver program. An overview of the routing and stops for each transit provider is shown in Figure 6.

[11] As of March 2017, MASCOT and Valley Mover are in the process of consolidating their transit services.

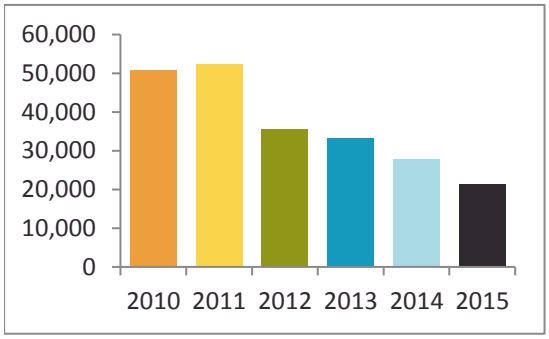
Figure 6. Routing and Stops for Existing Transit Service



MASCOT

MASCOT is primarily funded through federal, state, and local government and private foundation grants. Other sources of revenue include passenger fares, private donations, and advertisements. It provides service in the Core Area of the MSB from Palmer to Meadow Lakes and Knik-Fairview. It operates three routes: Green Route (Knik), Red Route (Wasilla), and Blue Route (Palmer). It provides "Route Deviation" bus service, meaning that buses can deviate from their route for pickups and drop offs. It provides "demand response" bus service, which does not follow a set route or schedule, but rather combines passenger trips to minimize overall passenger wait and ride time. It also offers a taxi voucher program. Its hours of operation are typically Monday through Friday from 5am to 8pm. In 2014, it operated 14 vehicles and had an average weekly ridership of 570. Annual ridership is shown in Figure 7.

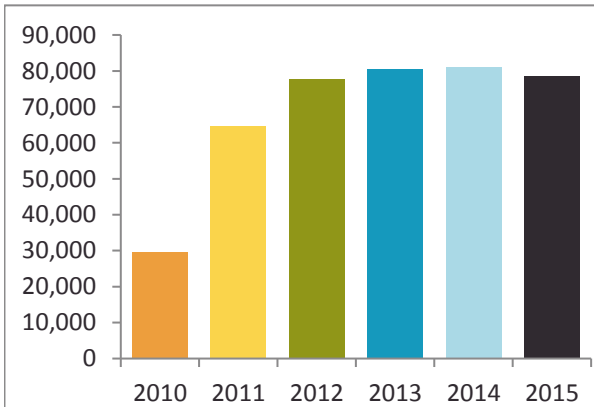
Figure 7. MASCOT Ridership, 2010-2015



Valley Mover

Valley Mover provides transit service between the MSB and Anchorage. It operates Monday through Friday and provides 15 round trips per day between the MSB and the Anchorage Bowl and another 2 trips between the MSB and Eagle River. Annual ridership is shown in Figure 8.

Figure 8. Valley Mover Annual Ridership, 2010-2015



Sunshine Transit

Sunshine Transit provides public transportation for the Upper Susitna Valley (primarily Talkeetna, Trapper Creek, Willow, and Wasilla) and is operated by the non-profit Sunshine Community Health Center, doing business as the Sunshine Transit Coalition. Sunshine Transit operates Monday through Saturday on a deviated flexible route service[12] in the Talkeetna area (with flag stops), with on-demand service to Trapper Creek, Willow, and Wasilla. It operates four vehicles and has a typical weekly ridership of 119.

Chickaloon Area Transit

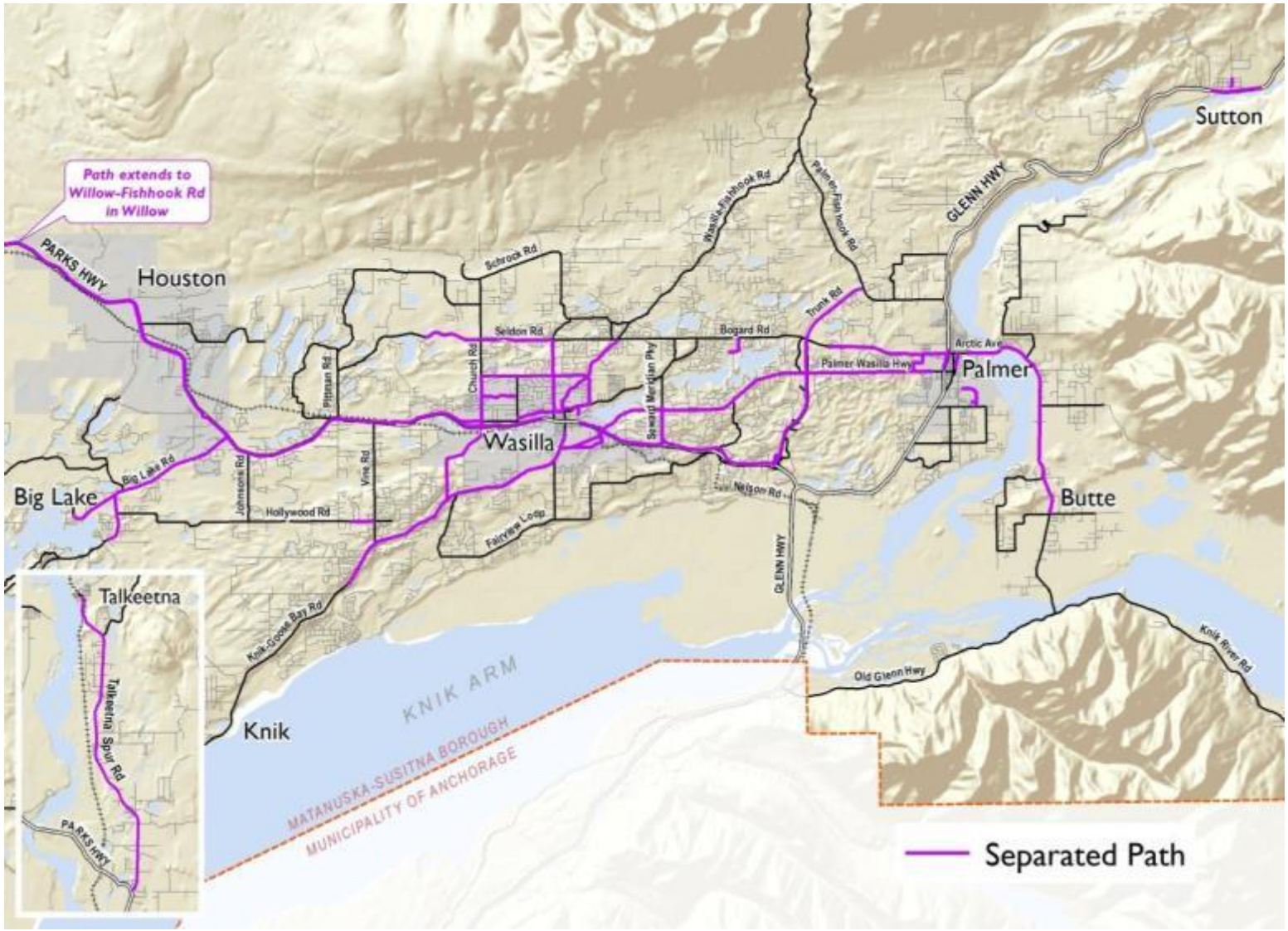
CATS has been operated by the non-profit Chickaloon Native Village since 2006. It operates as a demand-response service between Chickaloon and Palmer.[13] Service is provided Monday through Friday from 8:30am to 5:00pm. In 2014, it operated three vehicles and had a typical weekly ridership of 50.

[12] The bus can go up to 0.75 mile off the Spur Road for individuals with special needs.
[13] Milepost 40 to 70 of the Glenn Highway, Chickaloon to Sutton, Buffalo, Soapstone, and Palmer.

Existing Active Transportation System

Active transportation in the form of walking and bicycling are of interest to residents and policy makers. Almost everyone is a pedestrian for at least a portion of each trip taken. The active transportation network consists largely of sidewalks and separated paths. The MSB does not have a sidewalk requirement, so the presence of sidewalks is sporadic. Sidewalks are typically found in the original Palmer townsite area and historic, commercial part of downtown Wasilla. The separated paths trail network is typically associated with recent DOT&PF and MSB arterial road projects that built the paths in conjunction with roadway improvements. The existing separated paths are shown in Figure 9.

Figure 9. Existing Separated Paths



Other Modes of Transportation

We also rely on other modes of transportation such as air, rail, and marine. These modes have separate modal plans and are discussed only briefly in this plan.

Air

Within the MSB, there are eight DOT&PF-owned public airports and two municipal airports. There are also 34 seaplane bases and nine heliports registered with the Federal Aviation Administration. There are 15 private airparks and approximately 200 private airstrips that occur throughout the MSB.

While the MSB is not currently an airport owner and operator, it has responsibilities regarding land use planning and promoting economic development, and is interested in working with aviation interests and the public to promote/preserve aviation and encourage compatibility with other activities in the region. The MSB is currently completing Phase II of its Regional Aviation System Plan (RASP) to identify how aviation in the MSB may change over time and what actions the MSB should take to support this transportation mode.

Phase I of the RASP provided recommendations within five issue categories, summarized below:

- Involvement of the Aviation Community
  - Establishment of an Aviation Advisory Board (AAB). The AAB was established in 2009 by MSB Assembly action and currently meets on a monthly basis. The five member board is composed of a diverse mix of aviation and non-aviation interests and provides advice to the MSB Assembly and the administration on aviation and airport-related issues.
- Airspace
  - Require new and existing airports, commercial floatplane bases, helipads, and heliports to obtain an FAA airspace determination and registration.
  - Encourage pilots to fly with landing lights on to increase their visibility to other planes.
  - Hold ongoing discussions between the MSB, FAA, and AAB to discuss military airspace issues.
  - Support implementation of Capstone-type technology[14] in the MSB.
- Communications
  - FAA should continue to reassign radio frequencies to airports in the MSB following a logical geographic pattern.
  - Communicate private airport locations and radio frequencies to pilots.
  - FAA should establish standard VFR reporting points and provide information on military routes.
  - Implement a comprehensive pilot education program about topics such as noise abatement procedures, radio frequencies, use of radios and landing lights, land use rules, and more.
  - Expand radio and radar coverage in the MSB.

[14] Capstone refers to a joint industry and FAA research and development project designed to improve aviation safety and efficiency in Alaska by putting cost-effective, new technology avionics equipment into aircraft and providing the supporting ground infrastructure. The Capstone project was discontinued in 2006 and the FAA has incorporated it into Automatic Dependent Surveillance–Broadcast surveillance system.

- Airport Compatibility
  - Notify property owners of airport locations on MSB or DOT&PF maps and note proximity to an airport on plats.
  - Address airports in comprehensive plans and Special Land Use Districts.
  - Involve AAB in Lake Management Plans that address aviation.
  - Encourage consolidation of antenna towers and involve AAB in antenna/tall tower reviews.
  - Consider airport proximity when siting public facilities near airports.
  - Require conditional use permits, planned unit development, or land use permits for new airports, commercial floatplane bases, helipads, and heliports; adopt airport template(s) that address minimum airport safety standards.
  - Amend Title 27 Subdivisions (now listed as Title 43) to define platting requirements specifically for airports; require airports to be shown on a plat if subdivision of land is required.
- Public Airport Improvements
  - Airport owners should consider RASP public comments about future airport improvement needs.

The RASP also recommended that all existing and new airports in the MSB be required to obtain FAA airspace determination and registration.

Other aviation recommendations include:

- Proposed precision instrument approach to Wasilla Airport
- Actively support the improvement of airports
- Minimize conflicts between seaplane bases and other users
- Support airport sponsor to identify sources of capital funding, including public-private partnerships

Additional information about aviation can be found in Chapter 7 of Appendix A.

Rail

In the MSB, the ARRC has approximately 185.2 miles of mainline track[15] and three stations (Palmer State Fair Ground[16], Wasilla, and Talkeetna), with whistle stops in remote areas. The ARRC provides freight and passenger rail service.

The Port MacKenzie Rail Extension project is an MSB project being constructed in cooperation with the ARRC. The project is building a new 32-mile track connecting Port MacKenzie to the ARRC mainline track near Houston. As of July 2017, the project was on hold with approximately 60 percent of the project completed. It will cost approximately $125 million more to complete the project, but funding has not been identified. Other planned rail improvements include:

- Glenn Highway MP 34-42 Improvements (includes rail crossing improvements);
- South Wasilla Rail Line Relocation; and

[15] The Palmer spur line is approximately 11 miles.
[16] This station is used to support special events at the State Fair Ground. There is no regular service to this station.

- Railroad-Highway Grade Crossing reduction.

Rail recommendations include pursuit of commuter rail. The conceptual operating plan for commuter rail, from the draft 2016 *Alaska State Rail Plan,* is based on three stations (Wasilla[17], Matanuska, and Ship Creek), with three southbound peak period trips in the morning, the reverse during the evening peak period, and one mid-day round trip. Total weekday ridership could reach 1,500 by 2020. Other recommendations include relocation of the Wasilla Train Station and completion of the Port MacKenzie Rail extension.

Additional information about the rail system can be found in Chapter 8 of Appendix A.

Marine and Waterborne

Marine and waterborne transportation remains an important part of our transportation system. The MSB has consistently given a high priority to the development of a deep water port and related industrial and infrastructure development in the Point MacKenzie area. Port MacKenzie, opened in 2001, is still under development to function as the primary regional facility for the export of resources and the import of supplies and equipment. Some of the major improvements needed to support Port MacKenzie include:

- New highway connections to the Parks Highway
- Completing the rail connection to the ARRC mainline
- Developing a natural gas supply
- Completing a second trestle connecting the barge dock to the deep draft dock

Marine recommendations include the continued development of Port MacKenzie and the continued operation and maintenance of existing public boat launch facilities and public access points to lakes and rivers.

Additional information about the marine and waterborne transportation system can be found in Chapter 9 of Appendix A.

Remote Access and Recreation

The MSB has many small communities, remote cabins and recreation areas that are not served by the road network. They are served by riverboats, floatplanes, ATV/ORVs, mountain bikes and by foot in the summer and dog teams, snowmachines, skis, ski-planes, snowshoes, and wide-tire bikes in the winter. Many of the remote areas and cabins have jump off points along the road system without sufficient parking and staging areas. The lack of formal parking and staging areas along remote access areas causes vehicles to park and stage within the available right-of-way (ROW), which may or may not be designed for shoulder parking. The parked vehicles can cause the ROW to be narrowed significantly, which can impede larger vehicles (i.e., emergency services or maintenance vehicles) and significantly impact traffic flow. Awareness of these modes and their needs should be considered when making long-term transportation decisions.

[17] As of August 2016, this station is under development.

Chapter 5 Future Challenges and Risks

Transportation is an integral component to the MSB. It should not be considered in isolation from population growth, changing demographics, travel behavior, community values, land use, or funding constraints. These trends and challenges affect our ability to provide a safe and efficient multimodal transportation network that meets the mobility and accessibility needs of its residents. The following is an overview of trends and challenges expected to influence transportation decisions and travel behavior in the MSB.

Organizing Development to Improve Travel

Throughout the LRTP update process, many people expressed an interest in having more, higher density mixed used areas in the MSB. Low-density development spreads out over a wide area and often requires more infrastructure to service this area, which often results in increased congestion and commute times, loss of habitat and open space, and reduced sense of community. Going from home to work; shopping; and to school, recreation, entertainment, medical, and government facilities can be a long trip that is made even longer if an alternative transportation mode is used.

Higher density mixed-use development allows for shorter trip distances than can be easily made by walking, biking, or transit. People switching to other transportation modes will reduce the number of cars on the road, thereby reducing congestion and the need for roadway improvements. However, existing land use regulations do not encourage this type of development. Development incentives and procedural changes can help support different, higher density development patterns.

In addition, the context of a development needs to be considered, not just its site. Development needs to include integration of pedestrian, bike, transit, and vehicle facilities with adjacent properties. Development near transit needs to include walking/biking connections between bus stops and development. Site design and subdivision standards need to be reviewed and updated to reflect our transportation and land use vision.

Changing Demographics

As mentioned earlier, demographic shifts are occurring within the MSB, and with those shifts, transportation preferences are changing. Millennials, compared to previous generations, tend to drive less, buy fewer cars, prefer dense and walkable neighborhoods, are more likely to rent, and are starting families later.[18, 19] As a result, they are looking to make more trips using transit, walking, or bicycling and want to live in more dense settings that support those activities. People are also living longer than previous generations. As people age, their housing preferences may change, their travel behavior changes, and even their preferred mode of travel may change as some will chose not to, or cannot, drive. The transportation system needs to meet the needs of a variety of users and evolve as demographics continue to change.

[18] http://www.uspirg.org/sites/pirg/files/reports/Transportation%20%26%20the%20New%20Generation%20vUS_0.pdf
[19] http://knowledge.wharton.upenn.edu/article/why-millennials-are-delaying-home-buying-more-than-ever/

Housing

Traditionally, many people chose to live in the MSB because housing was more affordable and they could get a larger lot or house than in Anchorage. Large lots often have on-site water and septic systems, which can encourage leapfrog development because they do not have to be connected to municipal services. This low-density housing makes it difficult for residents to use any mode of transportation besides the car.

However, this situation is changing. According to the MSB's Housing Needs Assessment, there is not enough housing to meet existing needs. While large-lot, single-family homes are available, other housing types, such as multi-family homes, are not, thus limiting people's choices. The need for a housing mix will increase as households in the MSB are expected to get smaller (i.e., fewer people per household). Smaller households often, but not always, look for more dense development with amenities, which creates a need for future development to meet those desires. These higher density alternatives make it easier to provide alternative modes of transportation.

Shifting Travel Modes

Stakeholders indicated they would like more biking, walking, and transit use, and less automobile use. This mode shift would take some cars off the road and result in less congestion and air pollution, and reduce the need for roadway improvements. However, for people to shift modes, the new modes need to be affordable, efficient, and accessible.

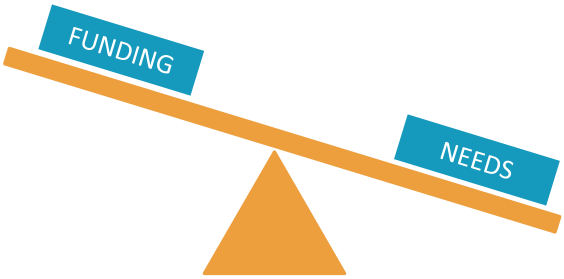
Higher densities make it easier to make trips via walking or transit and give people more transportation choices. The MSB should strengthen land use regulations and incentives to provide higher density in certain areas of the MSB.

Developments need to incorporate alternative modes from the start. It is hard to retrofit a road to handle other modes, if there is insufficient space or it is too costly to provide a complete solution. For example, while bus stops are relatively inexpensive, people need sidewalks to and from their destinations. Without the ability to go between the bus stop and the final destinations, people may still choose to drive, even though the area is accessible by transit.

Travel Behavior

Traditionally, the focus of transportation planning has been getting people to and from work. Nationally, and in the MSB, there has been an increase in non-work trips, which has impacted travel patterns. The morning and afternoon rush hour is no longer the only concern; there is more travel and congestion in off-peak times. Additionally, non-work trips are more geographically unpredictable. As a result, these trips are often better served by a private car, creating a need for roadway improvements.

Funding



The MSB, like most communities, does not have enough funding to construct all the needed transportion improvements. Many improvements are funded by FHWA/FTA (directly or via DOT&PF) through a variety of programs. Each program has restrictions on how the funds can be spent, which limits transportation improvements. For example, NHS funding can only be spent on a NHS facility. DOT&PF cannot spend those funds on a non-NHS road even if it has a greater need and community support. Historically, the MSB received direct General Fund Legislative Grants from the state. These state funds are dependent on state revenues which are cyclic.

The desire to spread funding out geographically can influence where transportation investments are made. Many communities want to provide equity of benefits for all of their residents and, as a result, try to spread out the improvements over the community. That strategy may not result in the most strategic, necessary improvements, as needs are often unequal across the community. It is recommended that MSB continue to persue strategic priorities through publically-vetted processes such as the Capital Improvement Program, the LRTP, and active participation in the Statewide Transporation Improvement Program (STIP) to insure the best transportation decision-making for the Mat-Su.

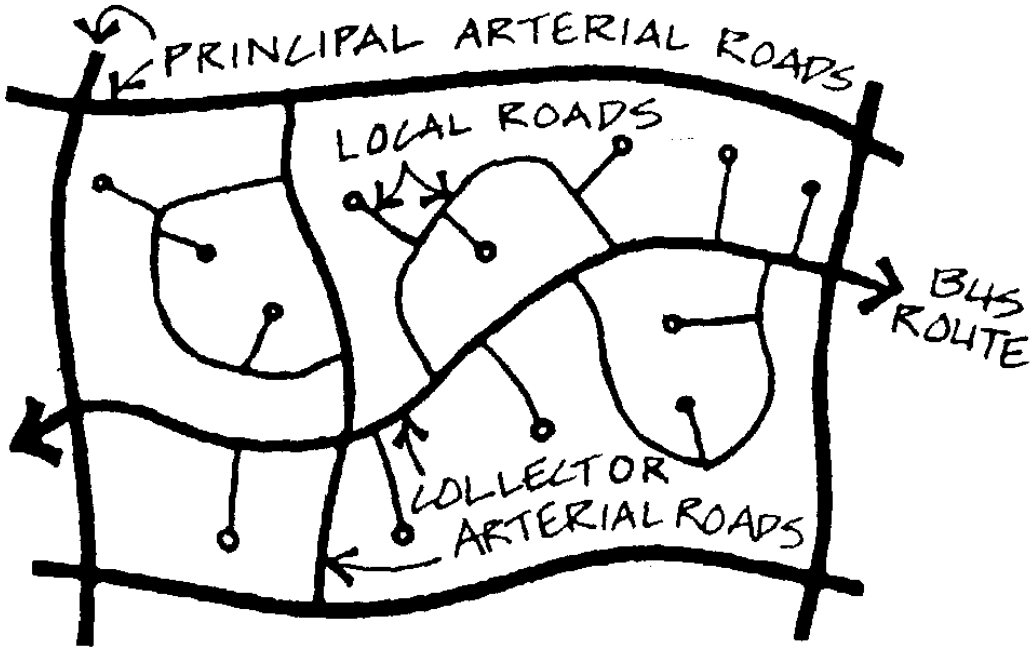
Roadway Connectivity

The MSB has a poorly connected street network that often increases trip lengths and focuses traffic on key roads, creating congestion and safety concerns. A well-connected network reduces travel distances and creates more route options. Despite the benefits of connectivity, residents often object, as they view new road connections as bringing the threats of higher speeds and more traffic, and being unsafe. Changing public perception of connecting roadways is a challenge to be addressed to improve mobility for cars, active transportation, and transit.

Collector Road Network

Collector roads play an important role in the transportation network. Local roads provide access to adjacent properties but are not designed for people to travel long distances. Arterial roads are meant for travelers who want to travel a long distance but provide little access to adjacent development. Collector roads fill the gap between those two roadway classes. Collectors gather traffic from local roads and funnel them onto the arterials roads. Drivers use a combination of all three road classes as part of an efficient transportation system. The MSB's collector road network is not as well developed as it should be for a community of this size. Some issues that have arisen as a result include the number of driveways and intersections on arterials and highways which slows traffic and create safety concerns. There is also a problem of residential subdivisions sharing a local residential road instead of each subdivision accessing a collector road. This creates conflicts as residents are unhappy with the traffic volume in their neighborhood. Having a well-developed collector road network would allow arterial

roads to function at a higher level, reduce travel times and improve safety. The difficulties include the construction or preservation of wider collector corridors, the transition of local roads to upgraded collector roads, new traffic patterns, and the impact to property owners resulting from the construction of a higher functioning road next to their residence or business. A well functioning Collector Road Network will require close coordination among the state, MSB, city governments, and developers.



The MSB's efforts to update their living Official Streets and Highway Plan should emphasize identifying a collector road system that can be developed as residential and commercial developments occur.

Changing Technology

New technology is changing transportation. Automatic collision avoidance systems, smart infrastructure, driverless cars, new fuel sources, smart phone apps, and more have changed, and will continue to change how to develop and use the transportation system. Technology and the extent of associated changes to the transportation system will continue. The transportation system must adapt to changing technology, but it is difficult to predict future changes and the extent of their desirability and usefulness.

Aging Infrastructure

Many roads and bridges within the MSB are reaching the end of their design life. Many of them need repairs or replacement, as they do not meet current design standards and do not meet existing or future traffic volumes. There is also a societal cost of congestion and accidents. There is not enough money, however, to make all the necessary improvements to the existing roadway network. Unfortunately, as the infrastructure continues to age, it costs more to fix.

Uncontrolled Access

Many of the principal arterials and major collectors that currently serve the MSB were originally constructed as local two-lane roads connecting the Cities of Wasilla and Palmer to each other and to farms, homesteads, and mines. Knik Goose Bay Road, Palmer-Wasilla Highway, Bogard Road, and others are handling more traffic than they were designed for. While some intersections on these roads are signalized, each road has many non-signalized intersections and driveways that enter directly onto these arterials. This uncontrolled access disrupts the efficient traffic flow and contributes to high accident rates.

Equity

Transportation equity means that everyone should have reasonable, affordable, and reliable access to the transportation system, including young people, seniors, persons with disabilities, and low-income residents. These populations often cannot afford a car, cannot drive, or do not want to drive, but they still have transportation needs. An equitable system needs to offer a mix of transportation choices so everyone has access. It also needs to provide transportation to and from the places people want to go, such as housing, medical facilities, and retail establishments. Transportation equity also needs to consider door-to-door issues to ensure that people can make the complete trip. For example, lack of sidewalks may keep people with disabilities from traveling between a bus stop and their final destination.

Data

Performance-based planning relies on data. While the MSB has some data, there is additional data that the MSB should consider collecting (or updating on a regular basis), such as pavement condition, sidewalk locations, and bicycle/pedestrian counts. However, data collection can be resource-intensive, creating a trade-off between collecting additional data to help refine future updates and supporting other efforts.

Transportation Governance

Road Service Areas

The MSB is a second-class borough created in 1964, with powers granted under Alaska Statute 29, Municipal Government. As a second-class borough, it is granted non-area-wide road powers, which the MSB implements through its 16 RSAs. The MSB may acquire area-wide road powers through ordinance, as identified in AS 29.35.210(b)(1).

The MSB's 16 RSAs generate revenues via property taxes that are used within the designated boundaries of the individual RSAs for road operations, maintenance, and limited capital improvements. Each RSA has an individual fund established and managed by the MSB to account for these revenues. The MSB's Department of Public Works manages the RSAs, and each RSA has a three-member RSA board that works with the MSB Department of Public Works (DPW) to develop a budget to allocate funds for operations, maintenance, and capital activities. The RSA Board, DPW, and the MSB Purchasing Division

work together to issue competitively bid contracts for operations, maintenance, and capital services. RSAs' budgets are approved annually by the MSB Assembly.

The MSB Staff should coordinate with the Road Service Area (RSA) boards to establish evaluation criteria, to prioritize road improvement needs within their area. As capital improvement costs may exceed an RSA's financial capacity to maintain a road or provide an adequate level of service, having consistent and defendable criteria would be beneficial. Coordination between the staff and RSAs on roadway recommendations enhances stakeholder backing and ensures a list of recommended projects that adequately addresses major roadway needs throughout the MSB.

RSAs have so far proven to be an effective means of maintaining and operating the road network within their boundaries and the arterials that cross their boundaries. Discussions with the DPW show support that the current RSA system provides a viable method to maintain system improvements well into the future. From an administrative and contractual standpoint, there would be minimal savings and benefits related to consolidating RSAs. The system is working and it is believed to be flexible enough to maintain future network and arterial expansion.

However, the current RSA framework should be evaluated annually to determine its continued effectiveness. It may be that no adjustments will be necessary, and the current program will remain in place. The current program should be compared to the options described below.

RSAs could be consolidated to reduce the number of RSAs, which would bring potential administrative and contractual cost savings. The approach may be to consolidate RSAs within the future Urbanized Area Boundary and leave the RSAs intact outside the Urbanized Area Boundary. Any consolidation requires a majority vote within each affected RSA to become a part of a unified RSA. Consolidation of RSAs would be beneficial because the RSA system is well understood and has worked effectively within the MSB since its establishment.

The MSB can adopt Area Wide Transportation powers as a second-class borough through an Assembly Ordinance, which would require a borough-wide vote as stipulated under AS 29.35.320 (Initiation of Acquisition of Power) and AS 29.35.330 (Election), or it could become a first-class borough. Both of these options would be more complex and costly, and the second option would have much broader implications from a governance standpoint than just road powers.

It is recommended that MSB's initial effort, if and when needed, would be to consolidate RSAs to match the Urbanized Area Boundary (with no changes or minimal boundary changes to the RSA's outside the Urbanized Area) to facilitate operations and maintenance once the MPO is established.

Metropolitan Planning Organization

The more urbanized area of the MSB will likely be designated an MPO once the 2020 Census is certified. The MSB completed its MPO Self-Assessment in 2016 to help guide it through the process of becoming an MPO. The following represents some of its preliminary findings.

The FHWA will require the establishment of the MPO to be the transportation policy-making authority within its boundaries. MPOs make certain that proposed near-term and long-term funding expenditures are based on a planning process that is continuous, cooperative, and comprehensive, known as the 3-C process. The MPO will work with the DOT&PF to establish federal funding levels meant for transportation projects within its boundaries. The MPO's role is in coordination and programming funds for projects and operations. The MPO will likely not own or operate the transportation network within its boundary. The implementation of the MPO's recommendation will rest with DOT&PF, MSB Capital Projects and Public Works Departments, and the Cities of Palmer and Wasilla. The MPO must involve all state, regional, and local public and private transportation providers, including Tribes, in the planning process.

The MPO will be established under law (23 CFR 450) and is defined as a policy board with the responsibility to perform six primary functions:

- Establish a setting for effective decision making.
- Identify and evaluate transportation improvement options.
- Prepare and maintain a Metropolitan Transportation Plan (MTP aka LRTP).
- Develop a Transportation Improvement Plan.
- Identify performance measure targets and monitor whether implemented projects are achieving targets.
- Involve the public.

These tasks are accomplished through established committees and MPO staff. An MPO is required to have a Policy Committee or Board made up of elected officials or their designee, in the case of state agencies such as DOT&PF. The MPO may also, but is not required to have, advisory committees such as a Technical Advisory Committee (TAC) or a Citizen Advisory Committee (CAC). The TAC is usually made up of local professional transportation staff and representatives from MSB, local cities, DOT&PF, ARRC, Tribes, transit providers, and others. The CAC is appointed by the Policy Committee to advise the Policy and Technical Committee with respect to public outreach and input.

The MSB should implement the recommendations from the MPO Self-Assessment and use it as a guide in its preparations of becoming an MPO in the early 2020s.

Regional Coordination

The MPO Self-Assessment also looked at a proposal to establish a Regional Transportation Planning Organization (RTPO). An RTPO is a group of non-metropolitan local officials and transportation system operators that a state may assemble to assist in statewide and non-metropolitan transportation planning. As the local planning authority that spans the entire MSB, the MSB currently produces the documents and decisions that would be the responsibility of an RTPO. Because of this regional government structure, the MPO Self-Assessment recommends against establishing and RTPO since it would be duplicative.

To help address areas of coordination with other transportation stakeholder agencies and government structures within the MSB (DOT&PF, the cities, ADEC), the Borough is currently working to develop a formalized Transportation Partnership with regional transportation stakeholders to improve current coordination practices. It is recommended to continue these efforts to improve coordination, efficiency, and knowledge-sharing between all transportation decision-makers.

Environmental Impacts

The environmental impacts associated with transportation are a concern. These impacts are varied and include air quality (greenhouse gases), water quality (stormwater runoff), fragmentation or destruction of wildlife habitat, development of open space, noise, and reduced visual quality. There is a growing interest in a transportation system that has fewer impacts on the environment.

MS4: Municipal Separate Storm Sewer System

The MSB's more urban areas will soon be required to institute a MS4 Permit Program as required under the Clean Water Act's National Pollutant Discharge Elimination System legislation. It is likely that permitting requirements will be triggered once specific population densities are attained after the 2020 census is certified. The MSB's 2013 Stormwater Management Plan outlines a reasonable regional approach to address these requirements suggesting that the MSB serves as a clearinghouse in cooperation with the Cities of Palmer and Wasilla and agencies such as DOT&PF.

MS4 permits focus on preventing pollution discharges into U.S. streams and lakes or "receiving waters." Permits require the use of adaptive management approaches, or six Minimum Control Measures, consisting of Best Management Practices with measurable timelines and actions, so that there is some flexibility in targeting solutions to meet local needs and conditions.

Transportation projects will require MS4 permits. It is important that the MSB establishes a reasonable and timely process to implement this program with a funding stream to pay for its management. The adopted 2013 Stormwater Management Plan identifies a variety of possible funding options.

Failure to establish as MS4 Permit program would be a violation of federal and state law and could reduce federal funding for highways and other infrastructure projects.

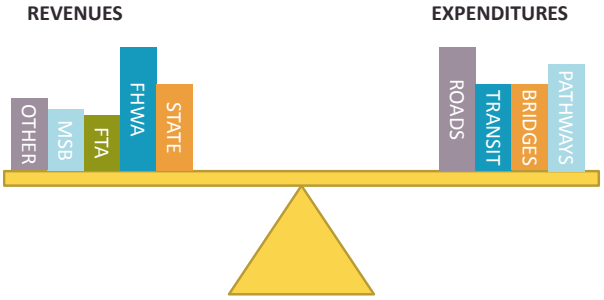
Chapter 6 Roadway Recommendations

Roadway improvements are needed for a variety of reasons, including improving congestion, safety, accessibility, and mobility. Many of the transportation improvements identified through the planning process are desirable, but the state and the MSB lack sufficient funding to implement them all. This chapter provides a summary of the anticipated future funding and a fiscally constrained roadway project list.

Fiscal Constraint

Recognizing financial realities is critical to the long-range transportation planning process. Fiscal constraints help communicate priorities because potential projects have to fit within an estimate of the realistically expected revenues available to the MSB for transportation improvements. Projects that are part of a fiscally constrained plan are a higher priority than those that do not fit within a realistic budget. MPOs are required by federal law to develop a fiscally constrained LRTP.

This is the MSB's first fiscally constrained LRTP. This initial effort will only look at the costs of roadway improvements and three funding sources: Federal Highway Funds, including state General Fund Match; state General Funds; and local MSB Bond revenues. Once an MPO is established, the fiscal constraint analysis must comply with FHWA regulations and address the many sub-categories of federal-aid funding.



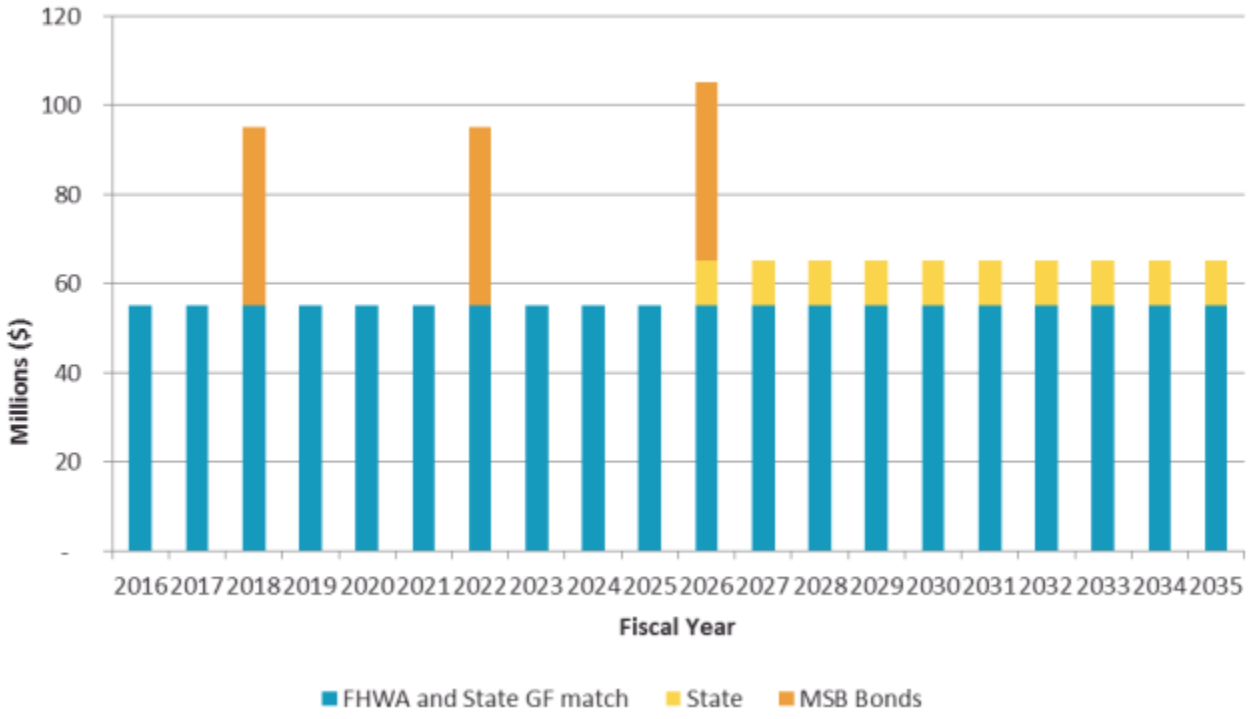
The projected funding estimate was developed based on historical information combined with guidance from DOT&PF and the MSB. The estimated revenue includes the following assumptions:

- $55 million annually in Federal Highway Funds and state General Fund Match over the next 20 years
- No state General Fund revenue for roadway projects from 2016 to 2025
- $10 million annually in state General Fund revenue for 2026 to 2035
- $40 million in local road bonds to be issued in 2018, 2022, and 2026 ($20 million for each bond issue funded by voter approved tax revenue and $20 million provided through state or other matching funds)

In total, these financial assumptions would provide $1.1 billion in Federal Highway and state General Fund Match, $100 million in state General Funds for DOT&PF projects, and approximately $120 million in MSB Bond revenues, for a total of $1.3 billion over this LRTP's 20-year planning horizon. As projects are funded, certain years may receive more or less of the funding identified, but the total cost of the 20-year recommended roadway program will be consistent with the estimated revenues. For example, the current fiscal year 2016-2019 statewide Transportation Improvement Program shows significantly more federal dollars addressing MSB projects than the $55 million annual federal funding target, but it is

consistent with the target through 2035. Figure 10 shows the projected future roadway revenue for 2016 through 2035.

Figure 10. Projection of Future Roadway Revenue, 2016-2035



Future Roadway System Performance

Traffic forecasts were prepared for a 2035 planning horizon to understand our future traffic needs. When this LRTP update began in 2014, it was assumed that, within the 20-year life of the LRTP, the Knik Arm Crossing and the Alaska Natural Gas Line would be constructed, and the population within the MSB would continue grow at approximately 2.71 % annually[20]. The state's General Fund Capital Budget exceeded $1.0 Billion dollars and several major capital improvements were under construction including the Point MacKenzie Rail Extension and the recently completed Bogard East Road Extension. However, in mid-2014 the value of a barrel of Alaska North Slope oil began its steady decline reaching a low point of less than $21.00 a barrel in February 2016, creating a fiscal crisis for the State of Alaska. As of February 2017, the price has risen to over $55.00 a barrel, but still well below the June 2014 price of over $100.00 per barrel, which has done little to improve the state's fiscal position. During 2016, work on the Knik Arm Crossing was stopped, the timing of the Alaska Natural Gas Line became less certain, the state General Funded Capital Budget is virtually non-existent, and population growth within the MSB has slowed.

[20] These forecasts were based on the University of Alaska Institute of Social and Economic Research's growth projections completed in December 2009.

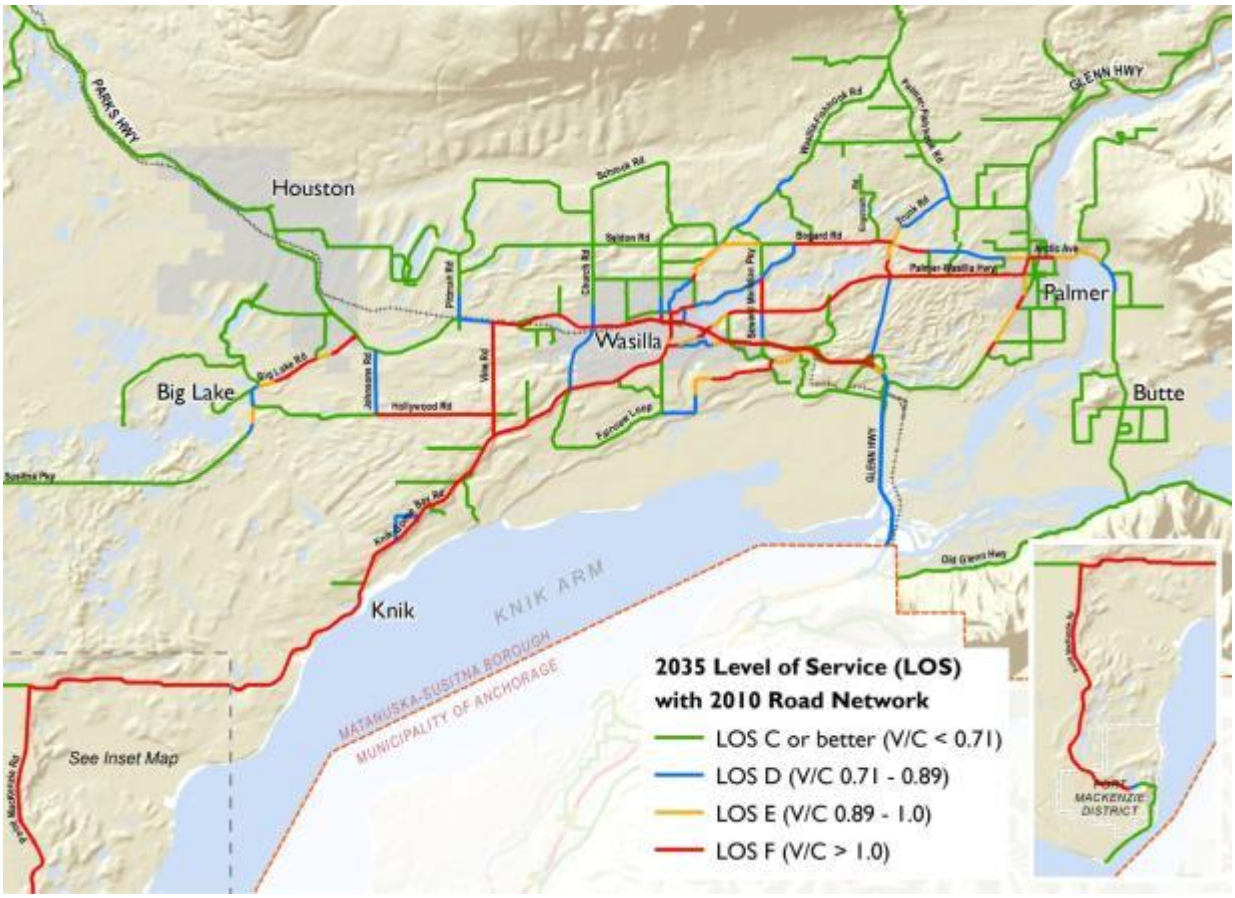
Within this set of changed circumstances, and uncertainty about the 2035 conditions, it was decided that the LRTP should continue to use the existing MSB traffic model to make a reasonable forecast of Future Roadway System Performance[21] and adjust recommendations accordingly, given that the Knik Arm Crossing will not be constructed by 2035. Less emphasis has been placed on projects in the lower Knik Goose Bay Road and Point MacKenzie Road areas, and more emphasis has been placed on the upper Knik Goose Bay and Parks Highway Corridor areas. Figure 11 shows how the existing roadway system would perform in 2035. Based on this information, several key roads, including the Parks Highway, Knik Goose Bay Road, the Bogard-Seldon corridor, and the Palmer Wasilla Highway, would have unacceptable levels of congestion.

The project team analyzed these results to identify which roadway improvements will be needed over the next 20 years[22].

[21] The MSB considered updating the travel model to reflect existing conditions. However, due to the extent of the changes that would have to be made, updating the model would result in substantial increases to the budget and schedule of the LRTP update.

[22] These results predict higher traffic volumes in the Point MacKenzie area due to the assumption of the Knik Arm Crossing being built. Without the bridge, less population and employment growth is expected to occur in Point MacKenzie and surrounding areas. The analysis, and resulting recommendations, have incorporated this change in population and employment distribution.

Figure 11. 2035 Base Conditions



Roadway Recommendations

This section presents fiscally constrained recommendations that may serve as the blueprint for roadway improvements over the next 20 years. Roadways are the backbone of the transportation system as they provide access to residences, businesses, and industries in the MSB.

Roadway recommendations are shown in Table 2 and in Figure 12 and 13. The recommendations are grouped into three sections: Short Term, Medium Term, and Long Term. The projects are identified with an ID number (1, 2, 3, etc.) in each section. Phased projects found in more than one section are connected with an alphanumeric ID (1a, 1b, etc.) to identify the project's continued funding.

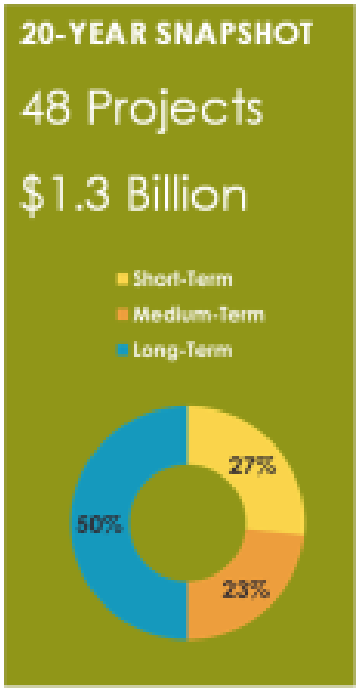


Table 2. Roadway Recommendations 2016-2035

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
Short-Term (2016-2019)				
1a	**Glenn Highway MP 34-42 Reconstruction Widen to 4 Lanes Parks Hwy to Palmer**	Congestion Relief	$56.0	FHWA
2	**Glenn Highway - Erosion Protection MP 63 and MP 64**	Safety, Asset Management	$5.6	FHWA
3	**Knik Goose Bay Road - Centaur Avenue to Vine Road Widen to 4 Lanes**	Congestion Relief	$83.2	FHWA
4	**Knik Goose Bay Road - Vine Road to Settlers Bay Drive Widen to 4 Lanes**	Congestion Relief	$27.2	State Bond/FHWA
5	**Parks Highway/Talkeetna Spur Road Pedestrian Improvements**	Safety	$3.17	FHWA
6	**Parks Highway MP 43.5-48.3 - Lucus Road to Pittman Road Widen to 4 Lanes**	Congestion Relief	$15.1	FHWA
7a	**Parks Highway MP 48.8 to 52.3 - Pittman Road to Big Lake Road Reconstruction Widen to 4 lanes**	Congestion Relief	$42.8	FHWA
8	**Point MacKenzie Road Improvement, MP 21.8 to 23**	Congestion Relief	$1.23	FHWA
9	**Seward Meridian Parkway - Palmer-Wasilla Highway to Seldon Road Widen to 5 Lanes**	Congestion Relief	$29.3	FHWA
10a	**Vine Road Improvements - Knik Goose Bay Road to Hollywood Boulevard -**	Congestion Relief	$2.0	FHWA
11a	**Wasilla Fishhook Road/Main Street (Yenlo Couplet)**	Congestion Relief	$5.7	FHWA
12	**Palmer-Wasilla Highway - Widen to 3 Lanes**	Safety	$21.8	HSIP
13a	**DOT&PF MSB Intersection Improvement Program**	Safety	$5.0	HSIP
14a	**Glenn Highway MP 53-56 Reconstruction - Moose Creek Canyon**	Asset Management	$3.0	FHWA
15a	**Glenn Highway MP 84.5-92 Rehabilitation - Long Lake Section**	Asset Management	$5.0	FHWA
16a	**Glenn Highway Rehabilitation MP 79-84.5**	Asset Management	$7.7	FHWA
17a	**Parks Highway Bridge Replacement - Montana and Sheep Creek**	Asset Management, Safety	$0.73	FHWA
18	**Parks Highway MP 90-99 Rehabilitation (Trapper Creek)**	Asset Management	$21.0	FHWA
19	**Parks Highway MP 99-123.5 Rehabilitation**	Asset Management	$35.76	FHWA
20a	**Parks Highway MP 163-183 Rehabilitation**	Asset Management	$0.59	FHWA

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
21	**Parks Highway MP 183-192 Rehabilitation**	Asset Management	$0.92	FHWA
M1	**South Trunk Road Extension Phase 2 - Parks Highway to Nelson Road**	Congestion Relief	$5.0	MSB Bond, State Legislative Grant
M2	**Hermon Road Reconstruction and Extension - Parks Highway to Palmer Wasilla Highway**	Congestion Relief	$6.0	MSB Bond, City of Wasilla, and/or State Legislative Grant
M3	**Nelson Road Extension - Extend Nelson Road north to Fairview Loop Road**	Congestion Relief, Safety	$3.0	MSB Bond, State Legislative Grant
M4a	**Seldon Road Upgrade - Wasilla Fishhook to Snow Goose**	Capacity Improvement	$13.0	MSB Bond, State Legislative Grant
M5	**Engstrom Road Congestion Relief:** Assess various alternatives to relieve congestion on Engstrom Road and provide a second access to Trunk Road and or Palmer Fishhook Road.	Congestion Relief, Safety	$2.5	MSB Bond, State Legislative Gran
M6	**Engstrom North Extension to Tex Al**	Congestion Relief, Safety	$2.5	MSB Bond, State Legislative Grant
M7	**Tex Al Road Upgrade and Extension**	Congestion Relief, Safety	$5.5	MSB Bond, State Legislative Grant
Medium-Term (2020-2025)				
1b	**Glenn Highway MP 34-42 Reconstruction Widen to 4 Lanes Parks Hwy to Palmer**	Congestion Relief	$27.3	FHWA
7b	**Parks Highway MP 48.8 to 52.3 - Pittman Road to Big Lake Road Reconstruction**	Congestion Relief	$15.5	FHWA
9b	**Seward Meridian Parkway - Palmer-Wasilla Highway to Seldon Road Widen to 4 Lanes**	Congestion Relief	$13.4	FHWA
10b	**Vine Road Improvements - Knik Goose Bay Road to Hollywood Boulevard**	Congestion Relief	$8.5	FHWA
11b	**Wasilla Fishhook Road/Main Street (Yenlo Couplet)**	Congestion Relief	$27.1	FHWA
13b	**DOT&PF MSB Intersection Improvement Program**	Safety	$15.0	HSIP
14b	**Glenn Highway MP 53-56 Reconstruction - Moose Creek Canyon**	Asset Management	$58.0	FHWA
17b	**Parks Highway Bridge Replacement - Montana and Sheep Creeks**	Asset Management, Safety	$25.06	FHWA
20b	**Parks Highway MP 163-183 Rehabilitation** -	Asset Management	$44.0	FHWA

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
22a	**Knik Goose Bay Road - Settlers Bay to South Alix Drive Widen to 4 Lanes: Design, ROW, Utilities**	Congestion Relief	$8.2	FHWA
23a	**Parks Highway Alternative Corridor - Seward Meridian Parkway to Knik Goose Bay Road: Design, ROW, Utilities**	Congestion Relief	$12.6	FHWA/State
24	**Glenn Parks Interchange - Hospital Access Improvements** 2nd Access to Hospital	Safety/Access	$12.0	HSIP
25	**Old Glenn Highway - New Glenn Highway to Airport Road**	Congestion Relief	$12.0	State
	Ongoing DOT&PF Asset Management and Safety Improvement Program: Annual funding for future asset management and HSIP at $4.0 million/year.	Asset Management and Safety	$24.0	FHWA/HSIP
M4b	**Upgrade Seldon Road from Snow Goose to Lucille**	Capacity and Congestion Relief	$13.0	MSB Bond, State Legislative Grant
M8	**Fern Street - Knik Goose Bay Road to Fairview Loop Road**	Congestion Relief and Connectivity	$6.0	MSB Bond, State Legislative Grant
M9	**Seldon Road - Beverly Lake Road to Pittman Road**	Capacity and Safety	$7.0	MSB Bond, State Legislative Grant
M10	**Jensen Road Extension to Soapstone Road**	Capacity and Safety	$1.5	MSB Bond, State Legislative Grant
M11	**Museum Drive Extension - West to Vine Road-**	Congestion Relief and Safety	$4.0	MSB Bond, State Legislative Grant or
M12	**Hemmer Northern Extension to Bogard Road East Extension**	Connectivity	$0.5	MSB Bond, State Legislative Grant
M13	**Katherine Drive Connection to Trunk Road**	Connectivity and Safety	$1.0	MSB Bond, State Legislative Grant
M14	**Settlers Bay Drive Extension to S. Hayfield Drive**	Capacity and Congestion Relief	$3.00	MSB Bond, State Legislative Grant
Long-Term (2026-2035)				
10c	**Vine Road Improvements – Hollywood Boulevard to the Parks Highway**	Congestion Relief, Connectivity, Safety	$33.5	FHWA
16b	**Glenn Highway Rehabilitation MP 79-84.5**	Asset Management	$36.3	FHWA
22b	**Knik Goose Bay Road - Settlers Bay to South Alix Drive**	Congestion Relief	$37.80	FHWA
23b	**Parks Highway Alternative Corridor Segment I: Parks Highway/Seward Meridian to Knik Goose Bay Road**	Congestion Relief	$132.40	*FHWA/State*

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
26	**Palmer Wasilla Highway: Seward Meridian Parkway to Fred Meyers 5 lane**	Congestion Relief	$30.00	FHWA
27	**South Big Lake Road - North Shore Drive to Hollywood Road Rehabilitation**	Asset Management	$5.0	State
28	**Big Lake Road - North Shore Drive to Parks Highway Reconstruction Widen to 4 Lanes**	Congestion Relief	$5.0	FHWA
29	**Bogard Road Between Seldon and Trunk Widen to 4 Lanes**	*Congestion Relief Capacity*	*$49.0*	*State*
30	**Palmer-Wasilla Highway Extension Reconstruction Widen to 4 Lanes**	Congestion Relief Capacity	$20.0	FHWA
31	**Parks Highway Alternative Corridor Segment 2: Knik Goose Bay Road to Vine Road: Design, ROW, Utilities , Construction**	Congestion Relief	$160.0	FHWA/State
32	**Wolverine Road, from the Wolverine Creek canyon, to approximately mile 10, where maintenance ends**	Asset Management and Safety	$10	State
	Ongoing DOT&PF Asset Management and Safety Improvement Program: Annual funding for future asset management and HSIP projects not currently identified at $8.5 million/year	Asset Management and Safety	$85.0	FHWA/HSIP
M15	**Felton Road Extension - Arctic/Bogard to Palmer Wasilla Highway/Palmer High School**	Congestion Relief	$8.0	MSB Bond, State Legislative Grant
M16	**Lucille Street - Spruce to Seldon**	Congestion Relief	$7.0	MSB Bond, State Legislative Grant
M17	**Valley Pathways School Access Improvement**	Congestion Relief	$9.0	MSB Bond, State Legislative Grant
M18	**Lucille Street - Parks Highway to Spruce**	Congestion Relief	$10.0	MSB Bond, City of Wasilla, and/or State Legislative Grant

Phased projects are indicated by the use of a letter after the project ID.

Projects that are not completed by 2035 are shown in italics. Additional funding will be required to complete these projects.

Figure 12. Short-Term Roadway Recommendations

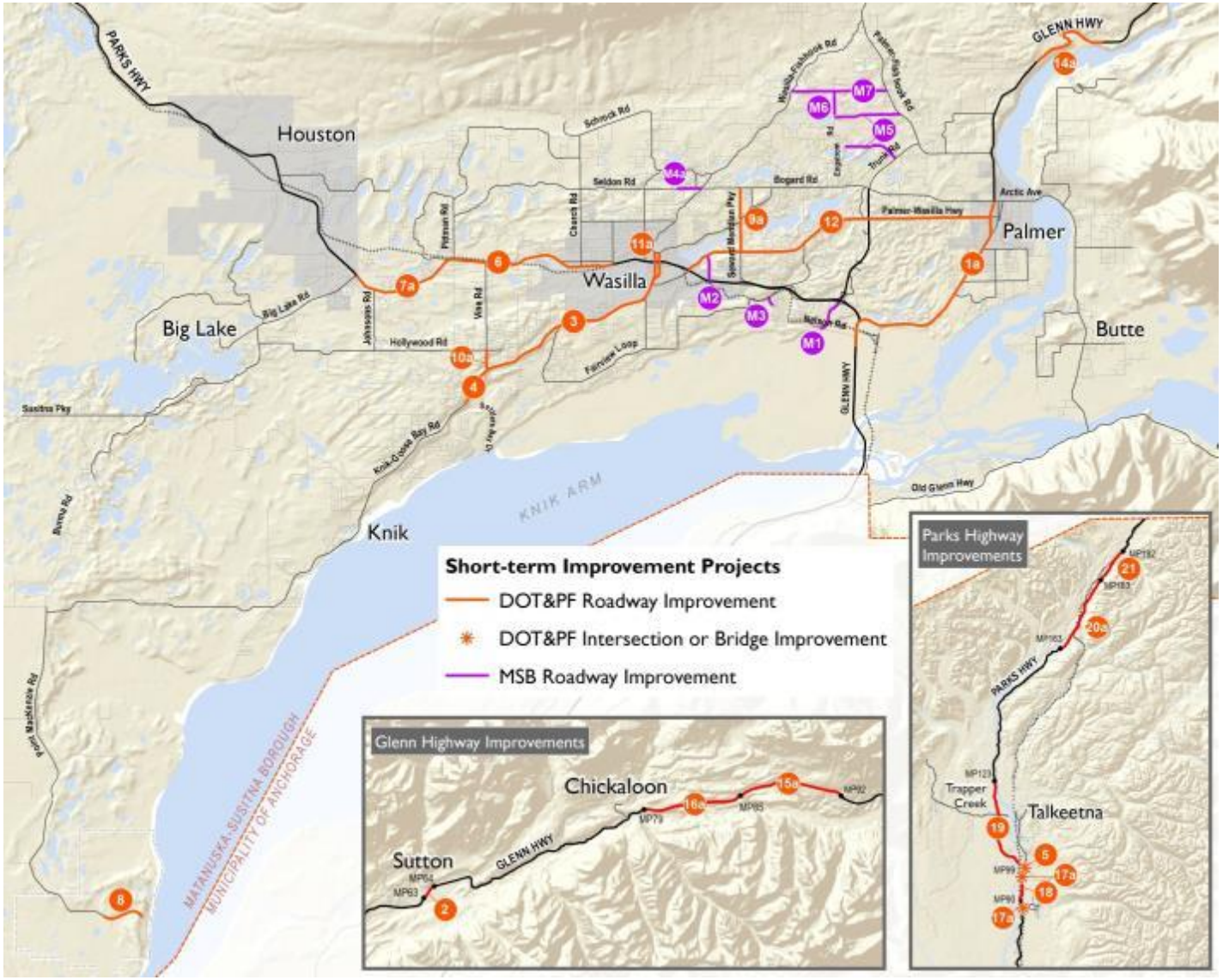
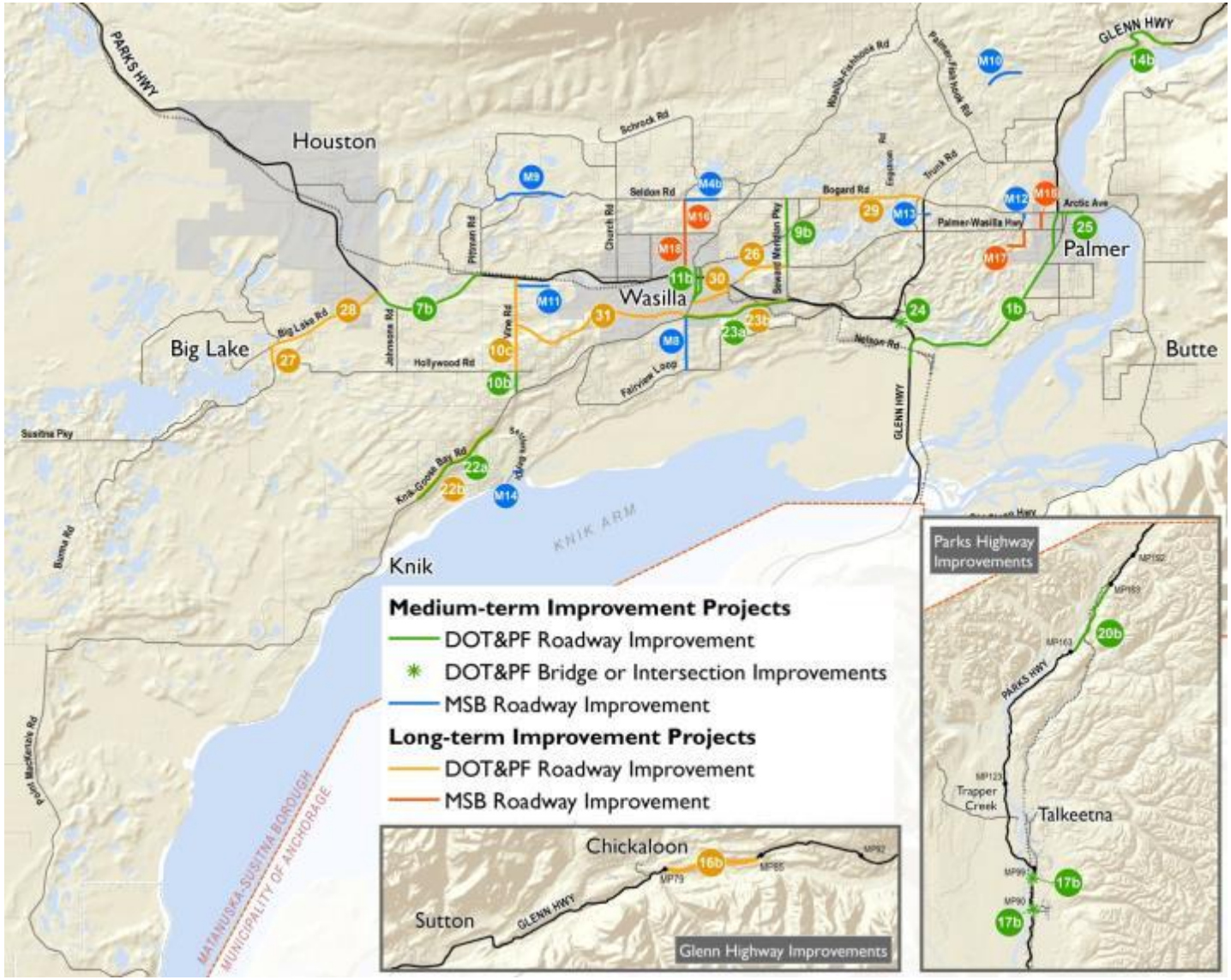


Figure 13. Mid- and Long-Term Roadway Recommendations



The MSB also has multiple recurring programs to be funded as part of future MSB road bonds (see Table 3).

Table 3. Recurring Programs

Project	FY 2018 Bond (Short Term)	FY 2022 Bond (Medium Term)	FY 2026 Bond (Long Term)
MSB Recurring Programs (Planning Studies, Safe Routes to Schools, Traffic Calming, Trails, Transit, Reconnaissance Studies)	$0.25 M	$0.5 M	$1.0 M
MSB Substandard Road Improvements	$1.0 M	$1.5 M	$2.0 M
MSB Substandard Bridge Improvements	$1.0 M	$1.5 M	$2.0 M
MSB Asset Management Program	$0.25 M	$0.5 M	$1.0 M
Total	$2.5 M	$4.0 M	$6.0 M

M = million

The MSB also has its annual **Fish Passage Program**, which funds the replacement of non-functioning culverts that hinder fish passage with either improved culverts or bridge structures. This program is funded through grants from the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, the Mat-Su Salmon Partnership, and other conservation organizations. The local match is covered with MSB non-bond revenues. This program is assumed to occur annually throughout the 20-year life of the LRTP at a cost of $1 million annually.

Voters passed a **2013 School Access Road Bond** that was only partially matched by the state. The MSB will continue to attempt to secure the remaining $14 million in state funds for these projects.

Neither the Fish Passage Program nor the state match for the 2013 School Access Road Bond package is included in the MSB fiscally constrained program.

Mega Projects

There are two mega-projects (Knik Arm Crossing and Parks Highway Alternative Corridor) that could have a dramatic impact on transportation in the MSB. The MSB needs to be aware of these projects and be prepared to address their effects on travel demands and patterns.

Knik Arm Crossing

The Knik Arm Crossing (KAC) would bridge Cook Inlet, creating a new connection between Anchorage and the MSB. The KAC was initially developed as an independent project through the Knik Arm Bridge and Toll Authority, but was transferred to DOT&PF in 2014. The KAC was put on hold by the state in 2016 due to the changing fiscal conditions, and there is no estimate as to when its development will

resume. As the status of the KAC becomes clearer, the LRTP should be revisited, as changed socioeconomic conditions and travel patterns will generate a need for road improvements in the Point MacKenzie area. This LRTP assumes that the Knik Arm Crossing will not be built by 2035.

Parks Highway Alternative Corridor

The Parks Highway Alternative Corridor (PHAC) is proposed as a new NHS controlled-access connection south of the existing Parks Highway beginning near the Seward Meridian Parkway and returning to the Parks Highway west of Pittman Road. This new corridor will relieve the growing traffic congestion in downtown Wasilla along the existing Parks Highway Corridor. Without the PHAC, the existing Parks Highway through Wasilla will need to be expanded to six or eight lanes. Widening this section of the Parks Highway is limited by the ARRC right-of-way as well as Wasilla Lake and Lake Lucille. It would also have negative impacts on the existing commercial district with significant construction and right-of-way costs.

The PHAC was originally being developed as a state General Fund project; however, given the state's current fiscal situation, it will likely be converted to a federally funded project. In all likelihood, it will take a combination of federal, state, and local resources to construct this project. The key element of this project is to secure the corridor rights-of-way as identified through the DOT&PF's *Parks Highway Alternative Corridor Project - Conceptual Corridor Plan*. Residential development continues along the proposed corridor and is increasing land values. As more growth and development occur, the cost to acquire the corridor will escalate to the point that the opportunity to preserve the corridor may be lost. An effort should be made by the affected governments to secure the corridor through purchase and corridor preservation actions. Both the first phase of the Parks Highway Alternative Corridor between Seward Meridian Parkway and Knik Goose Bay Road and the second phase between Knik Goose Bay Road and Vine Road are recommended as a long term project in this LRTP.

Chapter 7 Implementation Strategy

The purpose of this chapter is to provide a framework of action upon which the strategies presented throughout this LRTP can become reality. This chapter focuses on the actions the MSB should take in the next 2 to 4 years to implement multimodal solutions designed to improve safety, mobility, and transportation choices. It also includes activities to prepare for the next LRTP update and lessons learned from this LRTP effort.

Implement Transportation Partnership

The MSB should continue to develop and implement a transportation partnership program that creates an opportunity for improved regional involvement in major transportation projects by allowing the pooling of resources, enhanced public outreach, collaborative problem solving, and prioritized investments before a project is even designed. The partnership is designed to create a standard operating procedure for transportation projects to better serve the MSB, more effectively use staff, and better spend local, state, and federal funds.

Annual Transportation Program Action Plan

The MSB should continue the development of an Annual Transportation Program Action Plan to function as a tracking and reporting device. It will assist in short-term work flow and identify priorities for the year, responsibilities, and resources.

Filling Data Gaps

This LRTP Update was hampered by numerous data gaps and inconsistencies. The resolution of these data gaps would increase the accuracy and level of detail for subsequent LRTP updates and allow for better identification of long-term needs and more efficient program management. Data gaps include bicycle/pedestrian counts, sidewalk and trail location, building footprints, easements, and trails.

The MSB should also establish a process to update data as needed.

Seek New Funding

The MSB and the cities should continually seek new funding sources for capital projects, planning and environmental studies, data collection, and public engagement efforts. Sources may include local, state, or federal revenues, as well as partnership opportunities with non-profits, crowd-sourcing applications, or other innovative funding programs.

It is assumed that the MSB's growth will continue though at a slower pace over the near term as compared to the past 20 years. Once the state's fiscal outlook improves and economic activity improves, it is anticipated that the MSB's growth rate will increase. The MSB's strategic location relative to Anchorage, the availability of developable land, and its quality of life attributes will continue to make it a great place to live, recreate, work, and commute. These attributes provide the foundation to reasonably assert that the MSB should strive to secure a greater share of available transportation funds than other areas of the Alaska where growth has stabilized and have a well-developed transportation system.

Safety Education

The MSB should work with DOT&PF including its Highway Safety Office, law enforcement, and others to develop educational campaigns designed to improve transportation safety. Topics may include defensive driving, how to share the road with bicycles, and cold weather bicycling tips.

Consolidate Geographically Nearby Projects

As projects advance, the MSB should try to consolidate projects that are in proximity to each other to save time and money. For example, it is typically more cost-effective to develop improved non-motorized facilities at the same time as road improvements are being made, instead of constructing each project separately.

Public Awareness

Public Participation Plan

Development of a MSB Public Participation Plan with regards to transportation would help coordinate current efforts to engage the public. Through development of an easy-to-follow plan and implementation strategy, MSB decision-makers could more effectively engage the public, eliminate inefficiencies, and give additional opportunities for the public to weigh in on how public engagement could better reach all citizens.

Expand Public Engagement Efforts

Public engagement methods employed during this LRTP update targeted a broad audience. The MSB should continue to explore new and emerging public engagement strategies to reach new stakeholders. They should also continue to identify ways to reach out to the traditionally underserved populations to ensure they are able to participate in the process.

Publish Executive Summary and LRTP on MSB website

To increase awareness of this LRTP and its contents, the MSB should publish this LRTP and its executive summary on the MSB website.

MSB LRTP Roadshow

The MSB should create a brief, broad-reaching “roadshow” to help publicize the LRTP’s goals, objectives, performance measures, and implementation strategy. This roadshow could be displayed, presented, or created in a web-friendly format to help educate others on the finalized LRTP.

Increase Awareness of Government Impacts on Land Use and Transportation

The MSB and Cities of Palmer, Wasilla, and Houston should consider the impacts of their decisions as they affect the built environment and development to (1) ensure they are not creating barriers and (2) effectively encourage compact, dense, mixed-use, transit-friendly development where appropriate.

Roadway

Review Project Priorities

The projects listed in this LRTP have undergone an initial prioritization process. This prioritization should be reviewed periodically to include new projects and change priorities if new funding or information becomes available.

Develop connection between LRTP and CIP

The MSB should strengthen the connection between the LRTP and their Capital Improvement Program (CIP). The CIP should be consistent with the LRTP. Transportation projects included in the CIP should originate in the LRTP (for roads that are functionally classed as a collector or higher). As the LRTP gets updated, individual projects should move closer to being in the CIP through the LRTP's prioritization process.

Update Needs List

The MSB should update the list of needed transportation projects as they are identified so they can be assessed as part of the next update.

Update Official Streets & Highways Plan (OS&HP)

The MSB's 2007 OSHP is a valuable tool for MSB staff and administrators. The OSHP should be updated to reflect the projects proposed in this LRTP and needed collector roads and connections. The current OSHP is static. The new OSHP should be a living document that can be easily updated by MSB Planning staff as project priorities are updated, as projects are constructed, and when new developments are proposed.

Collector Road Network

A well-functioning collector road system within the MSB will require a proactive strategy to identify where collector roads will provide the greatest benefits to the overall MSB roadway network and to the traveling public. The MSB's plan to develop an interactive Official Streets and Highway Plan will provide the platform to identify key collector road connections and corridors. Using this tool, informed decisions can be made relative to collector road requirements as new commercial, institutional, and residential developments are advanced and platted. Platting regulations and MSB Collector Road construction standards should be reviewed and updated as necessary to address the construction of new collector roads or the preservation of sufficient right-of-way to construct a collector road in the future. Funding options need to be assessed and should include a framework for developer contributions.

Continue to Identify and Track Traffic Generation Rates

To help identify when road and intersection improvements are needed, the MSB should continue current studies for localized traffic generation rates for various land uses to inform future decision making.

Traffic Signal System Management Program

The MSB should work with DOT&PF and the Cities of Palmer and Wasilla to pursue funding for a Traffic Signal System Management Program.

Asset Management

The MSB should continue to work with DOT&PF and others to monitor, and manage, the condition of the transportation system to preserve its condition and system performance. This includes developing a program to manage driveway and roadway access to major collectors and arterials to improve safety and functionality in order to protect the public investment in these routes.

Update Travel Model

The MSB Travel Model relies on population and employment forecasts. These forecasts should be revised before every LRTP update. The underlying assumptions in the model about population, employment, trip generation, and other factors are over 10 years old. The MSB should update the model to ensure it reflects existing conditions.

The version of TransCAD used by the MSB Travel Model is several years old. Its age creates problems when the model is run. Before the next LRTP update, the MSB, with DOT&PF and the MOA, should consider upgrading to the newer TransCAD model interface.

The existing model is a regional model that includes Anchorage. The MSB should work with DOT&PF and the MOA to determine if a regional model should be kept, and develop processes to update the MOA and MSB sides of the model, utilizing consistent assumptions, model years, and update processes.

In the future, as walking, biking, and transit use increase, the MSB should consider using and expanding the mode choice component to the model.

Palmer Wasilla Highway Action Plan

There is a need to address the traffic, safety and congestion issues on the Palmer Wasilla Highway that goes beyond its ultimate widening to a five-lane facility. Both north and south of the Palmer Wasilla Highway there is a lack of connectivity among the local roads and a lack of an adequate collector road system to funnel local traffic to the highway. There is a need to connect subdivisions with local roads and to develop a parallel collector road system to funnel this traffic to established signalized intersections. A Palmer Wasilla Highway Action Plan should be developed in the near term to guide the state and MSB with regard to subdivision approvals, where local road connections are needed, potential parallel collector roads, shared access points, driveway permitting, and other policies needed to address the many issues related to the Palmer Wasilla Highway.

Transit, Taxi, and Ride-Sharing

Support Completion and Implementation of Transit Consolidation

The MSB should support the completion and implementation of the transit consolidation effort. The results of the Mat-Su Transit Feasibility Assessment and Plan should be incorporated into the LRTP either during the next plan update or as an addendum to this plan.

Support Transit Providers to Develop Long-Range Transit Vision

The MSB should help identify funding to develop a Long-Range Transit Vision. This effort should be led by the transit providers with support from the MSB. Once a vision has been established, the MSB can pursue land use changes and other measures to implement the desired transit system.

Contact Ride Sharing Services

The MSB should contact ride-sharing services such as Share-a-Ride (Anchorage), UberPOOL, or Lyft Line to identify how the MSB can facilitate the establishment of on-demand and pre-arranged ride-sharing services.

Land Use

Comprehensive Plan Update

The MSB should identify funding and initiate a MSB Comprehensive Plan update. Plans are typically updated every 10 years, and the existing Comprehensive Plan was last updated in 2005.

Transit Supportive Land Use

Once the Long-Range Transit Vision has been established, the MSB should identify locations for transit-supportive land uses and develop appropriate land use regulations.

Identify Major Activity, Employment, and Residential Centers

The MSB should identify major activity, employment, and residential centers to help guide land use and transportation decisions.

Subdivision Construction Manual Update

The MSB Subdivision Construction manual is a base policy that guides design, construction, platting and permitting decisions for subdivision of land throughout the MSB. The manual was created in 1991 and has incorporated minor updates since this time. The manual currently contains inconsistencies with current best practices for the MSB's rapid growth, resulting in unanticipated costs both to developers and to the MSB Public Works Department. A basic update to the manual might include 1) updated references to include current MSB and state guidelines; 2) updates to currently adopted roadway classifications; 3) updates to storm drain systems and runoff requirements in anticipation of MS4; and 4) coordination and updates as needed regarding references in/to MSB Title 10: Vehicles and Traffic; Title 11: Rpads Streets. Sidewalks and Trails; Title 15: Planning; Title 17: Zoning; Title 19: Schools; and Title 43: Subdivisions.

Active Transportation

Develop Active Transportation Work Plan

Active Transportation has proven to help combat health concerns in communities across the United States. The MSB should proceed with development of an active transportation work plan to strategically align non-motorized, human-powered transportation with other modes of transportation. Development of an Active Transportation Work Plan will provide greater detail for transportation funding decisions while connecting active transportation with the resulting community health benefits to help address growing issues in the health of youth and seniors alike.

Continue Coordination with MSB School District Regarding Safe Routes to Schools (SRTS)

The MSB should continue coordinating with the MSB School District about SRTS to increase the ability of students to walk or bike to school. They should work together to implement existing recommendations and to complete Safe Routes to School studies for the remaining schools. These routes have the potential to reduce congestion near schools, increase student activity levels, and reduce the school district's transportation costs.

Proactively Support Active Transportation Provisions with Highway Facility Improvements

The MSB should continue to work with DOT&PF to incorporate active transportation provisions, such as sidewalks and trails, as part of roadway improvements.

Prepare a Regional Trail Map Reflecting Trail Systems

The MSB should prepare a regional trail map to educate people about where and how they can travel around the MSB using active transportation, as well as support local tourism opportunities to the MSB's vast outdoor recreational areas.

LRTP Update

Completion of this LRTP is a milestone for the MSB's long range transportation planning efforts. However, planning is a continual process that needs regular updates to reflect changing conditions. Figure 14 shows the cyclical natural of transportation planning. The process allows for continual improvement with future updates that would learn from and improve on previous plans.

After completion of this LRTP planning process, the project team has identified opportunities for improvement of the overall process, as well as areas for improvement in technical content needed for future planning.

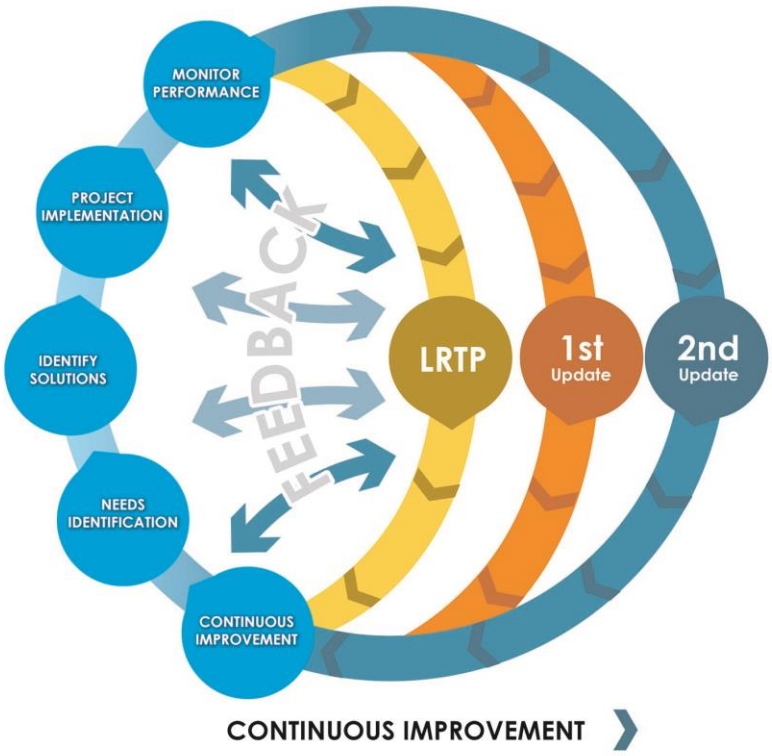
Opportunities for Planning Process Improvement

Some potential issues to be considered, not in order of priority, to improve the planning process and results during the next LRTP update include:

- Conduct additional coordination with the Cities of Palmer, Wasilla, and Houston.
- Clarify roles, assigned staff, and responsibilities for the LRTP's Technical Advisory Committee (TAC).
- Expand the membership of the LRTP's TAC.

- Identify how to respond to changes in MSB and DOT&PF leadership, staff, updated comprehensive and individual work plans, changing conditions, and other issues that emerge during the planning process.
- Expand the public engagement process to hard-to-reach stakeholders such as youth, persons with disabilities, and low-income families.
- Improve data availability on location, type, condition, and use of transportation systems.

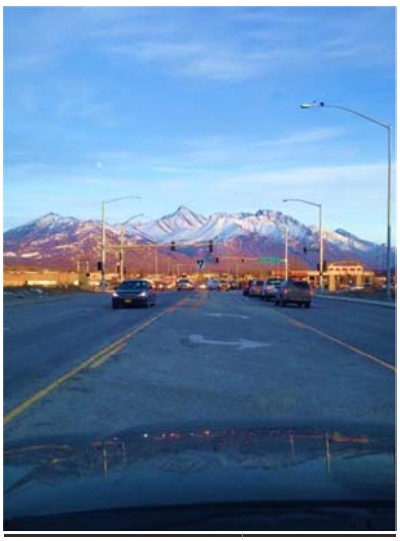
Figure 14. Transportation Planning Process



- Conduct additional coordination with resource agencies.
- Keep a record of implemented projects as evaluation benchmarks. Subsequent LRTP updates should acknowledge completed projects to show progress over the planning horizon.
- In preparation for possible MPO designation, conduct fiscal constraint analysis that complies with federal requirement in coordination with DOT&PF.
- Continue work plan in preparation for anticipated MPO designation.

Annual Monitoring and Reporting

The MSB should identify targets and collect data for the performance measures identified in Chapter 2 for monitoring and reporting in a bi-annual Performance Management Report and other transportation planning efforts. The MSB should consider public engagement strategies to collect feedback from residents regarding the transportation system.



MSB LRTP

Matanuska-Susitna Borough

2035

Matanuska-Susitna Borough

Long Range Transportation Plan

Appendix A

ADOPTED

December 2017

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Attachments

Abbreviations

AAB	Aviation Advisory Board
AADT	Annual Average Daily Traffic
AASP	Alaska Aviation System Plan
ACS	American Community Survey
AMATS	Anchorage Metropolitan Area Transportation Solutions
AMP	Airport Master Plan
APV	Accident Prediction Value
ARRC	Alaska Railroad Corporation
CATS	Chickaloon Area Transit System
CMAQ	Congestion Mitigation/Air Quality
DHHS	Department of Health and Human Services
DOL&WD	Department of Labor & Workforce Development
DOT	U.S. Department of Transportation
DOT&PF	Alaska Department of Transportation and Public Facilities
FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FASTLANE	Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FNSB	Fairbanks North Star Borough
FTA	Federal Transit Administration
FY	Fiscal Year
HSIP	Highway Safety Improvement Plan
IFR	Instrument Flight Rules
JBER	Joint Base Elmendorf-Richardson
KPB	Kenai Peninsula Borough
LOS	Level of Service
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
MASCOT	Mat-Su Community Transit
MLLW	Mean Lower Low Water
MOA	Municipality of Anchorage
MP	Milepost
MPO	Metropolitan Planning Organization
MSB	Matanuska-Susitna Borough
NBI	National Bridge Inventory
NHPP	National Highway Performance Program
NHS	National Highway System
NPIAS	National Plan of Integrated Airport Systems
NSB	North Slope Borough

PAPI	Precision Approach Path Indicator
PPP	Public-Private Partnership
QCEW	Quarterly Census of Employment and Wages
RASP	Regional Aviation System Plan
RHE	Rail Hazard Elimination Program
RMC	Regional Transit Maintenance Center
RSA	Road Service Area
RTP	Recreational Trails Program
SHPO	Alaska State Historic Preservation Officer
STIP	Statewide Transportation Improvement Program
STBGP	Surface Transportation Block Group Program
TA	Transportation Alternatives
TAC	Technical Advisory Committee
TAZ	Traffic Analysis Zone
TDM	Transportation Demand Management
TSM	Transportation System Management
UZA	Urbanized Area
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VPD	Vehicles per Day
VOR	VHF Omni-directional Radio Range
WBAPS	Web Based Accident Prediction System

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Chapter 1
Introduction

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Chapter 1 Introduction

This technical appendix is a companion document to the Matanuska-Susitna Borough (MSB) 2035 Long Range Transportation Plan (LRTP). This appendix provides additional detail about components of the plan including demographic data, roadway, rail, aviation, marine, and environmental considerations. For information of the LRTP recommendations, please see the LRTP document available under a separate cover.

This document includes the following chapters:

- Chapter 1 – Introduction
- Chapter 2 – Population and Economics
- Chapter 3 – Existing Conditions
- Chapter 4 – Financial Constraints
- Chapter 5 – Roadway Recommendations
- Chapter 6 – Transportation Improvement Strategies
- Chapter 7 – Air Transportation
- Chapter 8 – Rail Transportation
- Chapter 9 – Marine and Waterborne Transportation
- Chapter 10 – Environmental Analysis

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Chapter 2
Population and Economics

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Chapter 2 Population and Economics

Knik-Fairview is the fastest growing community in the MSB. It is located along the northwest shore of Knik Arm, heading toward Port MacKenzie. Knik-Fairview grew by more than 100 percent in the last decade. Its 2010 population of 14,923 is greater than MSB's two largest cities, Palmer and Wasilla, combined.

It is important to understand the composition of an area's population and the structure of its economy when looking at transportation patterns and trends. The population and economy of a region have an immense impact on transportation, creating traffic and travel patterns. More people, jobs, and commercial and recreational activity generate traffic as does higher income levels. Different types of industries also have different transportation needs. Some industries (e.g., construction) need to be able to transport heavy loads, while others (e.g., hotels and restaurants) need easy access and high visibility. Some jobs (e.g., retail and food service) are associated with a high number of trips, while others (e.g., storage facilities) have very low trip generation rates. As result, understanding social and economic characteristics is an important consideration in understanding travel behavior.

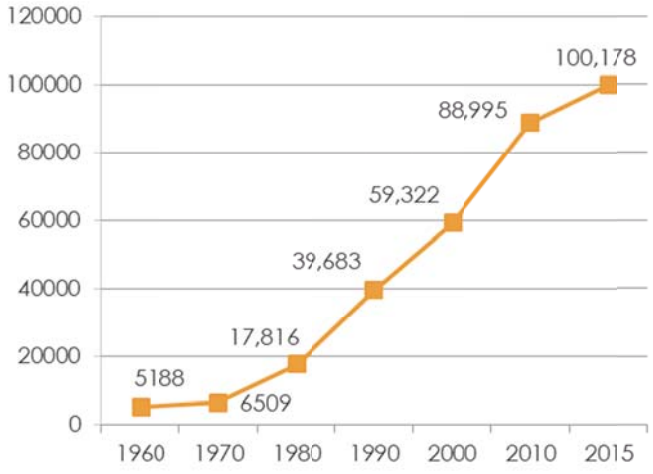
It is also important to understand demographics in order to effectively solicit input into the planning process. For example, if a community has a high percentage of families with children, having family friendly outreach activities may get more participation than a traditional public meeting.

This chapter is based on data from a variety of sources. The most recent data was used because it best reflects existing conditions but the year reported varies by data set.

Historic Population Trends

The MSB has been Alaska's fastest growing region for the last three decades (see Figure 1**Error! Reference source not found.**) and has a 2015 population of 100,178 according to the Alaska Department of Labor and Workforce Development (DOL&WD).[1]

Figure 1. MSB Population Trends, 1960-2015



Source: Department of Labor and Workforce Development, 2015

The MSB is approximately 24,682 square miles, making it similar in size to West Virginia. Most of its residents live in the southern portion of the MSB in a corridor between the communities of Willow, on the Parks Highway, and Sutton, on the Glenn Highway. There are three cities in the MSB: Wasilla, Palmer, and Houston. Approximately 17.6 percent of the MSB population lives in one of these three cities. The rest of the population lives in unincorporated areas. Table 1 depicts an overview of the MSB's demographics.

Table 1. MSB Demographic Data, 1990, 2000, 2010, and 2014

	1990	2000	2010	2014
Total households	13,394	20,556	31,824	31,104
Average number of persons per household	2.92	2.84	2.84	2.96
Average number of persons per family	3.37	3.29	3.23	3.47
Male residents	20,605 (51.9%)	30,831 (51.9%)	46,040 (51.7%)	51,799 (51.7%)
Female residents	19,078 (48.1%)	28,491 (48.1%)	42,955 (48.3%)	48,379 (48.3%)
Students enrolled in MSB	8,851 [1]	12,513 [1]	16,869[2]	18,364[2]

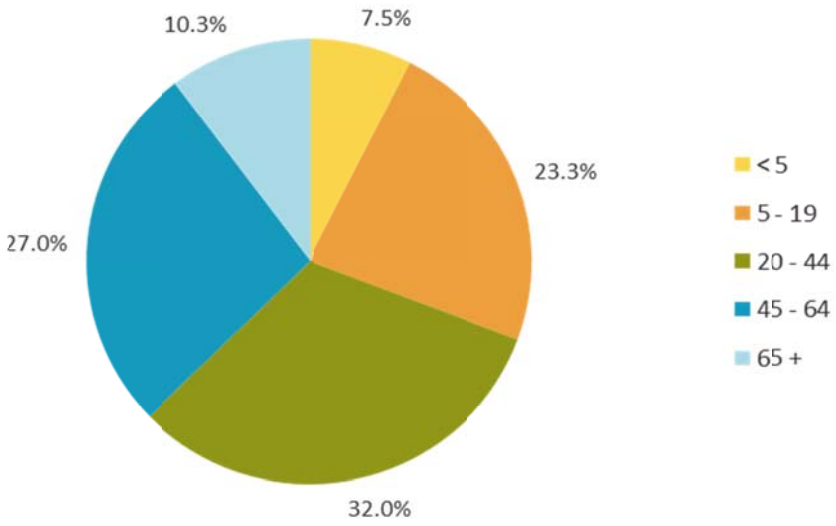
[1] DOL&WD. 2016. 2015 Population Estimates by Borough, Census Area, and Economic Region. Available on the internet at http://live.laborstats.alaska.gov/pop/index.cfm

[1] 2007 LRTP
[2] Alaska Department of Education and Early Development, Assessment and Accountability [2 3]
Sources: U.S. Census, 2007 LRTP, DOL&WD, and Alaska Department of Education and Early Development, Assessment and Accountability

Age

In 2015, the biggest age group was 20 to 44-year-olds with 32.0 percent (32,105) of the MSB population (see Figure 2). This age group grew by 3,329 between 2010 and 2015.

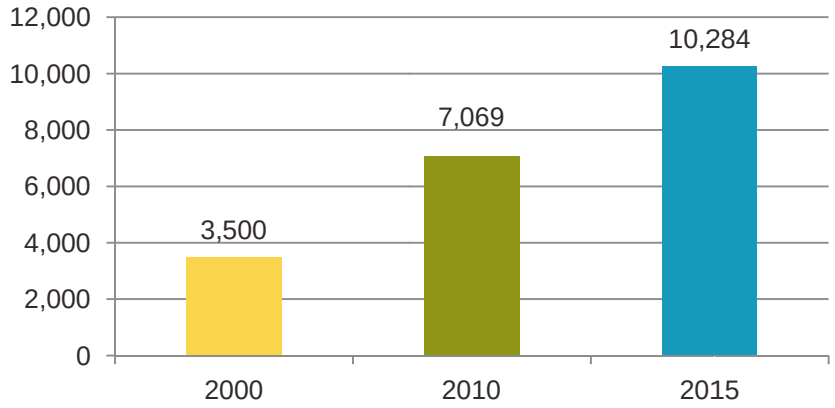
Figure 2. MSB Population by Age Group, 2015



The age group with the biggest change since 2000 was individuals 65 years and older (see Figure 3). The number of individuals in this age group has almost tripled since 2000.

[2] Alaska Department of Education and Early Development, Assessment and Accountability. 2011. District Enrollment as of October 1, 2010, FY2011. Available on the internet at https://education.alaska.gov/stats/DistrictEnrollment/2011DistrictEnrollment.pdf
[3] Alaska Department of Education and Early Development, Assessment and Accountability. 2016. District Enrollment as of October 1, 2015, FY2016. Available on the internet at https://education.alaska.gov/stats/DistrictEnrollment/2016DistrictEnrollment.pdf

Figure 3. Individuals 65 Years of Age and Older



Race

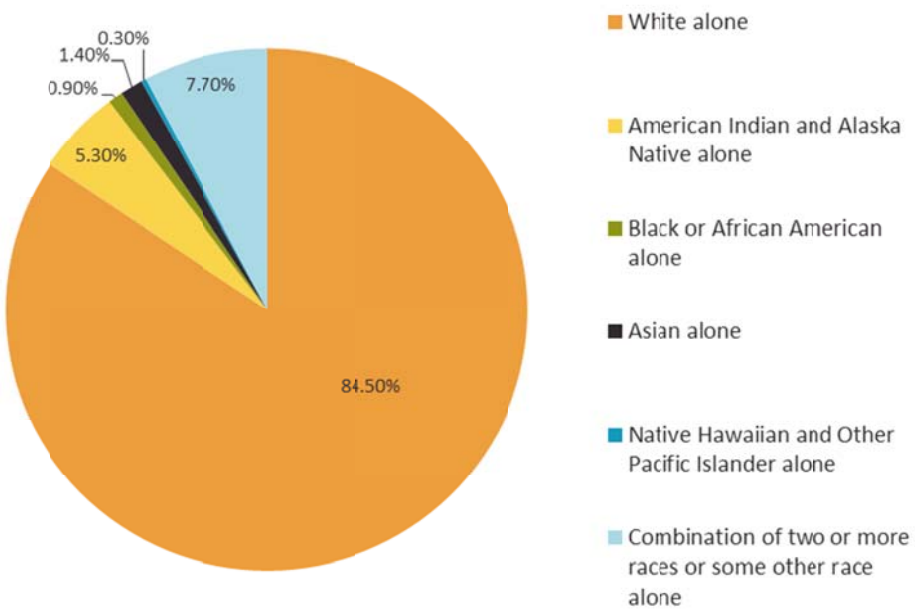
Table 2 and Figure 4 depict the MSB's population broken down by race. In general, the MSB is less racially diverse than the State as a whole, is becoming more diverse.

Table 2. MSB Racial Composition – 1990, 2000, 2010, and 2014

	1990	2000	2010	2014
Race – White alone	36,905 (93%)	51,938 (87.6%)	75,540 (84.9%)	79,273 (84.5)
Race – Percentage Non-White	7%	12.4%	15.1%	(15.5%)
Race – American Indian and Alaska Native Alone	1,808 (4.9%)	3,264 (5.5%)	4,901 (5.5%)	5,005 (5.3%)
Race – Black or African American Alone	295 (0.8%)	411 (0.7%)	856 (1.0%)	845 (0.9%)
Race – Asian Alone	258 (0.7%)	414 (0.7%)	1,096 (1.2%)	1,294 (1.4%)
Race – Native Hawaiian and Other Pacific Islander Alone		74 (0.1%)	221 (0.2%)	243 (0.3%)
Race – Combination of two or more races or some other race alone	191 (0.5%)	3,221 (5.4%)	6,381 (7.2%)	7,183 (7.7%)

Source: U.S. Census

Figure 4. MSB Population Percentage by Race, 2014



Housing Units and Household Income

A housing unit[4] is an important factor in transportation planning because it is the place where the majority of trips begin and end. According to the *Matanuska-Susitna Borough 2014 Housing Needs Assessment*, there are 40,578 *housing units* in the MSB. Of these, 30,932 (76.2 percent) were occupied and 9,655 (23.8 percent) were vacant. Of the vacant units, the majority are for seasonal, recreational, or occasional use.

According to the 2010-2014 ACS, the median household income in the MSB was $72,134 in 2014; the median family income was slightly higher at $82,369; and the per capita income was $30,013.

Economic Trends

Economic activity, such as the number of households and median income of a community, has a direct relationship to transportation demand. Generally speaking, the number of trips taken is directly related to the level of economic activity within a community. Economic activity also influences the type of travel taking place.

[4] A *housing unit* is a house, apartment, mobile home or trailer, group of rooms, or single room occupied as separate living quarters and can be occupied or empty; a *household* includes all the people who occupy a housing unit as their usual place of residence.

The MSB is a unique Alaska economic region in several aspects. The MSB has been characterized by rapid population growth during the past five decades. No other area of the State has come close to the MSB's record population and employment growth. The MSB is also unique in that substantial portion of the economic activity in the MSB is the product of MSB residents working in the MOA and spending their income within MSB's local economy. The MSB is experiencing employment growth in businesses and institutions that are providing a wider range of goods and services to its growing population.

Employment and Earnings

Local travel patterns are influenced by the number and type of jobs held by MSB residents as well as the number and type of jobs available in the MSB. Table 3, below, shows the number of workers who live in the MSB by industry.

Table 3. Number of Workers by Industry Residing in the MSB, 2012

	Number of workers	Percent of total employed
Natural Resources and Mining	2,954	7.7
Construction	4,225	11
Manufacturing	514	1.3
Trade, Transportation, and Utilities	8,006	20.8
Information	990	2.6
Financial Activities	1,280	3.3
Professional and Business Services	3,339	8.7
Educational and Health Services	5,887	15.3
Leisure and Hospitality	3,558	9.3
State Government	2,413	6.3
Local Government	4,336	11.3
Other	957	2.5
Unknown	4	0

Source: DOL&WD

Earnings by Place of Work

According to the Quarterly Census of Employment and Wages (QCEW), the annual earnings of persons employed in the MSB was $975,754,876 in 2015.[5, 6] One of the reasons many residents

[5] The QCEW information is derived from Unemployment Insurance programs in the US. Employment covered by these programs represents approximately 97% of all wage and salary civilian employment. Major exclusions from unemployment insurance include self-employed workers, most agricultural workers, members of the Armed Forces, and elected officials.

choose to work outside the MSB is because the wages are often higher. In 2015, the average monthly wage in the MSB was $3,561 compared to $4,732 in Anchorage. Even higher wages can be earned on the North Slope and elsewhere.

Labor Force

According to the 2013 ACS 5-year estimate, the MSB's labor force consisted of 44,152 persons (64.5 percent of the MSB's population), up from 24,981 in 2000 and 17,971 in 1990. Approximately 6.7 percent were unemployed in 2013, which is the same as 2000 but lower than the 11.6 percent rate of unemployment in 1990.

Figure 5 depicts the work locations for MSB residents in 2010. According to the DOL&WD, in 2010, 45 percent of MSB's employed residents worked outside the Borough.

Figure 5. Where MSB Residents Work, 2010

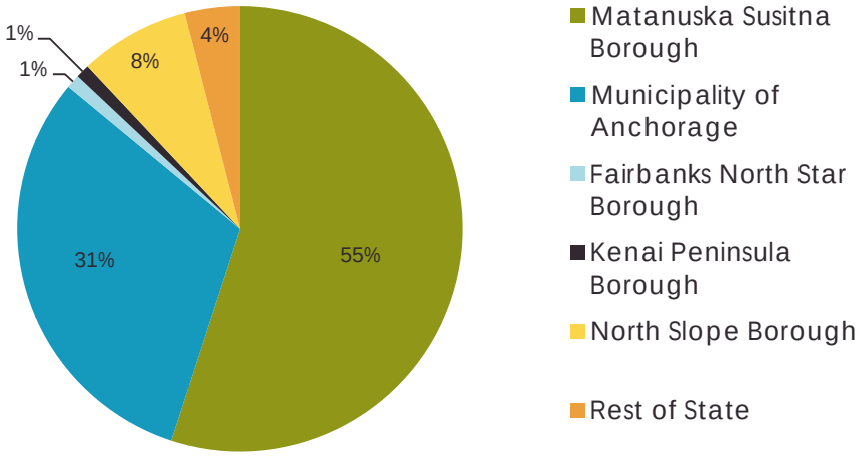


Table 4 shows the travel patterns of employed MSB residents.

[6] DOL&WD. 2015. Preliminary Annual Employment and Wages January – December 2015. Available on the internet at: http://live.laborstats.alaska.gov/qcew/ee15.pdf

Table 4. MSB Home-to-Work Travel Patterns, 1990, 2000, 2005, and 2012

Travel Mode	1990	2000	2005	2012
Worked at Home	812	1,547	1,058	2,347
Drove Alone to Work	10,380	16,988	23,451	26,703
Car Pooled	2,559	4,021	6,753	5,153
Used Public Transportation	33	160	96	320
Other	1,786	1,933	2,037	2,750
Total	15,570	24,649	33,395	37,273

Note: Numbers are for workers 16 years and older. Other commute methods include bus, railroad, motorcycle, bicycle, walking, or other means.
Sources: ACS, U.S. Census Bureau 2000, 2005, and 2012.

Table 5 shows the time it takes MSB residents to travel to work. According to the ACS, the mean travel time to work in 2000 was 40.7 minutes, which means the average commute time has decreased by nearly 8 minutes between 2000 and 2012.

Table 5. MSB Travel Time to Work, 1990, 2000, and 2012

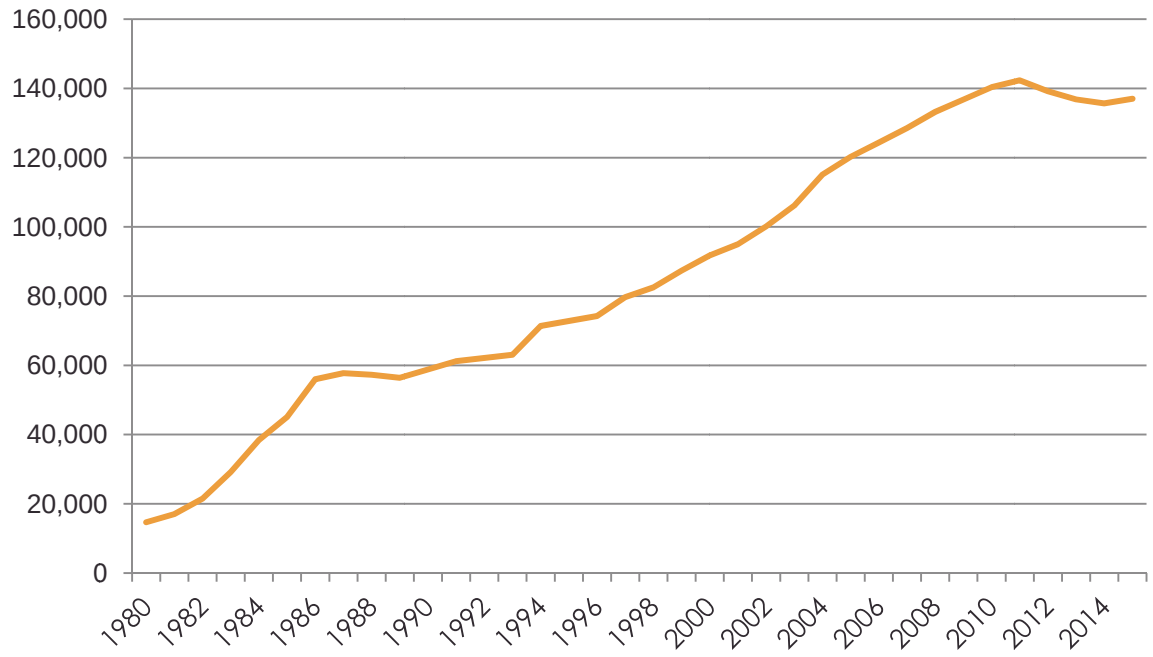
Time in Minutes	1990		2000		2012	
	# Persons	Percent	# Persons	Percent	# Persons	Percent
< 10	3,064	20.7%	3,416	14.8%	4,447	19.8%
10 to 14	2,075	14%	2,995	13.0%	4,278	19.0%
15 to 19	1,859	12.6%	2,841	12.3%	4,754	21.1%
20 to 24	1,242	8.4%	2,072	9.0%	3,260	14.5%
25 to 29	301	2.1%	777	3.4%	973	4.3%
30 to 34	753	5.1%	1,580	6.8%	2,190	9.7%
35 to 44	368	2.5%	895	3.9%	368	1.6%
45 to 59	1,199	8.1%	2,406	10.4%	264	1.2%
60 to 89	2,817	19.1%	3,784	16.4%	921	4.1%
90 >	1,080	7.3%	2,336	10.1%	809	3.6%
Total	14,758	99.9%	23,102	100.1%	22,504	100%

Source: U.S. Census Bureau

Registered Vehicles

As the MSB's population has grown, so has the number of registered vehicles (see Figure 6). The number of vehicles is an indicator of the high dependency MSB residents have on automobiles. The number of registered vehicles includes passenger, motorcycle, commercial trailer, trailer, commercial truck, pickup, bus, and snowmobile. The number of registered vehicles has generally increased between 1980 and 2011. In 2012, 2013, and 2014, the number of registered vehicles declined slightly before rising again in 2015.

Figure 6. Number of Registered Vehicles in the MSB, 1980–2015



Source: Alaska Department of Motor Vehicles
Note: Data not available for 1990, 1992, and 1995.

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Chapter 3
Existing Conditions

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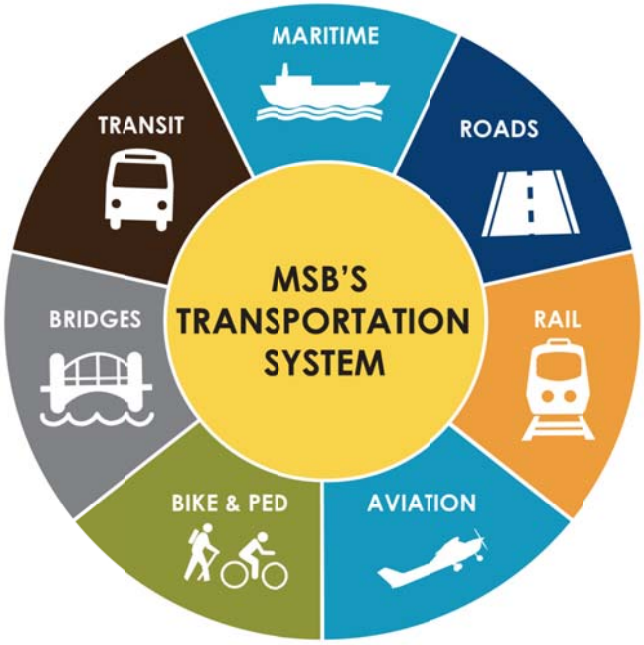
Chapter 3 Existing Conditions

This chapter includes an overview of surface transportation details such as roadway traffic volumes, functional classification, level of service, safety, transit operations, and bike and pedestrian facilities. Rail, aviation, and marine are specialized modes that are described in Chapters 7, 8, and 9.



Roadway System

Highways and roads are the primary transportation system in the MSB. The movement of people and goods requires an efficient transportation network from origin to destination.

The MSB road system is evolving from a meandering system of narrow roadways that connected communities, farms, and mining districts to its current system of Interstate Highways, arterials, collectors, and supporting local roads. Roads in the MSB are owned and maintained by DOT&PF; MSB and its RSAs; and the Cities of Houston, Palmer, and Wasilla; and a few roads are owned by the Chickaloon Village. Many improvements has been made in the last 20 years, including upgrading portions of the Glenn and Parks Highways to controlled access freeways, constructing new arterial roadways such as new sections of the Bogard/Seldon Corridor, Seward Meridian Parkway, and the new Trunk Road, improving the collector road network such as Mack Road Extension, Vine Road, and realigning South Big Lake Road. Several more projects are being implemented that will continue to upgrade the MSB road system.

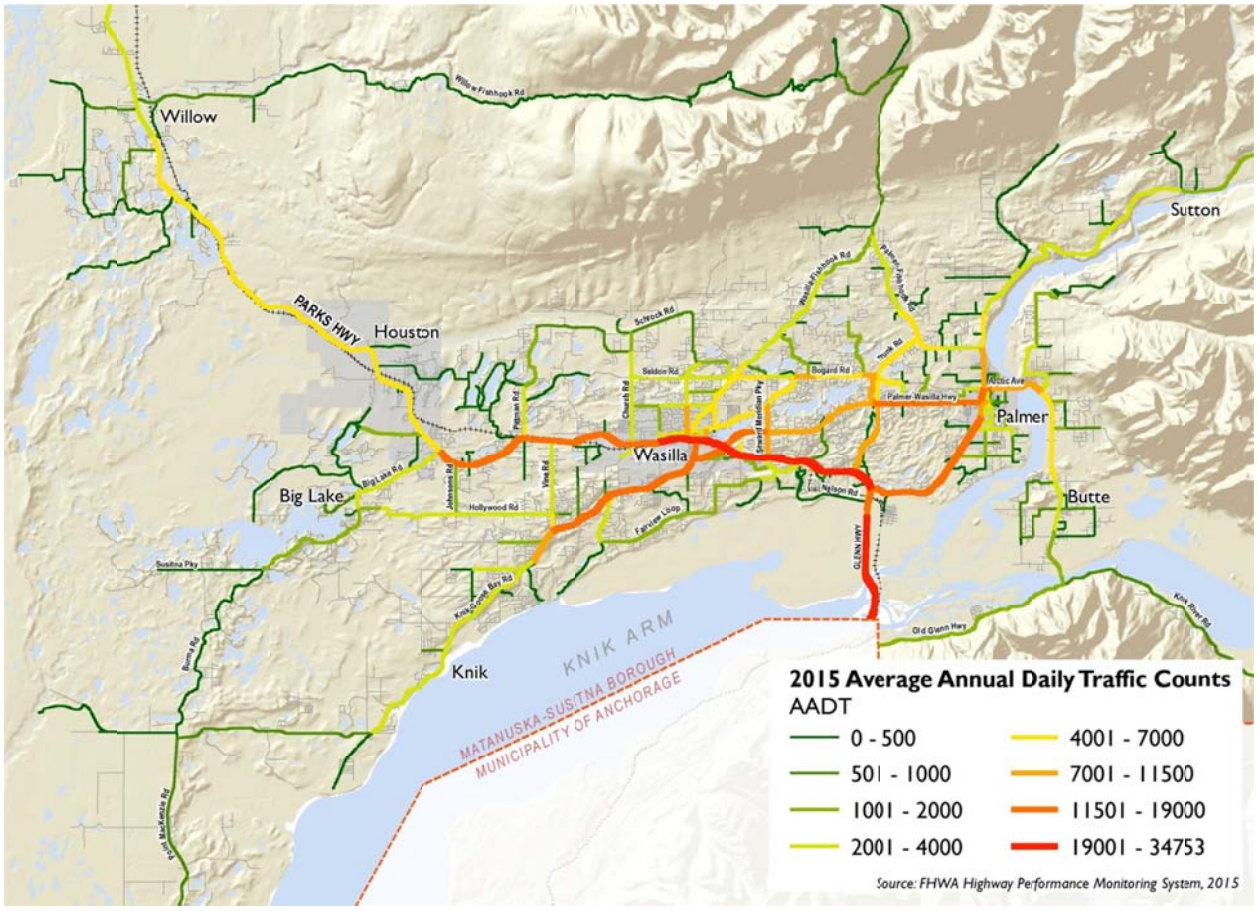
However, the ongoing rapid growth and low density development pattern of the MSB means additional roadway improvements are needed. For example, the Palmer-Wasilla Highway, is a key arterial connection between Palmer and Wasilla carries high traffic volumes and has uncontrolled access. This arterial connection also serves as a local road because many adjacent subdivisions are neither interconnected nor accessed by collector-level roads. Residents must use the Palmer-Wasilla Highway to travel less than one-quarter mile to access adjoining businesses or to visit neighbors. The collector road network needs to be expanded, to improve subdivision connectivity and reduce local traffic accessing arterials to make short trips.

Understanding the existing roadway system in the MSB, how well it functions today, important safety concerns, level of service, and other factors will aid in making sound project decisions to address current limitations and future needs. This chapter lays the foundation of informed decision making.

Annual Average Daily Traffic

Annual Average Daily Traffic (AADT) is a helpful tool in understanding traffic patterns. AADT is the annual traffic volume on a given roadway segment divided by the number of days in the year. AADT can be used to identify areas that may have increased wear or need improvements to handle the existing traffic volumes. The 2013 AADT is shown on Figure 7.

Figure 7. Annual Average Daily Traffic, 2015



Functional Classification

Functional classification assigns roadways categories according to the role they are expected to play in the movement of traffic. There are three basic functional classifications:

Courtesy of DOT&PF

- **Arterial:** These roads provide mobility so traffic can move from one place to another quickly and safely. Arterials are expected to be largely accessed controlled with a minimal number of intersections or interchanges.
- **Collector:** These roads link arterials and local roads and perform some duties of each. Collectors have some access control and a moderate number of intersections and driveways.
- **Local:** These roads provide access to homes, businesses, and other property. Local roads do not have any access controls and can have frequent intersections or driveways.

Table 6 summarizes the MSB functional classification and

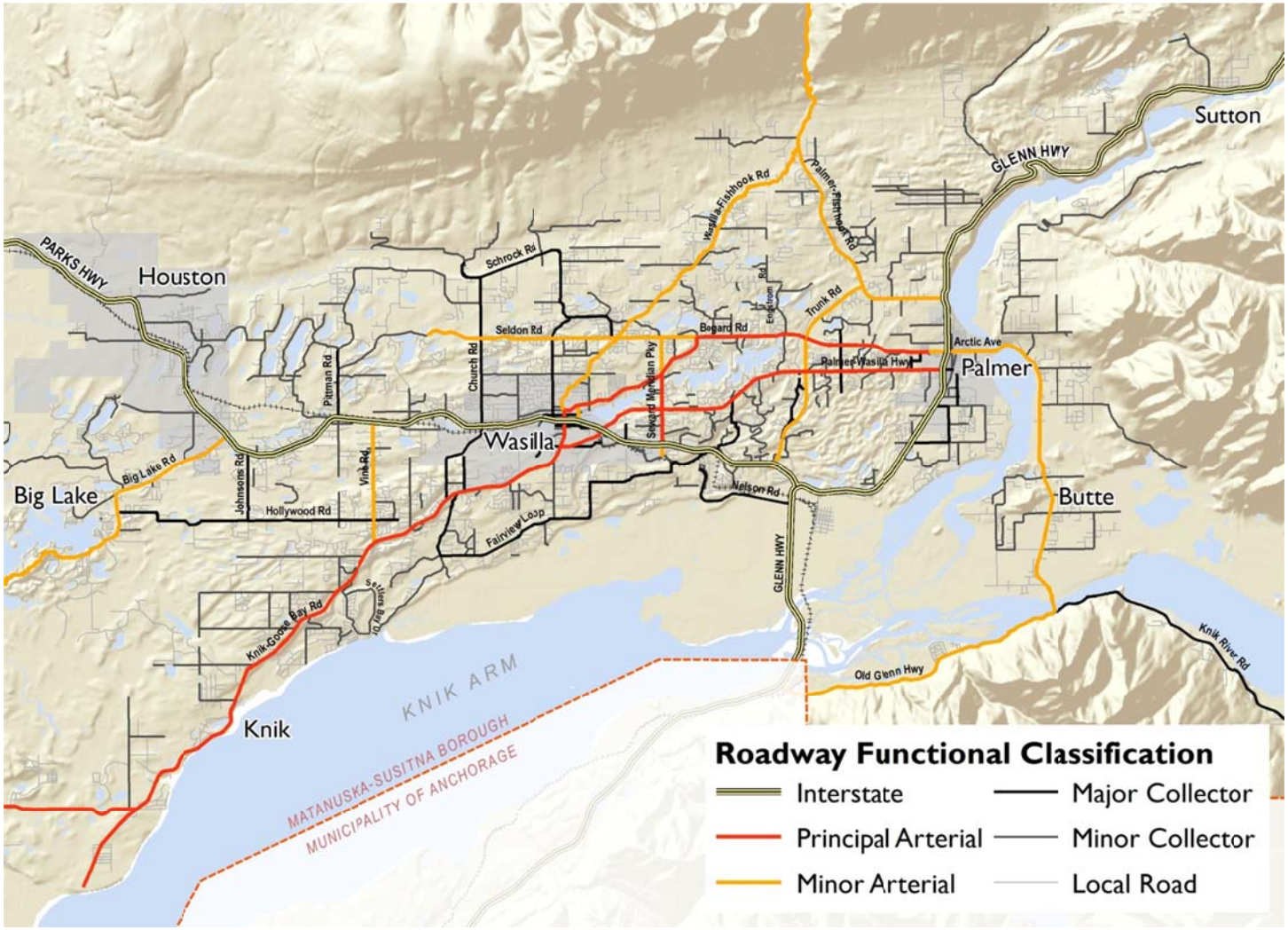
According to the MSB Community Survey 2014 and Trends 2009-2014, 63.4 percent of respondents agreed or strongly agreed that traffic congestion is a serious problem in the MSB.

Figure 8 shows current roadway functional classification.

Table 6. MSB Functionally Classified Roadways

Functional Classification	Length (Miles)	Percent of Network	FHWA Recommended Percent of Total Network Range
Local	1,633	62	65-80%
Collector	548	21	5-10%
Arterial	183	7	12-25%
Interstate	266	10	NA
Total	2,630	100%	

Figure 8. MSB Functional Classification



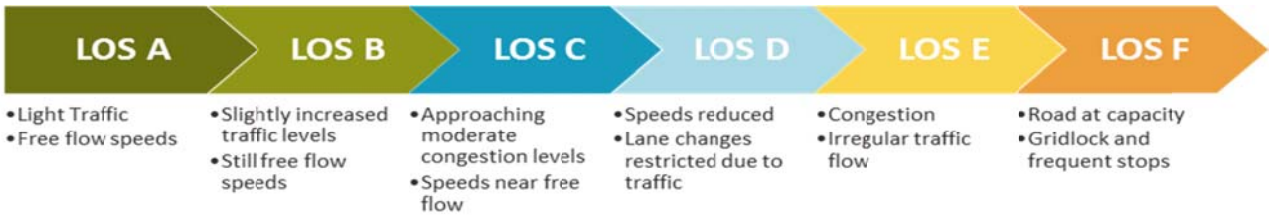
National Highway System

The National Highway System (NHS) includes the Interstate Highway System as well as other roads that are important to the national economy, defense, and mobility. Corridors that are part of the NHS within the MSB are the Glenn Highway, Parks Highway, Palmer-Wasilla Highway, and Knik-Goose Bay Road.

System Performance

One measure of transportation system performance is Level of Service (LOS), which is a qualitative measure used to describe traffic conditions and the speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety experienced by users. LOS are given letter designations, from A to F, with LOS A representing the best operational conditions and LOS F representing the worst (see Figure 9).

Figure 9. Summary of Levels of Service

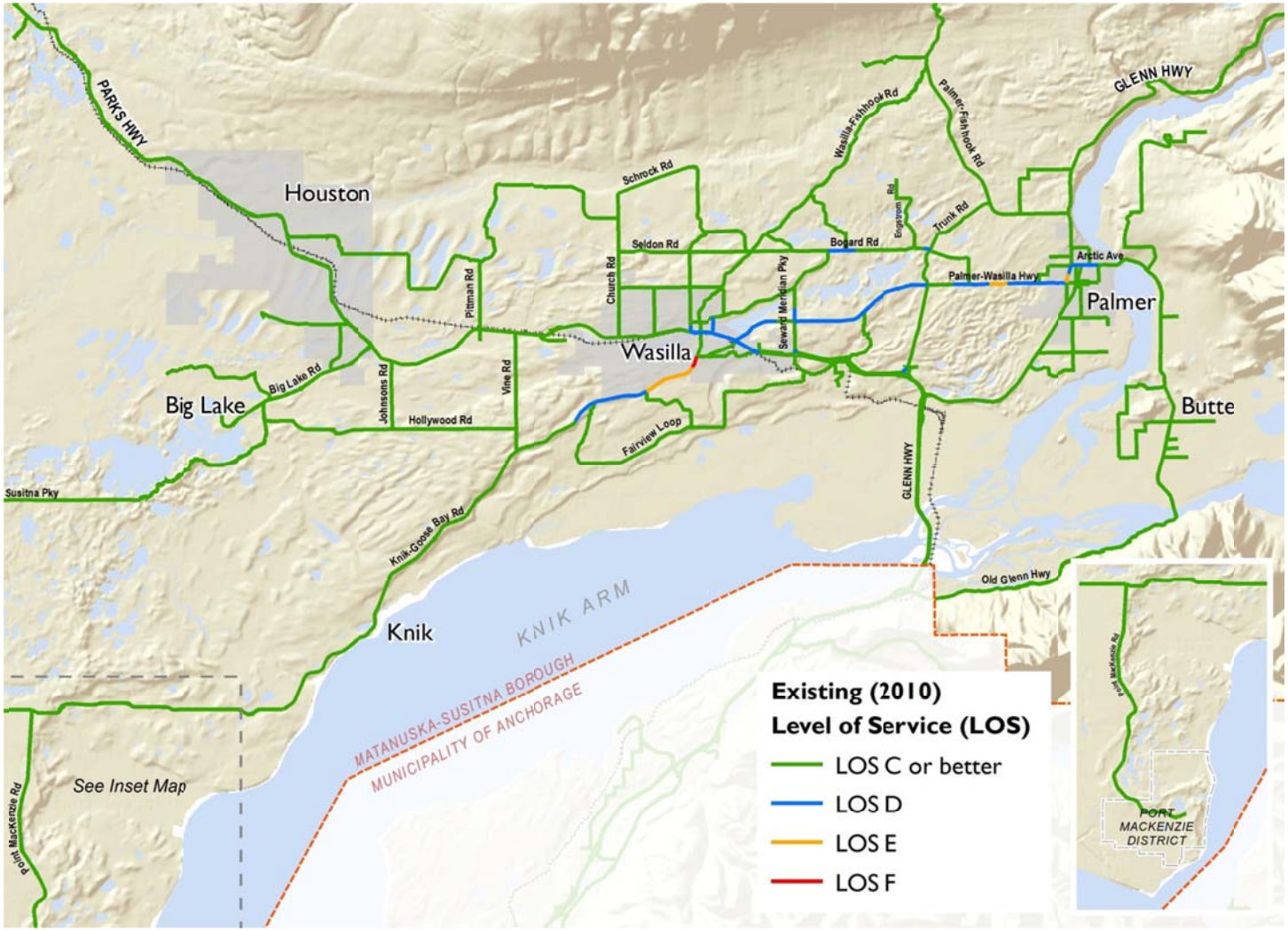


Source: Highway Capacity Manual and HDR

This LRTP update will recommend projects that improve the performance of roadways that are currently operating at an acceptable LOS. The MSB considers LOS D or above to be acceptable, but LOS C is preferred for principal arterials (e.g., the Palmer-Wasilla Highway and the new Trunk Road) and interstate highways (e.g., the Parks and Glenn Highways). The MSB Traffic Model shows that some roadways are operating at unacceptable levels today (see Figure 10). The roads that are currently performing at an unacceptable LOS include:

- **Knik-Goose Bay Road:** LOS D, E, and F
- **Palmer-Wasilla Highway:** LOS D – NO LOS F
- **Parks Highway through Wasilla:** LOS D

Figure 10. MSB Existing Level of Service



Safety

Between 2011 and 2015, the number of fatalities ranged from 11 to 15 and the number of fatal crashes ranged from 9 to 12 (see Table 7).

Table 7. Fatalities, 2011-2015

	2011	2012	2013	2014	2015
Fatal Crashes	9	11	10	12	12
Total Fatalities	13	11	11	14	15
Fatalities per 100,000 population	14.15	11.73	11.47	14.24	14.84

Source: NHTSA, 2016[7] and DOT&PF, 2016

Safety Corridors

In 2006, the State adopted Alaska Statute 19.10.075, Safety Corridor legislation to make existing roads safer.[8] Alaska adopted the following minimum criteria to identify segments for Safety Corridor consideration:

- Interstates, rural major arterials, or collectors with an AADT equal or greater than 2,000
- A 3- to 5-year fatal and major injury incident rate greater than 110 percent of statewide averages
- A 3- to 5-year fatal and major injury crash rate per 100 million vehicle miles greater than 100 percent of statewide averages
- Agencies agree on measurable, effective traffic control and traffic patrol plan
- Equal to or greater than 5 miles in length, of similar character, with logical termini

As of October 2016, there are two Safety Corridors in the MSB (see Figure 11):

7 http://dot.alaska.gov/stwdplng/hwysafety/assets/pdf/Fatal_Motor_Vehicle_Crashes_by_Brough_Census_Area_1995_2015.pdf

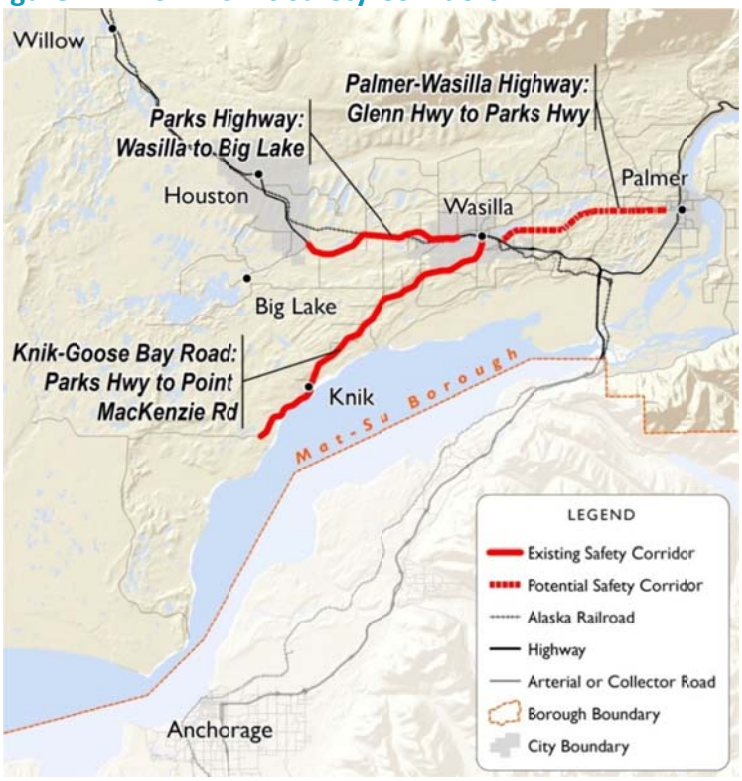
8 Thomas, Scott E., PE. n.d. Safety Corridors in Alaska. Available at http://www.westernite.org/annualmeetings/alaska11/Compendium/Moderated%20Session%20Papers/3D-Scott%20E.%20Thomas.pdf

- **Parks Highway:** Wasilla to Big Lake
- **Knik-Goose Bay Road:** Parks Highway to Point MacKenzie Road

On these corridors, DOT&PF has made roadway improvements, added signage identifying the roadway as a Safety Corridor, installed radar-activated speed limit signs, and increased fines for unsafe activity. Enforcement has also been increased. As a result of these improvements, the number of crashes in these corridors has declined.

The Palmer-Wasilla Highway, between the Glenn and Parks Highways, has been nominated as a Highway Safety Corridor.

Figure 11. MSB Traffic Safety Corridors



Bridge Conditions

FHWA maintains a database, the National Bridge Inventory (NBI), with data collected by the State Transportation Agencies, on all public bridges in the United States that are greater than 20 feet in length. Using National Bridge Inspection Standards, State inspectors visually assess and record up to 116 standards for the NBI. The database contains condition ratings for the primary bridge components—the deck, substructure, and superstructure—that provide an overall characterization of the bridge's general condition. The condition ratings, along with a structural assessment of the clearances, approach roadway alignment, deck geometry, and load carrying capacity are used to determine the sufficiency of a bridge.

An insufficient bridge is categorized in one of two ways:

- Structurally Deficient – A bridge is considered structurally deficient if the deck, substructure, superstructure, or culvert is rated at or below "poor" condition (0 to 4 on the NBI Rating Scale). A bridge can also be structurally deficient if load-carrying capacity is significantly below current design standards, or the adequacy of the waterway opening

provided is determined to be very insufficient to the point of causing intolerable roadway traffic interruptions. A bridge that is classified under the Federal definition of "structurally deficient" does not necessarily mean the bridge is unsafe. A structurally deficient bridge, when left open to traffic, typically needs major maintenance and repair to remain in service and will eventually need to be rehabilitated or replaced to address deficiencies.

- Functionally Obsolete – A bridge is functionally obsolete if the roadway geometry no longer meets current minimum design standards for width or vertical clearance classifications. A functionally obsolete classification does not mean that a bridge is unsafe. If a bridge meets the criteria for both structural deficiency and functional obsolescence, it is only identified as structurally deficient, because structural deficiencies are considered more critical.

Error! Reference source not found. shows the number of structurally deficient and functionally obsolete bridges in the MSB according to the 2015 NBI. Of the 113 classified bridges, 17 have an insufficient rating. Approximately 9.7 percent of the bridges are structurally deficient and 5.3 percent are functionally obsolete. There are additional bridges that do not qualify for the NBI but have low sufficiency ratings.

Table 8. Structurally Deficient and Functionally Obsolete Bridges in the MSB, 2015

Status	Number of Bridges	Percent of Total
Structurally Deficient	11	9.7
Functionally Obsolete	6	5.3
Not Deficient	96	85

Source: NBI[9]

DOT&PF's 2013 Bridge Report

Alaska DOT&PF's most recent 2013 Bridge Report may be found at the following link: http://dot.alaska.gov/stwddes/desbridge/assets/pdf/2013bridgereport.pdf

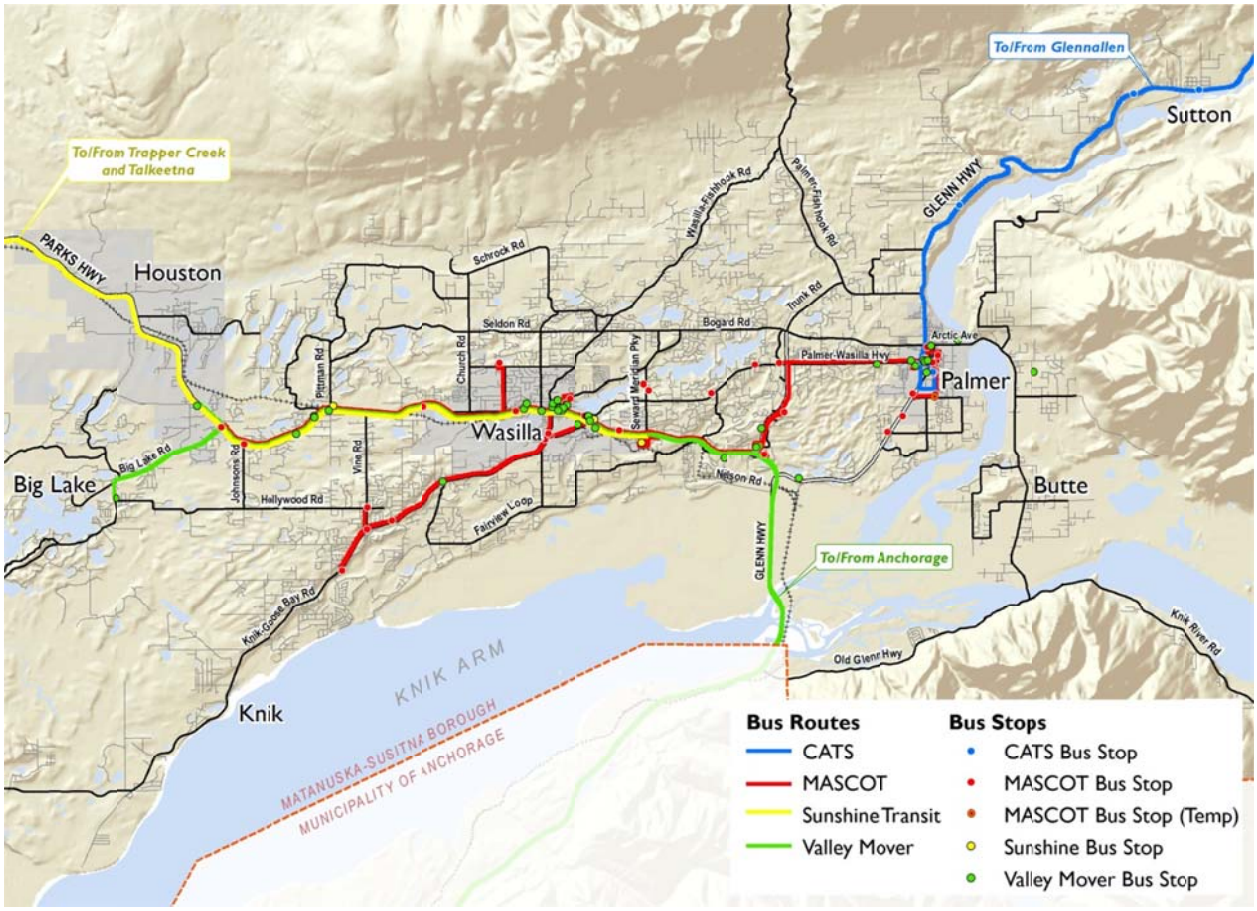
Transit System

Non-profit entities, rather than local government, provide public transit services in the MSB. These entities include Mat-Su Community Transit (MASCOT), Valley Mover, Sunshine Transit, Chickaloon Area Transit System (CATS) and People Mover's Share-a-Ride vanpool program. The Mat-Su Senior Center (formerly known as the Palmer Senior Citizens Center) also provides transportation to individuals who meet certain eligibility qualifications such as being over 60

[9] NBI. 2016. The National Bridge Inventory Database. Available at http://nationalbridges.com/index.php (accessed 8/25/2016)

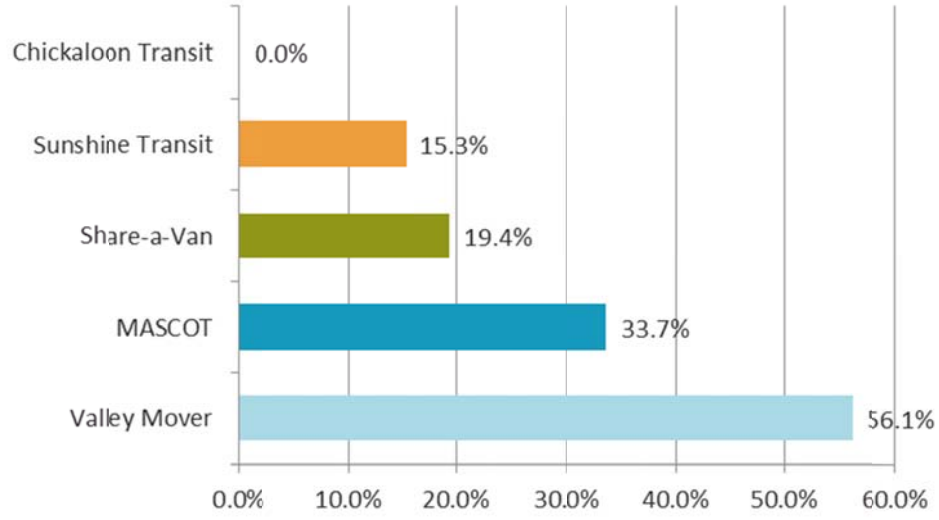
years of age or qualifying for the Medicaid Waiver program. The routing and stops for each transit provider is shown in Figure 12.

Figure 12. Existing Transit Service



The 2014 *Matanuska-Susitna Borough Community Survey* found that over 90 percent of survey respondents had never used public transportation in the MSB. Of the respondents that used transit, approximately 56 percent used Valley Mover, the major provider of commuter fixed-route service between the MSB and Anchorage (see Figure 13).

Figure 13. MSB Public Transportation Services Used, 2014

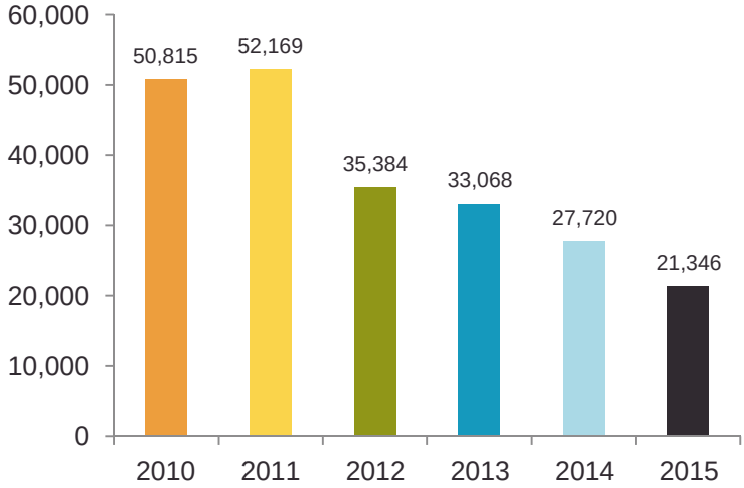


Source: Matanuska-Susitna Borough Community Survey, 2014

MASCOT

MASCOT is a non-profit organization that provides public transportation and is primarily funded through Federal, State, and local grants. Other sources of revenue include passenger fares, private donations, local government contributions, and advertisements. It provides service in the core area of Palmer and Wasilla with limited service to Meadow Lakes and Knik. It currently operates three vehicles providing "Route Deviation" bus service, meaning that buses can deviate from their route for pickups and drop offs. Depending upon the closeness of the location to the route and the time requested. It provides "demand response" bus service, which does not follow a printed schedule, trips are scheduled in advance by clients. All services are available to the general public. Its hours of

Figure 14. MASCOT Ridership, 2010-2015

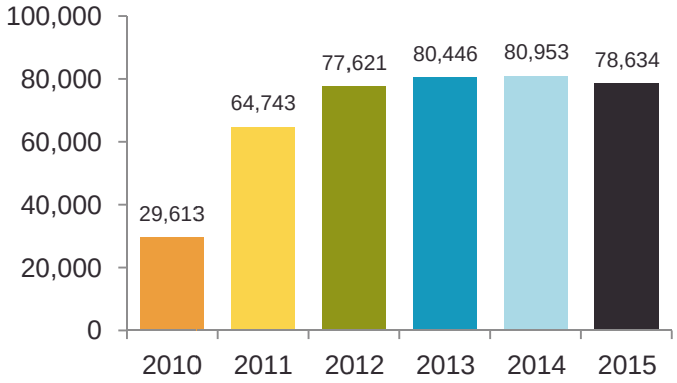


operation are typically Monday through Friday from 5:30 am to 7:30 pm. In 2014, it operated 14 vehicles and had an average weekly ridership of 570. Annual ridership is shown in Figure 14.

Valley Mover

Valley Mover is a non-profit public transportation system that provides transit between the MSB and Anchorage. It operates Monday through Friday and provides 15 round trips per day between the MSB and the Anchorage Bowl and another 2 trips between the MSB and Eagle River. Annual ridership is shown in Figure 15.

Figure 15. Valley Mover Ridership, 2010-2015



Sunshine Transit

Sunshine Transit provides public transportation for the Upper Susitna Valley (primarily Talkeetna, Trapper Creek, Willow, and Wasilla). It is operated by the non-profit Sunshine Community Health Center, doing business as the Sunshine Transit Coalition. Sunshine Transit operates Monday through Saturday on a deviated flexible route service[10] in the Talkeetna area (with flag stops), with on-demand service to Trapper Creek, Willow, and Wasilla. It operates four vehicles and has a typical weekly ridership of 119.

Chickaloon Area Transit

Chickaloon Area Transit (CATS) has been operated by the non-profit Chickaloon Native Village since 2006. It operates as a demand response service between Chickaloon and Palmer.[11] Service is provided Monday through Friday from 8:30am to 5:00pm. In 2014, it operated three vehicles and had a typical weekly ridership of 50.

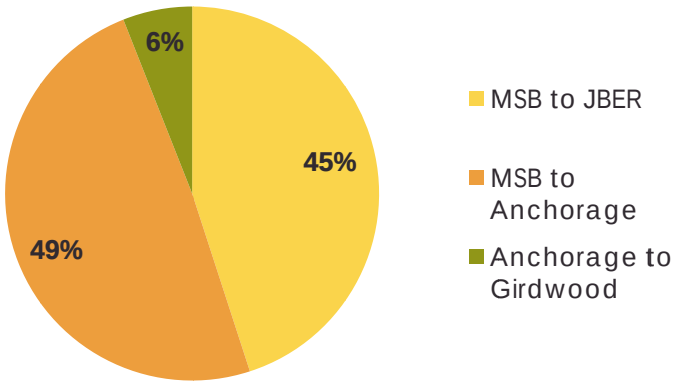
Other transit providers

Anchorage Share-A-Ride added vanpooling service to the MSB in 1995. The program provides vans that can accommodate eight to 13 people for approximately $130 per month. The Share-A-Ride program has a weekly ridership of approximately 2,400. Forty-five percent of the clientele is comprised of people commuting between the Matanuska-Susitna Valley and Joint

[10] The bus can go up to ¾ mile off the Spur Road for individuals with special needs.
[11] MP 40 to 70 of the Glenn Highway, Chickaloon to Sutton, Buffalo, Soapstone, and Palmer.

Base Elmendorf-Richardson (JBER), 49 percent is comprised of Valley to Anchorage commuters, and 6 percent is traveling between Girdwood and Anchorage (see Figure 16). [12, 13]

Figure 16. Distribution of Share-A-Ride Trips by Location



The Mat-Su Senior Center primarily operates in the core area of the MSB but may go as far as Willow, Chickaloon, and Anchorage. It currently operates 29 vehicles and has a typical weekly ridership of 550.

Transit Consolidation

DOT&PF has mandated a consolidation of transit services provided by MASCOT and Valley Mover[14] to try to reduce duplicate expenses and put more buses on the road to provide better service. A study funded through the Mat-Su Regional Health Foundation explored the potential for consolidated transit service and recommended the best operating structure for transit in the MSB. MASCOT and Valley Mover have since merged as part of the consolidation process.

Inter-Region Bus

As of February 2017, there were three inter-region bus companies offering transit service between the MSB and communities other than Anchorage. These include:

[12] MOA, 8/15/2014. See also http://www.vride.com

[13] DOT&PF. 2016. Alaska Statewide Long-Range Transportation Plan. Let's Keep Moving 2036: Policy Plan. September 2016. Draft. Available at http://dot.alaska.gov/stwdplng/areaplans/lrtpp2014/docs/20160907_LRTP_policyplan_draft.pdf

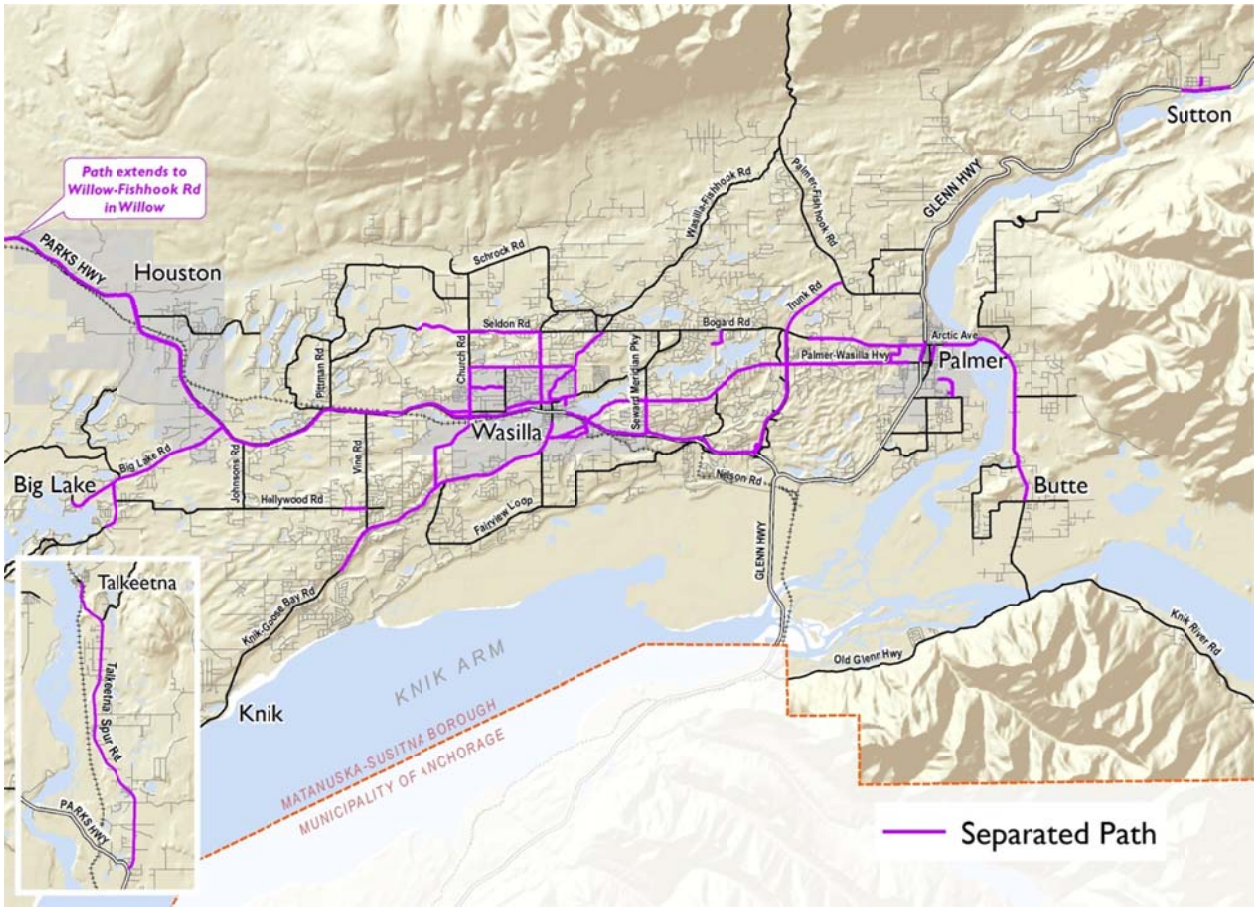
[14] Sunshine Transit was excluded because it was an extension of the health clinic, and CATS was excluded because it is operated using tribal funds, not DOT&PF funding.

- **The Park Connection** – The Park Connection provides bus service between Seward, Anchorage, Talkeetna, and Denali Park. It serves Whittier, Girdwood, and Moose Pass on a limited basis. It provides service seven days per week between mid-May and mid-September. In 2015, it carried more than 20,000 passengers.
- **Interior Alaska Bus Line** – The Interior Alaska Bus Line provides service between Anchorage, Fairbanks, Tok, and Northway. In the MSB, its only stop is in Palmer. It operates year-round on Monday, Wednesday, and Friday. Its fleet consists of three cut-away buses and two 12 passenger vans.
- **Soaring Eagle Transit** – Soaring Eagle Transit provides public transportation along the lower Richardson and Glenn Highways within the Copper River Basin and MSB. Its Gulkana-Valdez-Anchorage route includes a stop in Palmer. This route operates three days per week.

Active Transportation System

Active transportation in the form of walking and bicycling are of interest to MSB residents and policy makers. Almost everyone is a pedestrian for at least a portion of each trip taken. Our active transportation network consists largely of sidewalks and separated paths. The MSB does not have a sidewalk requirement, so the presence of sidewalks is sporadic. Sidewalks are typically found in the original Palmer townsite area and historic, commercial part of downtown Wasilla. The separated paths trail network is typically associated with recent DOT&PF and MSB arterial road projects that built the paths in conjunction with roadway improvements. The existing separated paths are shown in Figure 17.

Figure 17. MSB Separated Bicycle and Pedestrian Trails



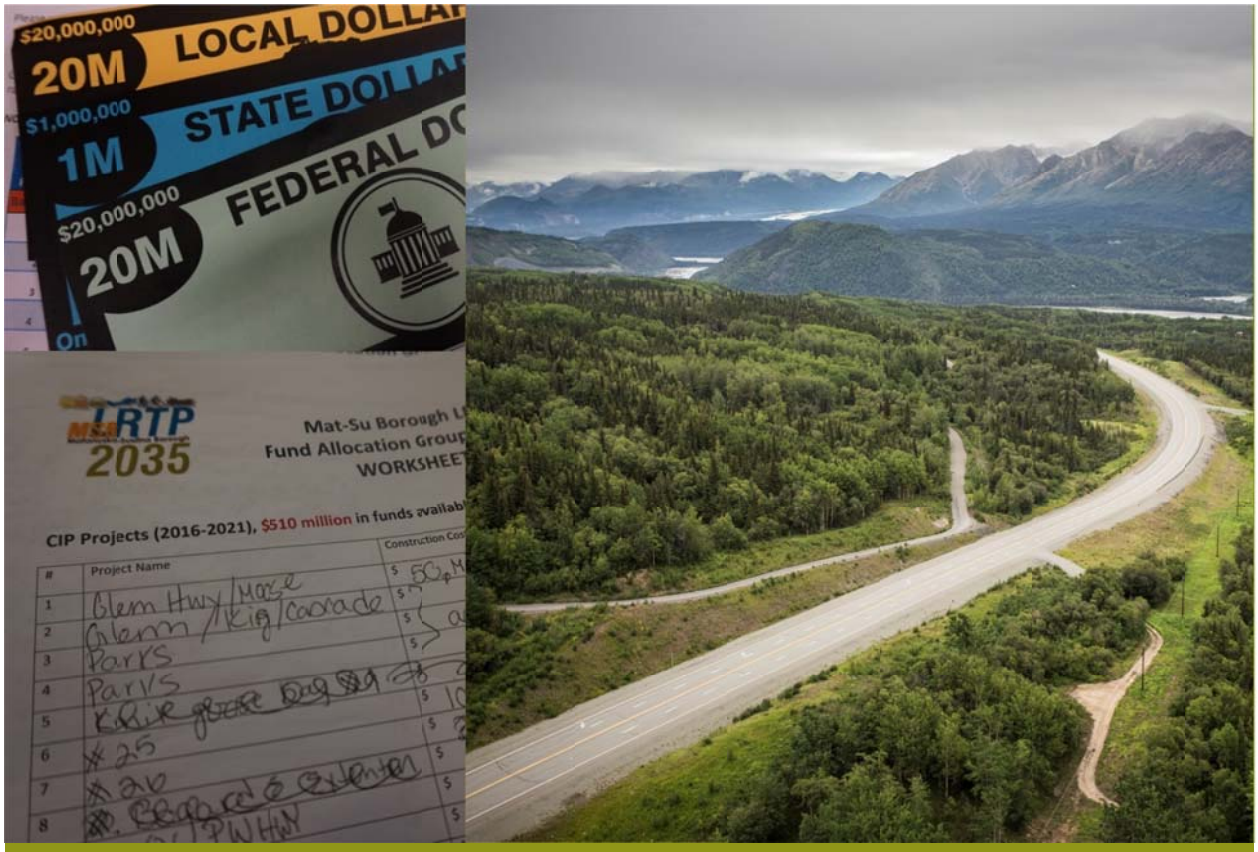
Freight

The safe and efficient movement of freight is important to the MSB economy and quality of life. In the MSB, like most areas of the United States, freight is moved mainly by truck and rail. Trucking serves both long haul and local delivery with rail serving long haul and very large freight transport. The major routes for hauling goods to, from, and through the MSB are the Glenn and Parks Highways with visual observation indicating an increase in freight traffic on the Bogard-Seldon corridor from the City of Palmer to Church Road. Some of the freight traffic on the Glenn and Parks Highways is

destined for the MSB, but much of it is being transported between Anchorage and Fairbanks or Anchorage and the Lower 48. Of the freight designed for the MSB, much of it is associated with retail goods being trucked in from Anchorage or the Lower 48 to retail big box stores and gas stations.

There is also considerable interest in increasing freight activity in the MSB related to Port MacKenzie and the Port MacKenzie Rail Extension. Port MacKenzie is a deep water and industrial/commercial area. The port was designed to ship heavy industrial and bulk materials such as wood products, mineral ores, gravel, liquid and gaseous fuels, and cement. It has a large upland area that is currently being developed as part of the Port MacKenzie Rail Extension and is adjacent or in proximity to the existing deep draft and barge docks. As a result, bulk materials can be offloaded, stored, reclaimed, and shipped via rail, truck, pipeline, barge, and ship without excessive constraints and limitations. The Port MacKenzie Rail Extension, when completed, will create the shortest rail route from Interior Alaska to tidewater. It may also provide a staging and lay down area for the Alaska Natural Gas Line Project.

Please see Chapter 10 for additional information regarding the Port MacKenzie Rail Extension Section and Chapter 11 for additional information regarding Port MacKenzie.



Chapter 4
Fiscal Constraints

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Chapter 4 Financial Constraints

Recognizing financial realities is critical to the long-range transportation planning process. Identifying funding constraints adds realism to the plan as it shows how the LRTP's proposed improvements can be implemented. Fiscal constraints help communicate priorities because they require the MSB to forecast the amount of transportation funding they will have for the next 20 years. A fiscally constrained LRTP can only recommend projects that fit within a reasonable revenue forecast. Projects that are part of a fiscally constrained plan are a higher priority than those that are not included.

The MSB has experienced significant population growth over the last 40 years and currently exceeds 100,000 residents. It is at the cusp of population and density milestones required to have the more densely populated portion of the MSB established as a Metropolitan Planning Organization (MPO).[15] This designation will likely occur after the 2020 Census. MPOs are required to develop a fiscally constrained LRTP.

Unlike previous MSB LRTPs, this LRTP update is fiscally constrained. This LRTP presents a realistic financial plan to pay for the recommended projects. This initial effort will only look at the costs of roadway improvements and funding categories to pay for them: Federal Highway Funds, including State General Fund Match; State General Funds; and Local MSB Bond revenues. Once an MPO is established in the MSB, the fiscal constraint analysis must comply with FHWA regulations and address the many sub-categories of Federal-aid funding.

Traditionally, funding for surface transportation projects in the MSB comes from three main sources: FHWA, the State, and the MSB. Historically, approximately 85 percent of State revenues have been the result of income generated by oil and gas royalties and taxes. In August 2014, the price of a barrel of Alaskan Crude Oil exceeded $100.00. However, since that time, the price has dropped to $30.00 per barrel at its low point. As of October 2016, the price has rebounded to the high $40.00 to low $50.00 per barrel range. Low prices are now coupled with

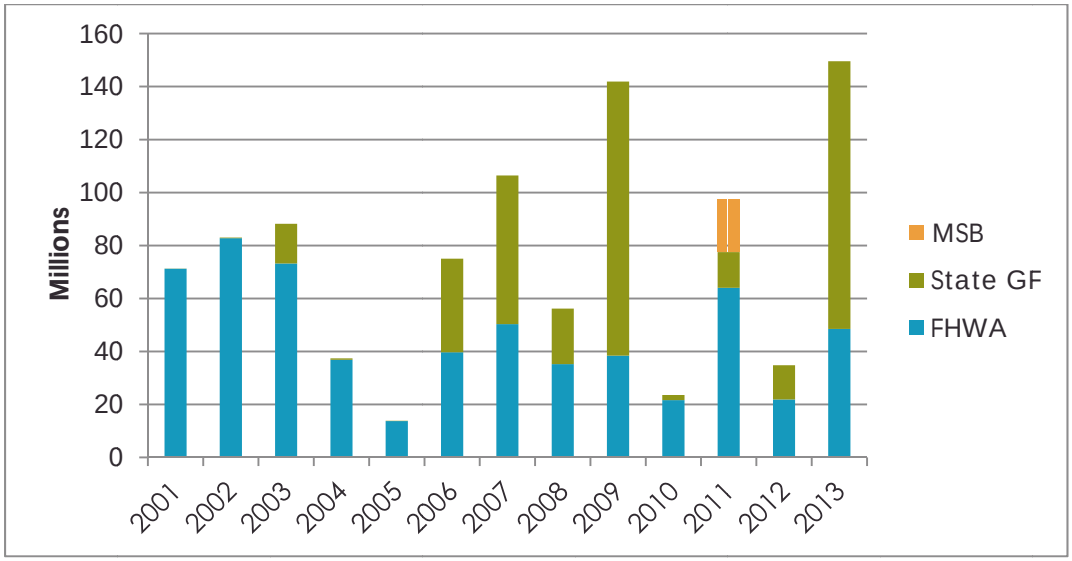
[15] Federal regulations require any urbanized area (UZA) with a population greater than 50,000 and a density of _____ to have an MPO. A UZA is a census-designated urban area with 50,000 residents or more.

low production, with the Trans-Alaska Pipeline only operating at 25 percent capacity, or roughly 500,000 gallons per day, resulting in greatly reduced revenues for the State.

This has had a significant impact on the State's ability to fund transportation projects. Two years ago, the Fiscal Year (FY) 2015 State Capital Improvement Program included over $1 billion in State funded transportation projects in addition to the federally funded transportation projects statewide. Since then, there has been essentially no State General funding or General Obligation Bonds issued for roadway projects except for the roughly 10 percent match needed to leverage Federal Highway and Aviation Funds. This decrease in State funding limits the ability to respond to the many roadway needs in the MSB. It is expected that will be the case until oil revenues and production increase significantly and/or new State and local revenue sources are identified.

Between 2001 and 2013, the MSB received an average of $46 million per year from FHWA via DOT&PF and $27.8 million per year from the State (Figure 18). In addition, the MSB received $40.0 million from the 2011 Road Bond Package (50 percent of the bond was funded by the State).

Figure 18. Annual Transportation Funding by Source, 2001-2013



DOT&PF administers several Federal-aid funding programs. As listed in the 2016-2019 Statewide Transportation Improvement Program (STIP) Surface Transportation Funding Sources[16], these programs include:

CMAQ (Congestion Mitigation/Air Quality) – *These funds are for projects that can be proven to reduce traffic congestion and/or improve air quality in federally designated non-attainment areas. Projects such as park and ride lots, transit bus replacement, vehicle inspection and maintenance program improvements, signal coordination, ride sharing, and paving for dust control qualify for these funds. The federal funds ratio varies and is either 90.97 percent or 100 percent, depending upon the specific category of work.*

NHPP (National Highway Performance Program) – *In MAP-21 section 1106, Congress designated the NHPP to provide support for the condition and performance of the National Highway System (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 a State's asset management plan for the NHS. This funding code incorporates previous NHS, IM and some BR fund codes. The federal funds ratio is 90.97 percent.*

RHE (Rail Hazard Elimination Program) – *This purpose of this program is to reduce the number of fatalities and injuries at public highway-rail grade crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. This program funds the federal requirement that each state conducts and systematically maintain a survey of all highways to identify railroad crossings that may require separation, relocation, or protective devices, and establish and implement a schedule of projects for this purpose. The federal funds ratio is 90 percent.*

RTP (Recreational Trails Program) – *This funding category is intended to develop and maintain recreational trails and trail related facilities for both non-*

[16] DOT&PF. 2016. 2016-2019 STIP Surface Transportation Funding Sources. Available at: http://dot.alaska.gov/stwdplng/cip/stip/assets/1619_stipfundcodes.pdf

motorized and motorized recreational trail uses. This program is administered by the Department of Natural Resources. The federal funds ratio is 90.97 percent.

S148 (Safety Sanction) – *This special category of MAP-21 safety funds addresses highway safety improvement projects similar to Safety (SA40) below. New SA funding terminated following 2012 apportionment with the passage of MAP-21. The funds are made available by a sanction, or reduction, to Alaska's NHPP and Surface Transportation Block Group Program (STBGP) apportionments. Each year, 2.5 percent of these program funds are reallocated because Alaska does not have conforming laws addressing repeat driving under the influence charges and open alcoholic containers on motorcycles. The federal share is 100 percent.*

SA40 (Safety Sanction) – *This special category of safety funds addresses highway hazard eliminations similar to Safety (SA148) above, 100 percent federal. The funds are made available by a sanction or reduction to Alaska's Interstate Maintenance, National Highway System and Surface Transportation Program apportionments. Each year, 3 percent of these program funds are reallocated because Alaska does not have conforming laws addressing repeat driving under the influence charges and open alcoholic containers on motorcycles.*

STBGP (Surface Transportation Block Group Program) – *Flexible funding that may be used by the state and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, bus terminals and facilities. Unlike other states, Alaska is allowed to use these funds on any public road in Alaska, regardless of classification. The federal funds ratio varies, typically 93.4 percent if spent on interstate routes or 90.97 percent otherwise. Prior to the FAST Act, this was known as the Surface Transportation Program.*

TA (Transportation Alternatives) – *The Moving Ahead for Progress in the 21st Century Act (MAP-21) replaced the Transportation Enhancement (TE) Activities with the Transportation Alternatives (TA) Program, a new program, with funding derived from the NHPP, STP, Highway Safety Improvement Plan (HSIP), CMAQ and Metropolitan Planning programs, encompassing most activities funded under the Transportation*

Enhancements, Recreational Trails, and Safe Routes to School programs under SAFETEA-LU. The federal funds ratio is 90.97 percent.

In addition, the new federal transportation funding bill, the Fixing America's Surface Transportation Act, or FAST Act, was signed into law. The FAST Act recognizes and creates funds for freight improvements. Freight funding under the FAST Act is primarily through two programs:

- **National Highway Freight Program (NHFP):** The FAST Act provides $6.3 billion in formula funds to States over a 5-year period. Eligible projects are those that contribute to efficient freight movements on the National Highway Freight Network and are identified in a freight improvement plan included in a state's freight plan **(**FHWA, 2016).[17] States can use a maximum of 10 percent of its NHFP apportionment for intermodal or rail freight projects. Alaska has 1,222.23 miles in the National Highway Freight Network, including the Glenn and Seward Highways in Anchorage. Alaska is expected to receive $80 million in funding through this program (Martinson, 2015).
- Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE) Grant Program: This new competitive grant program will provide $4.5 billion of funding to nationally and regionally significant freight and highway projects over the next 5 years. Funding will be identified "**to complete projects that improve safety and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements" (U.S. Department of Transportation [DOT], n.d.).** FASTLANE grants can be used for a maximum of 60 percent of total eligible project costs. However, 10 percent of FASTLANE grants are reserved for small projects, with a minimum grant amount of $5 million. In addition, state Departments of Transportation need to spend at least 25 percent of each fiscal year's FASTLANE grants for project in rural areas (DOT, 2016).[18] States, Metropolitan Planning Organizations (MPOs), local governments, and tribal governments are among those organizations eligible to apply for a grant. Special purpose districts and public authorities (including port authorities), and other parties are eligible to apply for funding to complete projects that improve safety and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.

[17] Required in FY 2018 and beyond.
[18] According to FHWA, a rural area is an area outside a U.S. Census Bureau designated urbanized area with a population of more than 200,000.

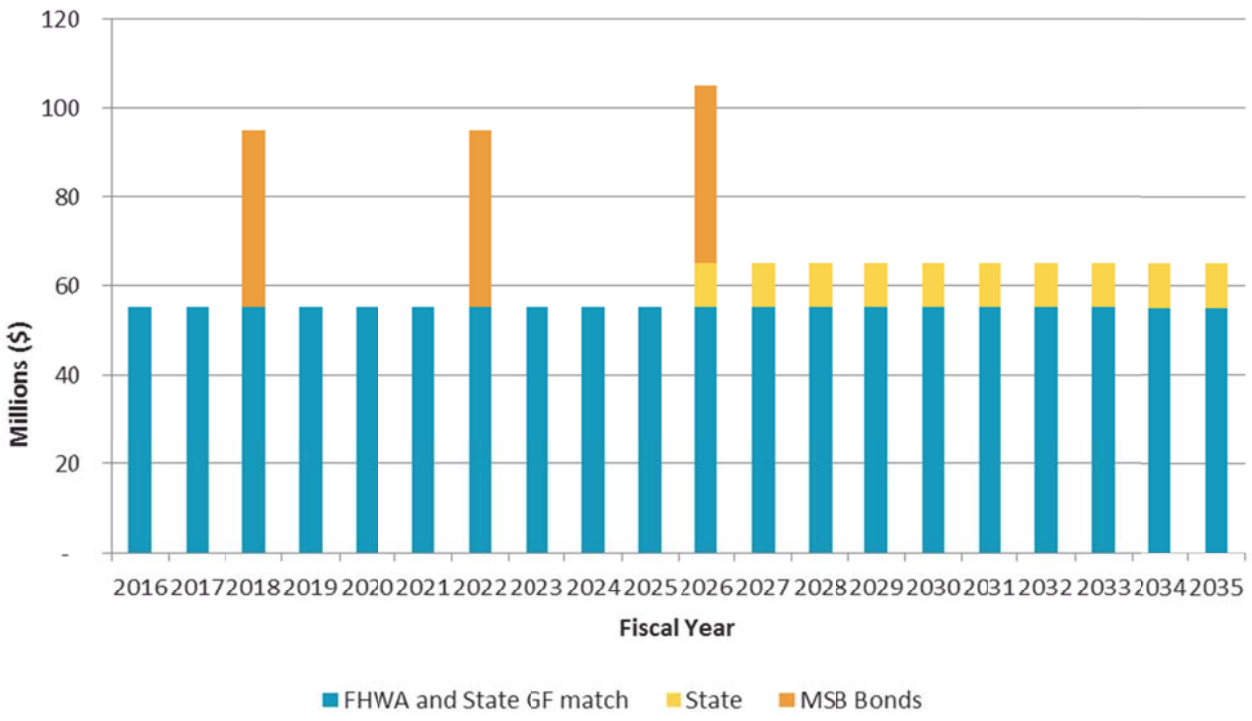
2035 MSB LRTP Fiscal Constraint Parameters and Assumptions

The requirements of each program and funding level vary from year to year as some funding sources are formula apportioned, while others are discretionary allocations. As a result, basing future funding levels on historical funding may be misleading. The projected funding levels were developed based on historical information combined with guidance from DOT&PF and the MSB. The estimated revenue includes the following assumptions:

- $55 million annually in Federal Highway Funds and State General Fund Match over the next 20 years
- No State General Fund revenue for roadway projects from 2016 to 2025
- $10 million annually in State General Fund revenue for 2026 to 2035 through DOT&PF
- $40 million road bonds to be issued in 2018, 2022, and 2026 ($20 million for each bond issue funded by voter approved tax revenue and $20 million provided through State or other matching funds)

In total, these financial assumptions provide $1.1 billion in Federal Highway and State General Fund Match, $100 million in State General Funds for DOT&PF projects, and approximately $120 million in MSB Bond revenues for a total of $1.3 billion over the 20-year horizon of the LRTP. These figures will provide general guidance in preparing the LRTP's fiscally constrained roadway program. Certain years may receive more or less of the funding identified, but the overall cost of the 20-year recommended roadway program is consistent with the estimated revenues. For example, the current FY 2016-2019 STIP shows significantly more federal dollars addressing MSB projects than the $55 million annual federal funding target, but it is consistent with the target through 2035. Figure 19 shows the projected future roadway revenue for 2016 through 2035.

Figure 19. Projection of Future Roadway Revenue, 2016-2035



Operations and Maintenance

Fiscal constraints also must recognize that roadway infrastructure must receive routine ongoing maintenance to ensure that the roadways remain functional throughout their design life. This includes both winter maintenance, which ensures that roadways remain open during adverse winter weather conditions, and summer maintenance such as crack sealing, which helps ensure that roadways will achieve their full functional life. Deferred maintenance often results in a roadway having to undergo a major rehabilitation prior to the end of its projected design life. Roadways in the MSB are maintained by the State of Alaska; the MSB; and the Cities of Houston, Palmer, and Wasilla. The majority of roadways are in State or MSB ownership.

Operations and maintenance activities and challenges include:

- Snow removal, culvert thawing, road sanding, and traction maintenance
- Dust control and grading

- Drainage
- Culvert thawing
- Guard rail repair
- Brush removal and vegetation management
- Pothole and paved shoulder repair
- Crack sealing and repaving
- Pavement markings
- Signage
- Traffic signal and street light maintenance
- Traffic counting
- Avalanche management

Future Operations and Maintenance Issues:

- Level of Service
  - Equipment
  - Brushing
- Complex Intersections
  - Roundabouts
  - Signals
- Population growth
- Unfunded pavement repair and replacement
- Illumination
- Municipal Separate Storm Sewer Systems ("MS4") permitting
- ATV Conflicts
- Rapid development

The State General Fund provides most of the funding for operations and maintenance for DOT&PF owned roads but has been significantly reduced in 2015 providing a much lower level of service than previously provided State owned highways and roads.

For MSB owned roads, most of the funding is derived from taxes raised in RSAs. The MSB administers 13 maintenance contracts for the 16 RSAs (six RSAs are combined into three contracts). For FY 2014, the revenue for road maintenance (from taxes and investments) was $16.6 million. All funds, except administration, are RSA specific.

The major costs in 2014 were:

- Administrative ($2.2 million)
- Maintenance ($9.3 million)
- Capital improvements ($5.1 million)

Capital improvements are funded by RSAs only if funding remains after maintenance. RSA funding for capital projects is not included in the fiscal constraint analysis since it primarily deals with the needs of the local road system. However, the fiscally constrained project funding deals primarily with the improvement or management of roadways with a functional classification of minor collector or above.

Of the 1,397 miles of MSB owned roads, 1,073 miles are routinely maintained. The remaining 324 miles are unmaintained but monitored. Only 384 miles are paved.

Chapter 5
Roadway Recommendations

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Chapter 5 Roadway Recommendations

This chapter describes the future roadway system conditions as well as short-, medium-, and long-term recommendations for improvement.

2014 Travel Model Background

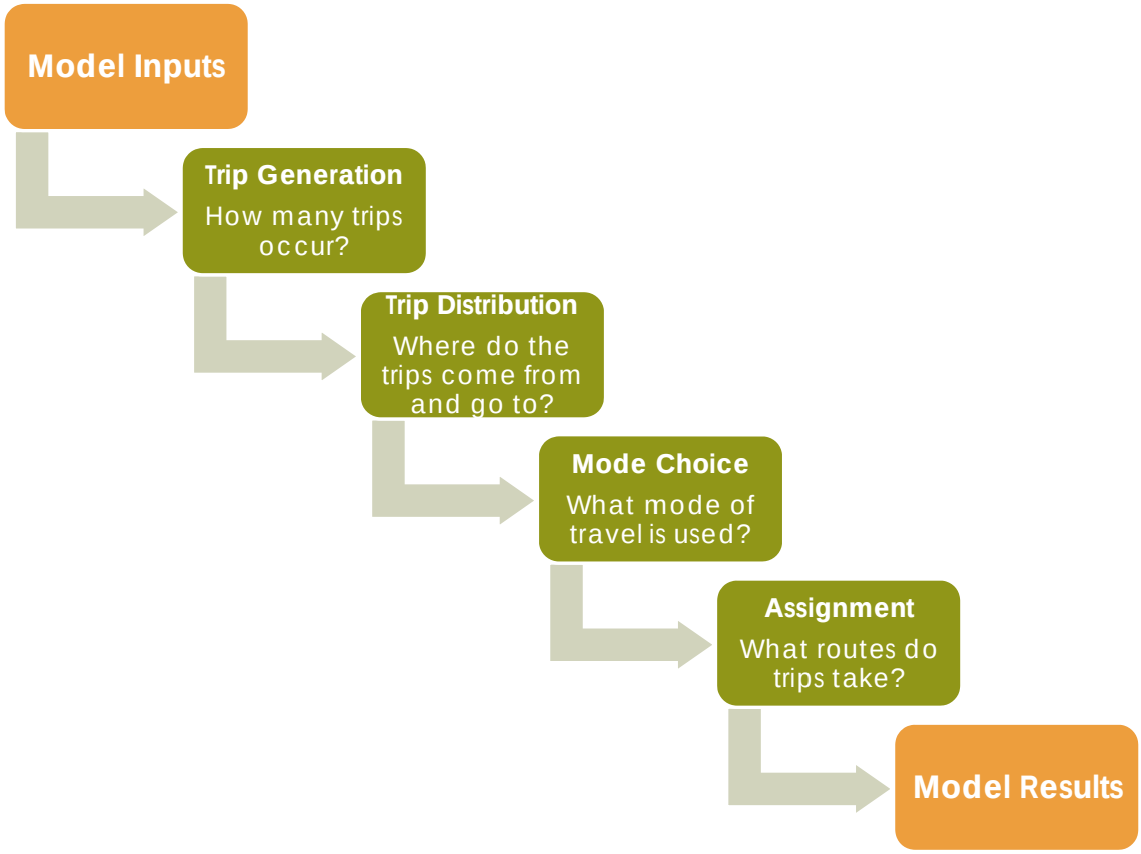
The MSB's travel model evaluates regional travel to help the MSB make informed decisions regarding transportation improvements. The model is based on the current anticipated levels of population, the locations and employment growth. The model used in the MSB is part of the regional model that includes the Anchorage Metropolitan Area Transportation Solutions (AMATS) portion of the MOA. It uses a simplified planning approach consisting of four steps, including:

- **Trip[19] generation:** How many trips occur in the modeled area?
- **Trip distribution:** Where does the trip come from and go to?
- **Mode split:** Which mode will be used by each trip (e.g., personal vehicles, transit)?
- **Trip assignment:** Which route will each trip take?

The modeling process is summarized in Figure 20.

[19] A trip is travel between two points for one purpose, for example, between home and work, home and school, or work and shopping.

Figure 20. Modeling Process Summary



The model estimates traffic for an average workday. Trips are generated using household and employment information at the TAZ level. Traffic forecasts are generated based on land use inputs such as the transportation network. The model can be used to evaluate forecasts by altering the two main inputs: land use changes and transportation network changes.

The MSB model used for this LRTP has a base year of 2010 because that was the most recent year for which socioeconomic and traffic count data were available when the model was developed. This information was used to validate the model to ensure it reasonably mirrors baseline traffic volumes and patterns before the model is used to project future traffic.

Model Population and Employment

Figure 21 and Figure 22 show the travel model's base year household and employment distribution by Traffic Analysis Zone (TAZ) [20].

[20] A TAZ is a geographic unit used for identifying demographic and land use in transportation planning models.

Error! Reference source not found.**Figure 21. Household Distribution by TAZ, 2010**

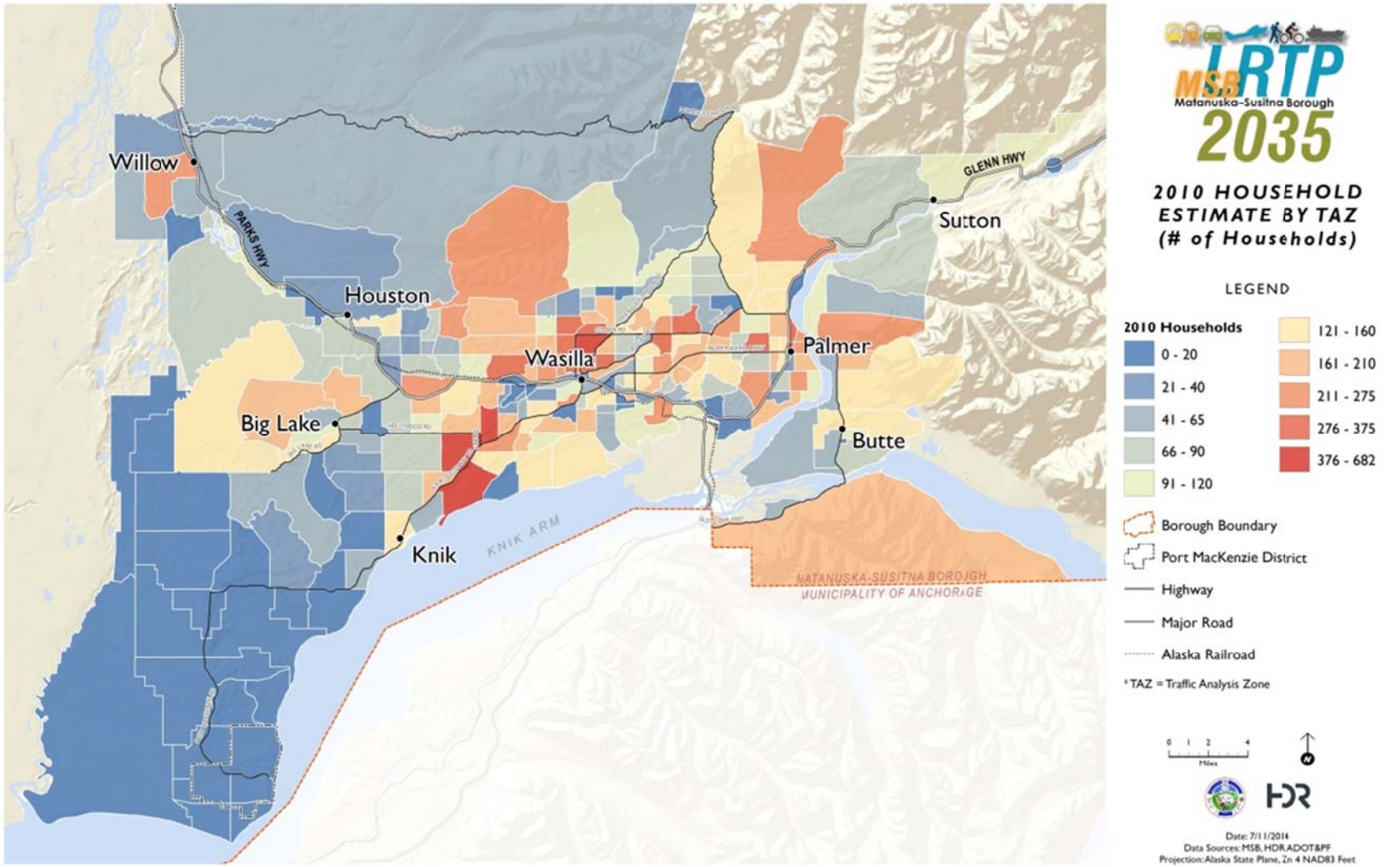
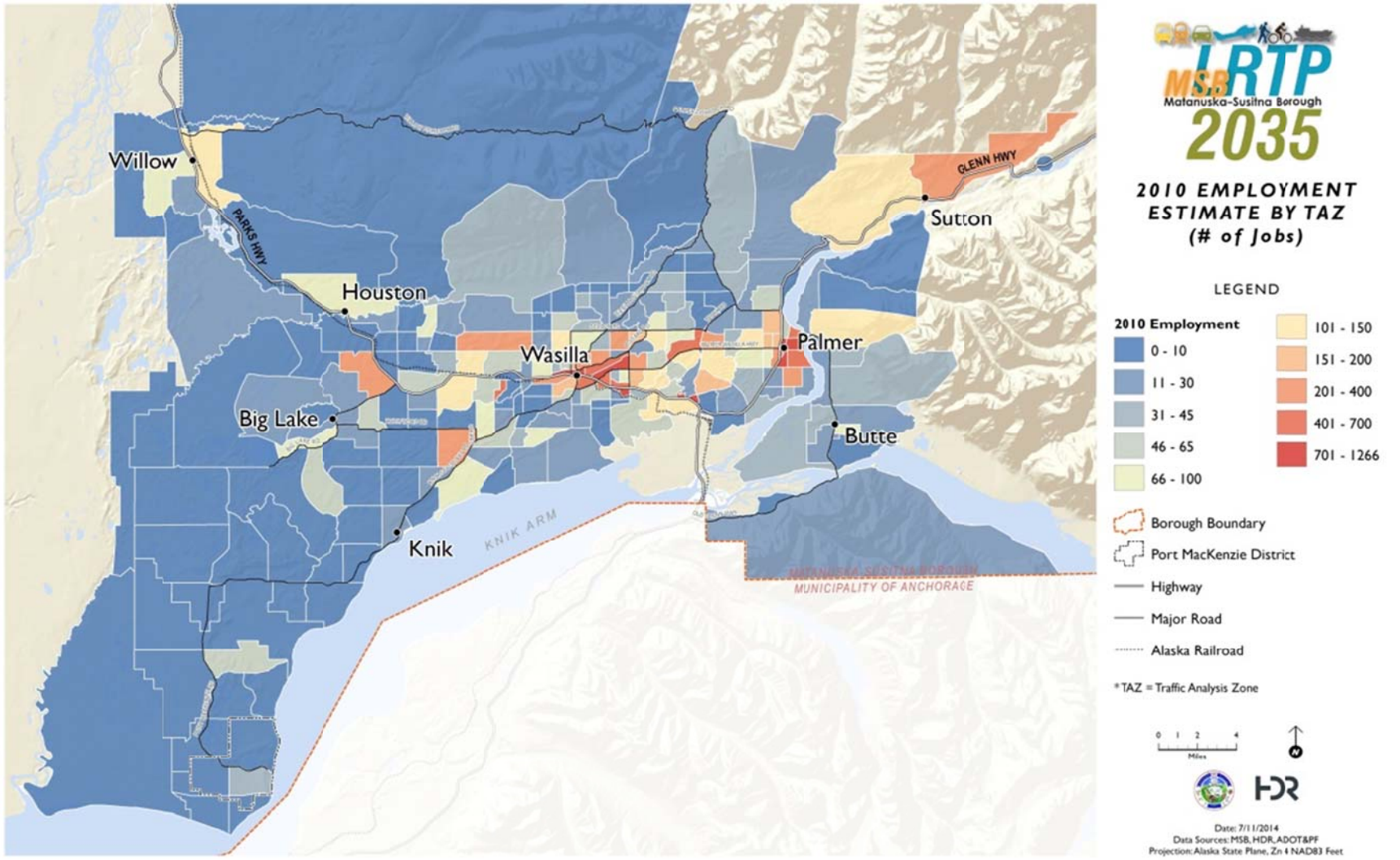


Figure 22. Employment Distribution by TAZ, 2010



At the time the model was developed, the 2035 population was forecasted to be 189,000 and employment was expected to be 51,300 employees. To identify the distribution of the population and employment, a charette (or workshop) was held in August 2010 as part of the Parks Highway Alternative Corridor project. Charette participants included stakeholders representing public and private sector organizations with long-term knowledge of development in the MSB. They were tasked with identifying the likely locations of future residential and employment development. The results of the 2010 charette are summarized below.

The workshop indicated that areas of future growth would include:

- The Core Area between Palmer and Wasilla, where moderate growth would occur as existing subdivisions, and land between subdivisions, are in-filled;
- The western Fairview Loop Area, where a higher level of growth would occur as new subdivisions are developed, with the potential for some smaller lots (less than 1 acre) and multi-family development;
- The Lazy Mountain and Palmer/Wasilla Fishhook areas, where slower growth with continued large lot development would occur because of water availability issues; and
- The Butte, where large agricultural tracks and some water quantity issues would also result in slower growth.

The workshop indicated that the areas of highest potential growth would continue to be located west of Wasilla in the Meadow Lakes, Big Lake, and Houston areas as well as southwest of Wasilla along Knik-Goose Bay Road to Settlers Bay, with a mix of single and multi-family development. The Point MacKenzie area's growth would be dependent on the construction of the Knik Arm Crossing, the Point MacKenzie rail extension, Goose Bay Correctional Center, and ongoing expansion of Port MacKenzie. Growth is expected to be slow in the near term and increase as development and job opportunities occur.

This population and employment distribution is consistent with the MSB's 2012 Density and Build-out Study. This study predicted population and housing quantities at build-out (when all the developable land is used). Build-out is estimated to occur in 2060.

The resulting population and employment forecasts are shown in Figure 23 and Figure 24.

Figure 23. Household Distribution by TAZ, 2035

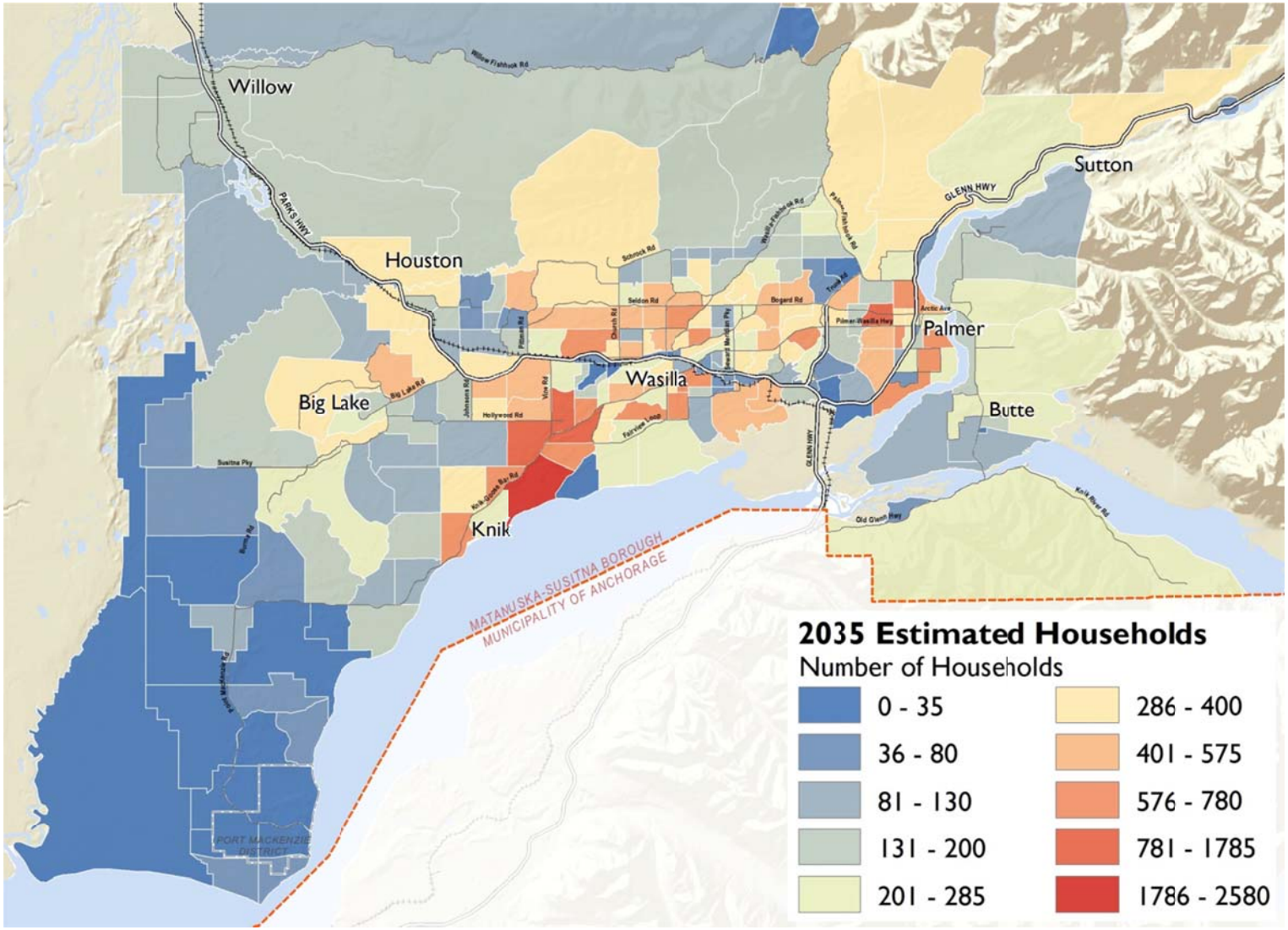
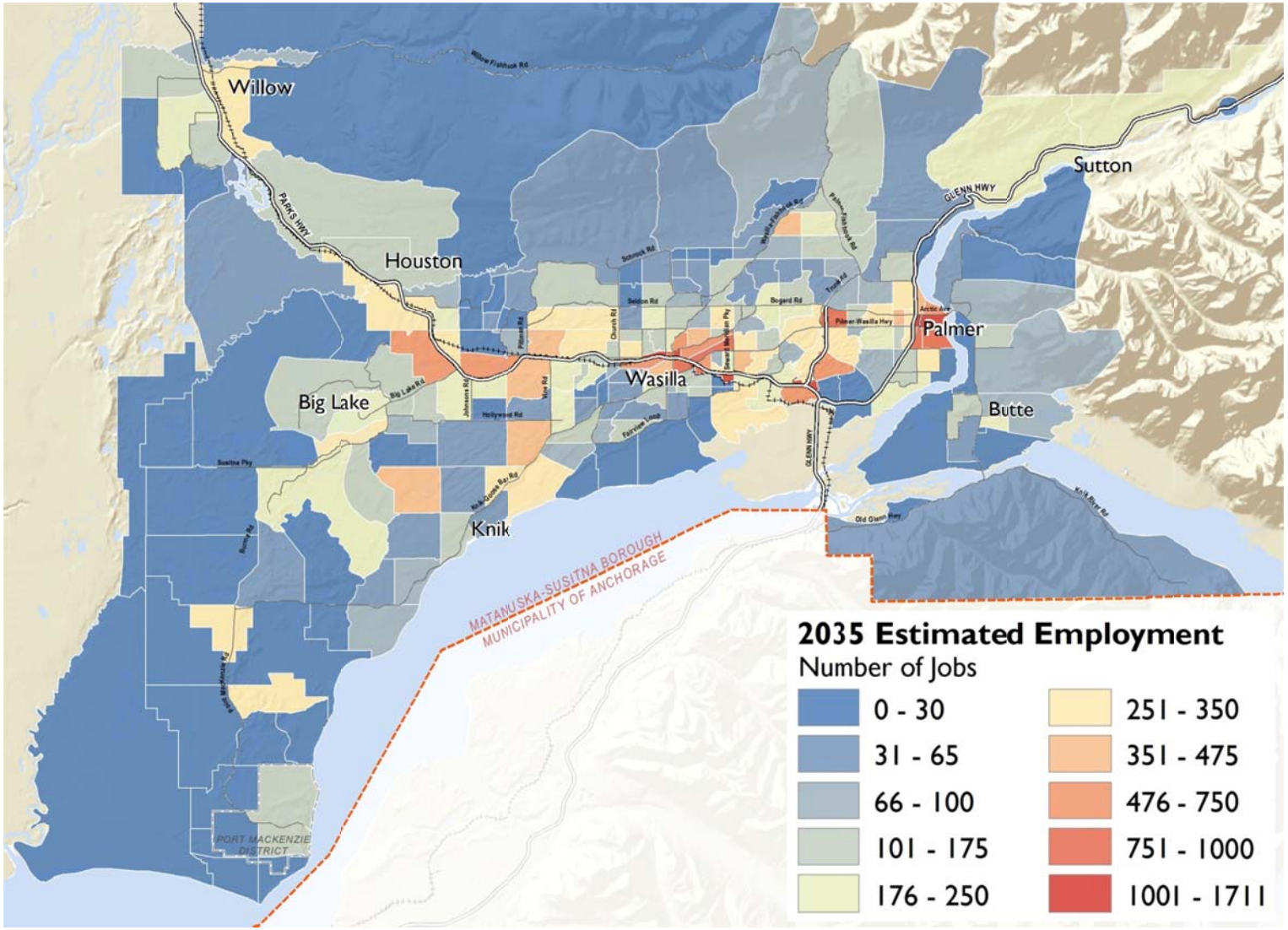


Figure 24. Employment Distribution by TAZ, 2035



Future Roadway System Performance

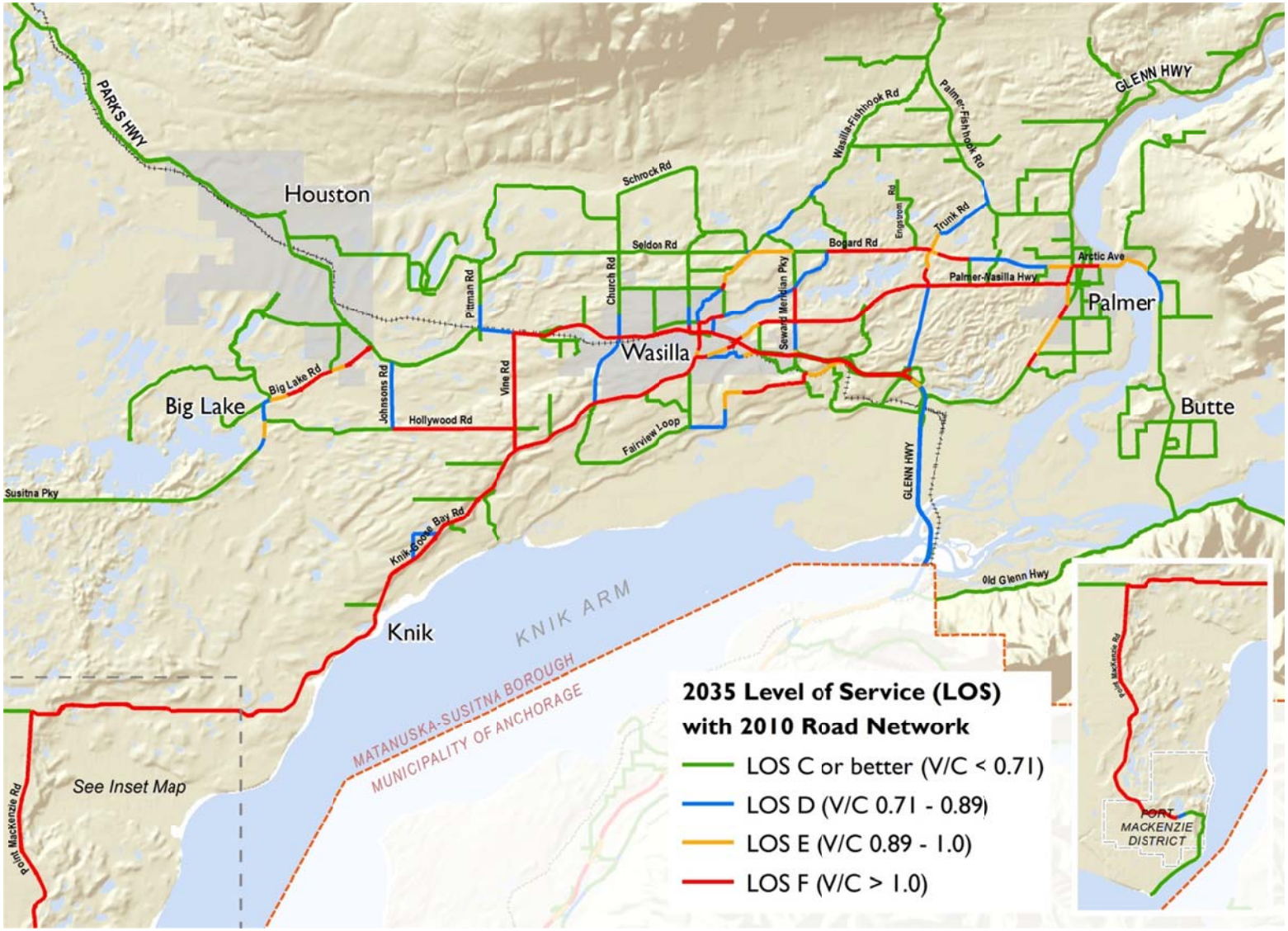
Traffic forecasts were prepared for a 2035 planning horizon to understand our future traffic needs. When this LRTP update began in 2014, it was assumed that within the 20-year life of the LRTP, the Knik Arm Crossing and the Alaska Natural Gas Line would be constructed, and the population within the MSB would continue grow at approximately 2.71 percent annually[21]. The State's General Fund Capital Budget exceeded $1.0 billion dollars and several major capital improvements were under construction including the Point MacKenzie Rail Extension and the Bogard East Road Extension. However, in mid-2014, the value of a barrel of Alaska North Slope oil began its steady decline, reaching a low point of less than $21 per barrel in February 2016, creating a fiscal crisis for the State of Alaska. As of February 2017, the price rose has risen to over $55 per barrel, but still well below the June 2014 price of over $100 per barrel, which has done little to improve the State's fiscal position. During 2016, work on the Knik Arm Crossing was stopped, the timing of the Alaska Natural Gas Line became less certain, the State General Funded Capital Budget was virtually non-existent, and population growth within the MSB slowed.

Within this set of changed circumstances, and uncertainly about the 2035 conditions, it was decided that the LRTP should continue to use the existing MSB traffic model to make a reasonable forecast of Future Roadway System Performance[22] and adjust recommendations accordingly, given that the Knik Arm Crossing will not be constructed by 2035. Less emphasis has been placed on projects in the lower Knik-Goose Bay Road and Point Mac Kenzie Road areas and more emphasis has been placed on the upper Knik Goose Bay and Parks Highway Corridor areas. Figure 25 shows the how the existing roadway system is expected to perform in 2035. Based on this information, several key roads including the Parks Highway, Knik-Goose Bay Road, the Bogard-Seldon corridor, and the Palmer-Wasilla Highway would have unacceptable levels of congestion.

[21] These forecasts were based on the University of Alaska Institute of Social and Economic Research's growth projections completed in December 2009.

[22] The MSB considered updating the travel model to reflect existing conditions. However, due to the extent of the changes that would have to be made, updating the model would result in substantial increases to the budget and schedule of the LRTP update.

Figure 25. MSB Future 2035 Level of Service



As shown in Figure 25, by 2035, unless there are improvements made to the transportation system, the following roads are anticipated to have unacceptable levels of congestion:

- Parks Highway
- Glenn Highway
- Knik-Goose Bay Road
- Big Lake Road
- Seldon Road
- Palmer-Wasilla Highway
- Hollywood Road
- Vine Road
- Seward Meridian Parkway
- Trunk Road

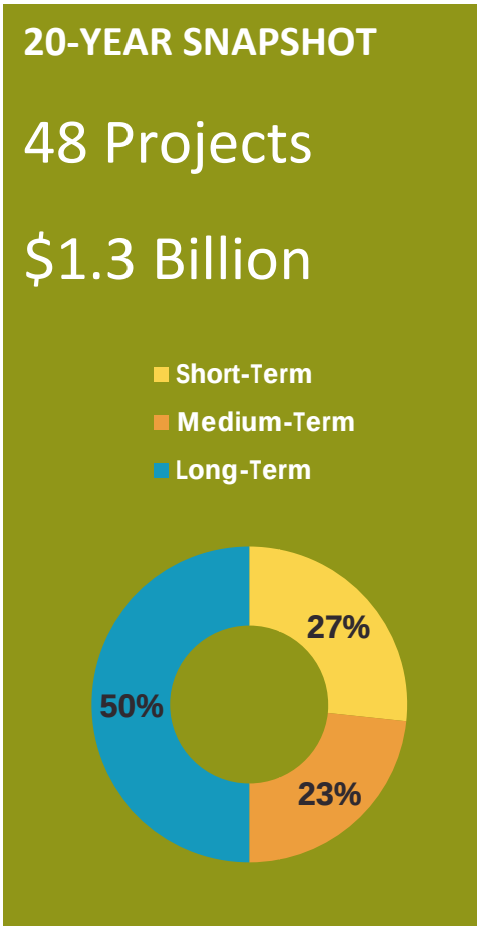
The project team analyzed these results to identify which roadway improvements will be needed over the next 20 years[23] due to congestion. Congestion on local roads has different effects depending on surrounding development. Most local roads have not had, and are not likely to have, substantial increases in capacity or operational capability. Capacity or operational upgrades could be accomplished through providing transit service, adding lanes of traffic and/or adding more traffic control measures such as median barriers, roundabouts, and traffic signals. Congestion on local streets can limit access to adjacent properties and tends to lower residential property values or increase demand for other land uses.

Congestion on major roadways has less of an effect on adjacent land use. Property owners along major roadways are more likely to have bought the property because of existing or anticipated heavy traffic volumes. Although a business may have fewer customers during certain times of the day as roadway congestion increases, the business is likely to remain if other connecting roadways in the nearby area do not exposure to the public to similar congestion. Major roadway improvements may require limiting access through a variety of methods to relieve congestion. These improvements may include medians, right turn in/right turn out access; and frontage roads. These improvements may affect adjacent land uses, impact business, and require changes in travel patterns.

[23] These results predict higher traffic volumes in the Point MacKenzie area due to the assumption of the Knik Arm Crossing being built. Without the bridge, less population and employment growth is expected to occur in Point MacKenzie and surrounding areas. The analysis, and resulting recommendations, have incorporated this change in population and employment distribution.

There are multiple ways to address congestion. One way is to provide additional capacity for motorized vehicles. The added capacity should be done in ways that fully consider the costs of the new controls and restrictions. Additionally, limiting access to a major highway at few locations helps peak hour flows but increases the time and distance for locals trying to access businesses unnecessarily during off-peak hours. Roadway projects to help address congestion are discussed in Chapter 5.

Another way to address congestion is to encourage people to use alternatives modes of transportation such as walking, biking, or taking transit. As congestion increases, people may choose walking or bicycling because of convenience. Other factors that influence increasing non-motorized trips include the availability of sidewalks/pathways, distance between neighborhoods and commercial/industrial uses, safety, and more. The MSB is pursuing alternatives to roadway improvements to address congestion. Please see Chapter 6 for additional information.



Safety Concerns

In addition to long range transportation planning for capacity, there needs to be monitoring and adjustment for safety. Public safety concerns typically begin to increase in terms of calls, observations, conflicts, and crashes before roads reach capacity. Past experience in Alaska demonstrates there are safety indicators which justify making roadway improvements. Using these indicators allow the MSB and DOT&PF be preventative and efficient in terms of resolving safety problems as they develop, but before they have recurring serious crash problems. Table 9 shows known capacity levels and operational triggers which have led to safety mitigation projects. With this information, additional LRTP projects or project categories may be considered before capacity levels of LOS E or F are reached.

Table 9. Safety Indicators

Safety Concern	Indicator	Description	Mitigation Options	Past Experience/ Examples
Two land HIGH volume segments	>= 16,000 vehicles per day (vpd)	Common to Safety Corridor candidates. Lane volumes as high as multilane urban arterials. Volumes can result in serious crash conflicts without further access management, enforcement, education, and spot improvements.	Auxiliary turn lanes, traffic signals, or roundabouts may be considered. Increased attention to education and enforcement may also be considered as interim treatment.	Knik-Goose Bay Road, Parks Highway near Wasilla
Two lane INTERMEDIATE volume segments	>=12,000 vpd	Can be difficult for turning access even if there are not collective side streets of significant volume. Frequent driveway conflicts can lead to crash patterns throughout the corridor.	Auxiliary turn lanes at side streets, driveway spacing and consolidation, alternative routing.	Palmer-Wasilla Highway, Seldon Road, Old Glenn Highway
Two land HIGH volume intersections	>= 8,000 vpd mainline with >=1,500 side streets	In combinations with higher mainline volumes, these intersection can meet traffic signal criteria or need for a roundabout alternative, otherwise may see increasing intersection crashes.	Auxiliary turn lanes, traffic signals, or roundabouts may be considered. Alternative routing may also be an option.	Knik-Goose Bay Road/Fern Street. Fairview Loop Road, Vine Road
Multilane HIGH volume segments	>= 20,000 vpd	Four or more lanes at higher volumes without further access management can lead to serious turning crash conflicts.	Median separations and access consolidation along with backage/ frontage road circulation needs consideration.	Palmer-Wasilla Highway – Parks Highway to Cottonwood Creek compared to Tudor Road, Muldoon Road, and DeBarr Road
Multilane HIGH volume intersections	>= 60,000 million entering vehicles (MEV), or six through lanes crossing four or more thru lanes	High turning demand tends to conflict with high thru demand and compete for limited signal timing. Signal movements experience longer turnaround time. Roundabouts not typically feasible at high entering volumes.	Distributing turns to alternate routes, backage/frontage roads needs consideration. Widening other roads is an alternative to six lanes.	Parks/Palmer-Wasilla Highway and Parks Highway/Main Street approaching 50,000 mark
Multilane inefficient HIGH volume	>=100 vpd split phased	When approach demand exceeds 100 vpd, shared thru/left turn lanes can	Separate left turning from thru traffic at higher approach	Glenn/Palmer-Wasilla Highway

Safety Concern	Indicator	Description	Mitigation Options	Past Experience/ Examples
intersections		demand service every signal cycle, unduly holding up large volumes on other approaches. Leads to significant rear end collision increases, red light running.	demands. Allow simultaneous movement of opposing turns and opposing thru traffic.	
Poor COLLECTOR alignment	Overlong cul-de-sacs	Sole points of access to larger neighborhoods and higher density centers. Lacks efficient access, options for emergency medical service, fire, police, transit, incident routing, detours. Reduces community interaction, cohesion. Crashes and incidents can block access completely.	Seek two points of access, alternative routes.	Hospital access, Engstrom Road, France Road, Settlers Bay Drive
Poor COLLECTOR alignment	Platting for offset tee intersections	Future potential signals or roundabouts are expensive solutions and need to serve both sides of a main roadway when possible. Negative offsets at future major intersections can result in increased opposing vehicle crashes as they compete for turning space.	Use only positive offset tee intersections for busier collectors. Use four legs aligned for collectors that have the potential for more efficient signal/roundabout upgrades. Thru traffic signal timing windows are longer and more efficient than turning traffic timing.	Midtown – Golden Hills Drive, Shoreline Drive/Shennum Drive/Luke Drive

Roadway Recommendations

Roadway improvements are needed for a variety of reasons, including improving congestion, safety, accessibility, and mobility. Many of the transportation improvements identified through the planning process are desirable, but the State and the MSB lack sufficient funding to implement them all. This section presents fiscally constrained roadway recommendations to serve as the blueprint for roadway improvements over the next 20 years. Roadways are the backbone of the MSB transportation system. Roads provide access to residences, businesses, and industries in the MSB. They are used by automobiles, trucks, buses, and bicycles to allow people and goods to move around the region.

One of the biggest challenges facing the roadway network is that much of the existing system is aging and needs improvements. Another major issue is that growth in some parts of the MSB has resulted in increased traffic volumes and has caused a need for improvements to reduce congestion. The MSB roadway system needs to be maintained and improved to remain an efficient and safe means of travel.

There have been several projects that have been recently completed by the MSB and the State that have made significant improvements to the MSB roadway system. These projects were identified in the MSB's 2007 LRTP or with recent input from the public and agencies and represents nearly $100 million in investments. Those projects are:

- Bogard Road East Extension
- South Big Lake Road Realignment
- Fern Street Connection
- Vine Road Upgrade
- Clapp Mack Road Extension
- Seldon Road/Lucille Street Intersection
- Sullivan Road/Caudill Street Upgrade
- Long Lake Drive Reconstruction
- Seldon Road, Church Road to Beverly Lake Road
- Lu Young Road Paving
- Port Access Road Paving
- Knik River Road Spot Improvements
- Sutton School Pathway
- Hawk Lane Upgrade
- Trunk Road Improvements
- Trunk Road Extension South
- Lucus Road Improvements

Given the 20-year revenue forecast presented in Chapter 4, the roadway recommendations in this chapter focus on near-, medium-, and long-term improvements that will help complete the MSB roadway system and provide the greatest benefit for dollars expended. These projects address safety, congestion reduction, capacity, connectivity, and asset management needs to produce an efficient and reliable roadway system.

Short Term (2016–2019)

The short-term projects are those that address the critical mobility, asset management safety needs that are proposed for construction in the near term. The short-term plan covers the first four years of the plan. The projects to be implemented by DOT&PF are identified in the STIP, which guides the expenditure of Federal-aid transportation funds in Alaska. As of September 2016, funds are committed to the projects shown in Table 10 **Error! Reference source not found.** and on Figure 26.[24] The total short-term roadway costs are $412.8 million.

[24] DOT&PF is able to amend the STIP and change priorities and schedules if State transportation needs and priorities change.

Several projects are initiated in the short term but are not funded for construction until the medium- or long-term portion of the program due to funding limitations. These projects are designated with a number followed by a letter. For example, the Glenn Highway MP 34 to 42 Parks to Arctic Renovation 4-Lane is designated 1a in the Short Term Project List and 1b in the Medium Term Project List, which is when the balance of construction funding is proposed.

Table 10. DOT&PF Short-term Roadway Projects in the MSB

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
1a	**Glenn Highway MP 34-42 Reconstruction (Parks to Arctic Renovation, 4-Lane)** - Upgrade the NHS Glenn Highway to a four-lane arterial with frontage roads where appropriate from the Glenn-Parks Interchange through Palmer to the Arctic/Old Glenn Highway intersection.	Congestion Relief	$56.0	FHWA
2	**Glenn Highway - Erosion Protection MP 63 and MP 64** - Provide erosion protection at locations along the Glenn Highway between Sutton and Chickaloon where the road is susceptible to erosion and failure under normal flow conditions in the braided sections of the Matanuska River.	Safety, Asset Management	$5.6	FHWA
3	**Knik-Goose Bay Road** - Widen Knik-Goose Bay Road to a divided four-lane facility from Centaur Avenue to Vine Road, a distance of 6.44 miles. Scope includes separate bike and pedestrian facilities and safety improvements, including rumble strips and combined access points. Project will be built in multiple phases.	Congestion Relief	$83.2	FHWA
4	**Knik-Goose Bay Road Widening - Vine Road to Settlers Bay Drive -** Knik-Goose Bay Road Safety Corridor project development activities for the safety corridor, including the rehabilitation of Knik-Goose Bay Road between Vine Road and Settlers Bay Drive. This is a State funded project, separate from, but coordinated with, the Federally funded project on Knik-Goose Bay Road from Centaur Avenue to Vine Road.	Congestion Relief	$27.2	State Bond FHWA
5	**Parks Highway/Talkeetna Spur Road Pedestrian Improvements** - Pedestrian improvements, including an undercrossing to accommodate the safe access to the Su-Valley Jr/Sr High School.	Safety	$3.17	FHWA
6	**Parks Highway MP 43.5-48.3 - Lucus Road to Pittman Road** - Widen Parks Highway to four lanes, with attendant traffic and safety improvements, between Wasilla and Pittman Road.	Congestion Relief	$15.1	FHWA
7a	**Parks Highway MP 48.8 to 52.3 - Pittman Road to Big Lake Road Reconstruction** - Widen Parks Highway to four lanes, with attendant safety improvements, between Pittman Road and Big Lake Cutoff.	Congestion Relief	$42.8	FHWA
8	**Point MacKenzie Road Improvement, MP 21.8 to 23** - Improvements to the road leading into the Port MacKenzie area.	Congestion Relief	$1.23	FHWA

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
9	**Seward Meridian Parkway** - Reconstruct Seward Meridian Parkway between the Palmer-Wasilla Highway and Bogard Road to a four-lane arterial with a pedestrian trail. Extend the Seward Meridian Parkway from Bogard Road to Seldon Road as a two-lane arterial with pedestrian facilities.	Congestion Relief	$29.3	FHWA
10a	**Vine Road Improvements – Knik-Goose Bay Road to Hollywood Boulevard** - Project will rehabilitate the State owned portion of Vine Road to an improved 2-lane facility, including drainage, repaving, lighting, pedestrian facilities, and safety improvements as necessary.	Congestion Relief	$2.0	FHWA
11a	**Wasilla Fishhook Road/Main Street (Yenlo Couplet)** - Create a North-South Couplet to improve traffic movement in these directions in downtown Wasilla. Main Street and Knik-Goose Bay Road will be the southbound leg and Talkeetna and Yenlo will be the northbound leg.	Congestion Relief	$5.7	FHWA
12	**Palmer-Wasilla Highway** - Near term HSIP project to address immediate traffic and safety issues along this Highway Safety Corridor by establishing a center turn lane to improve traffic flow.	Safety	$21.8	HSIP
13a	**DOT&PF MSB Intersection Improvement Program** - Assess and construct traffic signal or roundabouts at intersections that meet need. Locations to be considered over the entire life of the LRTP include, but are not limited to: Hollywood/S. Big Lake, Hollywood/Vine, Spruce/Lucille, Peck/Wasilla Fishhook, Seldon/Church, Seldon/Caribou, Glenn/Palmer Fishhook, Bogard/Engstrom/Green Forest.	Safety	$5.0	HSIP
14a	**Glenn Highway MP 53-56 Reconstruction - Moose Creek Canyon** - Major reconstruction of the Glenn Highway through the Moose Creek Canyon. The highway will be straightened and a new 800-foot bridge spanning Moose Creek will be constructed. Right of way.	Asset Management	$3.0	FHWA
15a	**Glenn Highway MP 84.5-92 Rehabilitation - Long Lake Section** - Improve alignment and mitigate rock fall. Design.	Asset Management	$5.0	FHWA
16a	**Glenn Highway Rehabilitation MP 79-84.5** - Improve alignment and mitigate rock fall. Design, right of way, utilities.	Asset Management	$7.7	FHWA
17a	**Parks Highway Bridge Replacement - Montana and Sheep Creek** - The new bridges will have top widths that match the roadway width at the time of construction. Pedestrian facilities will be addressed.	Asset Management, Safety	$0.73	FHWA
18	**Parks Highway MP 90-99 Rehabilitation (Trapper Creek)** - Rehabilitate base and surface, widen shoulders as appropriate, and construct safety improvements.	Asset Management	$21.0	FHWA
19	**Parks Highway MP 99-123.5 Rehabilitation** - Rehabilitate the Parks Highway from MP 99 to 123.5. This project is one of the construction phases of the parent project, Need ID 28291.	Asset Management	$35.76	FHWA

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
20a	**Parks Highway MP 163-183 Rehabilitation** - Rehabilitate the Parks Highway between MP 163 and MP 183 to improve drainage and construct passing lanes. Includes grade separated rail crossing at Hurricane.	Asset Management	$0.59	FHWA
21	**Parks Highway MP 183-192** - Reconstruct Parks Highway between MP 183 and 192 and replace East Fork Chulitna River Bridge.	Asset Management	$0.92	FHWA

Phased projects are indicated by the use of a letter after the project ID.

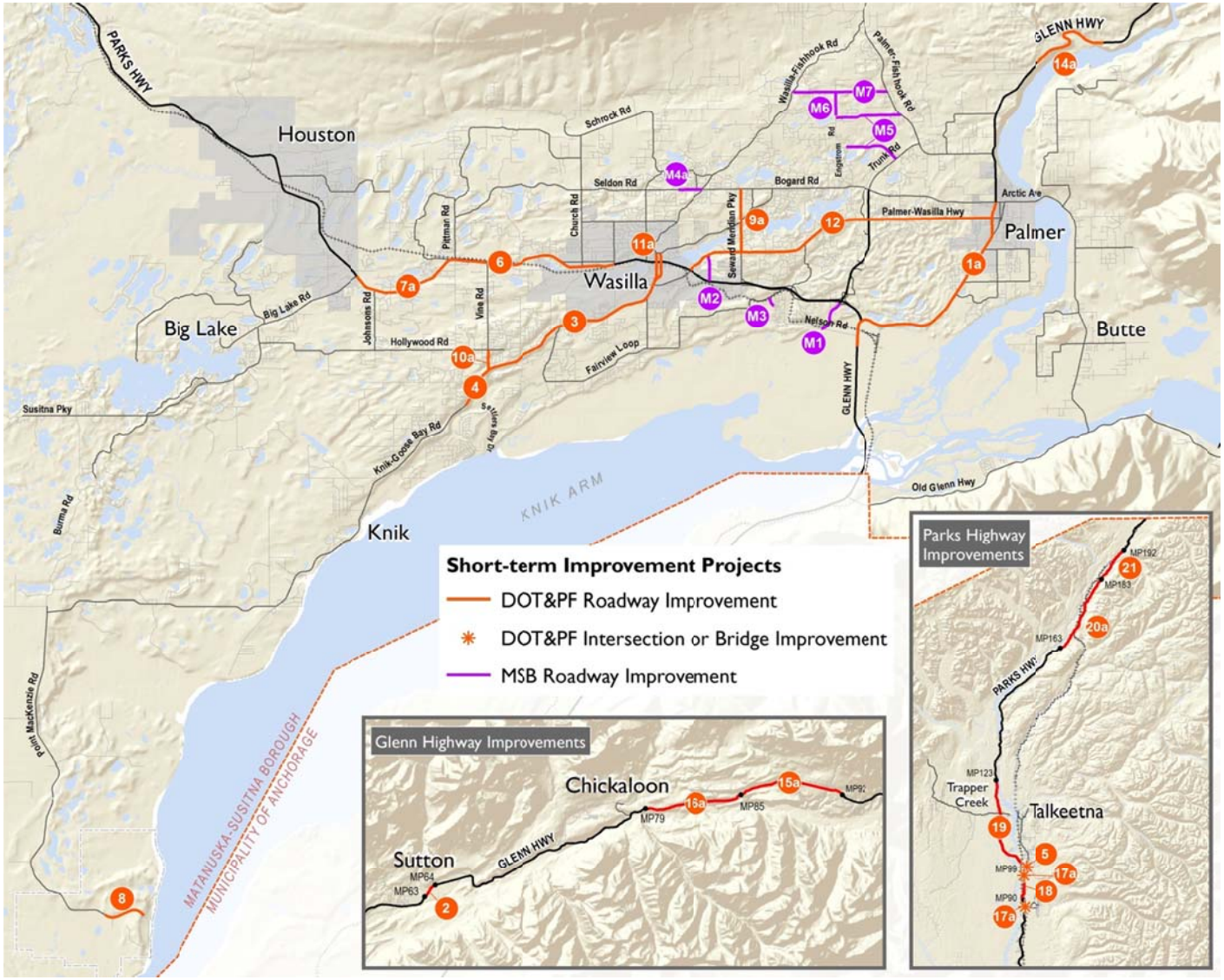
In addition to the projects funded by DOT&PF, there are several projects that should be completed by the MSB in the short term. These locally funded bond projects are shown in Table 11**Error! Reference source not found.** and on Figure 26. These projects total $37.5 million.

Table 11. MSB Short-term Roadway Projects

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
M1	**South Trunk Road Extension Phase 2** - Complete extension from Parks Highway to Nelson Road, including bridge over the Alaska Railroad and replacing the bridge over Wasilla Creek.	Congestion Relief	$5.0	MSB Bond, State Legislative Grant
M2	**Hermon Road Reconstruction and Extension - Parks Highway to Palmer-Wasilla Highway** - Upgrade existing roadway to four lanes and new four-lane construction to provide an additional north-south corridor in the Wasilla Commercial District (distance of 0.8 mile).	Congestion Relief	$6.0	MSB Bond, City of Wasilla, and/or State Legislative Grant
M3	**Nelson Road Extension -** Extend Nelson Road north to Fairview Loop Road, providing secondary access to the area south of the Trunk Road-Parks Highway Interchange.	Congestion Relief, Safety	$3.0	MSB Bond, State Legislative Grant
M4a	**Seldon Road Upgrade - Wasilla Fishhook to Snow Goose** - First phase of the project to reconstruct Seldon Road, between Wasilla Fishhook and Lucille Street, to minor arterial highway standards. This section of Seldon road has pavement grade, sight distance, drainage, and embankment issues. Includes pedestrian facilities.	Capacity Improvement	$13.0	MSB Bond, State Legislative Grant
M5	**Engstrom Road Congestion Relief** – assess various alternatives to relieve congestion on Engstrom Road and provide a second access to Trunk Road and or Palmer Fishhook Road.	Congestion Relief, Safety	$2.5	MSB Bond, State Legislative Gran
M6	**Engstrom North Extension to Tex Al** - Construct an upgraded two-lane major collector from the northern terminus of Engstrom Road to its intersection with Tex	Congestion Relief, Safety	$2.5	MSB Bond, State Legislative

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
	Al Drive.			Grant
M7	**Tex Al Road Upgrade and Extension** - Construct an upgraded two-lane major collector from Wasilla Fishhook Road to its existing terminus. Extend Tex Al Drive east to Palmer Fishhook Road.	Congestion Relief, Safety	$5.5	MSB Bond, State Legislative Grant

Figure 26. Short-term Roadway Recommendations



The MSB also has the following recurring programs that are proposed to be funded as part of the potential MSB road bonds to be issued in 2018, 2022, and 2026. These programs are funded at $2.5 million in 2018, $4.0 million in 2022, and $6.0 million in 2026. These programs are proposed to be funded for 1 or 2 years using bond revenues, and include:

- **MSB Recurring Projects** – Planning Studies, Safe Routes to Schools, Traffic Calming, Trails, Transit, Reconnaissance Engineering
- **MSB Substandard Road Improvements** – Address various MSB owned substandard roads
- **MSB Substandard Bridge Improvements** – Address various MSB owned substandard bridges
- **MSB Asset Management Program** – Obtain funding to do major maintenance or upgrades to MSB owned collectors and arterials

The MSB also has its annual **Fish Passage Program**, which funds the replacement of non-functioning culverts that hinder fish passage with either an improved culvert or a bridge structure. This program is funded through grants from the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, the Mat-Su Salmon Partnership, or other conservation organizations. The local match is covered with MSB non-bond revenues. It is estimated that this program will occur annually throughout the 20-year life of the LRTP at a cost of $1 million annually.

MSB voters passed a **2013 School Access Road Bond** that was only partially matched by the State. The MSB will continue to attempt to secure the remaining $14 million in State funds for these projects. **Neither the Fish Passage Program nor the State match for the 2013 School Access Road Bond package are included in the MSB fiscally constrained program**.

Medium Term (2020–2025)

The medium-term elements are those that are higher-priority and address some of the MSBs mobility and safety needs. The DOT&PF medium-term roadway projects are shown in Table 12**Error! Reference source not found.**. The total roadway costs for these medium-term projects are $342.66 million. These projects are shown on Figure 27.

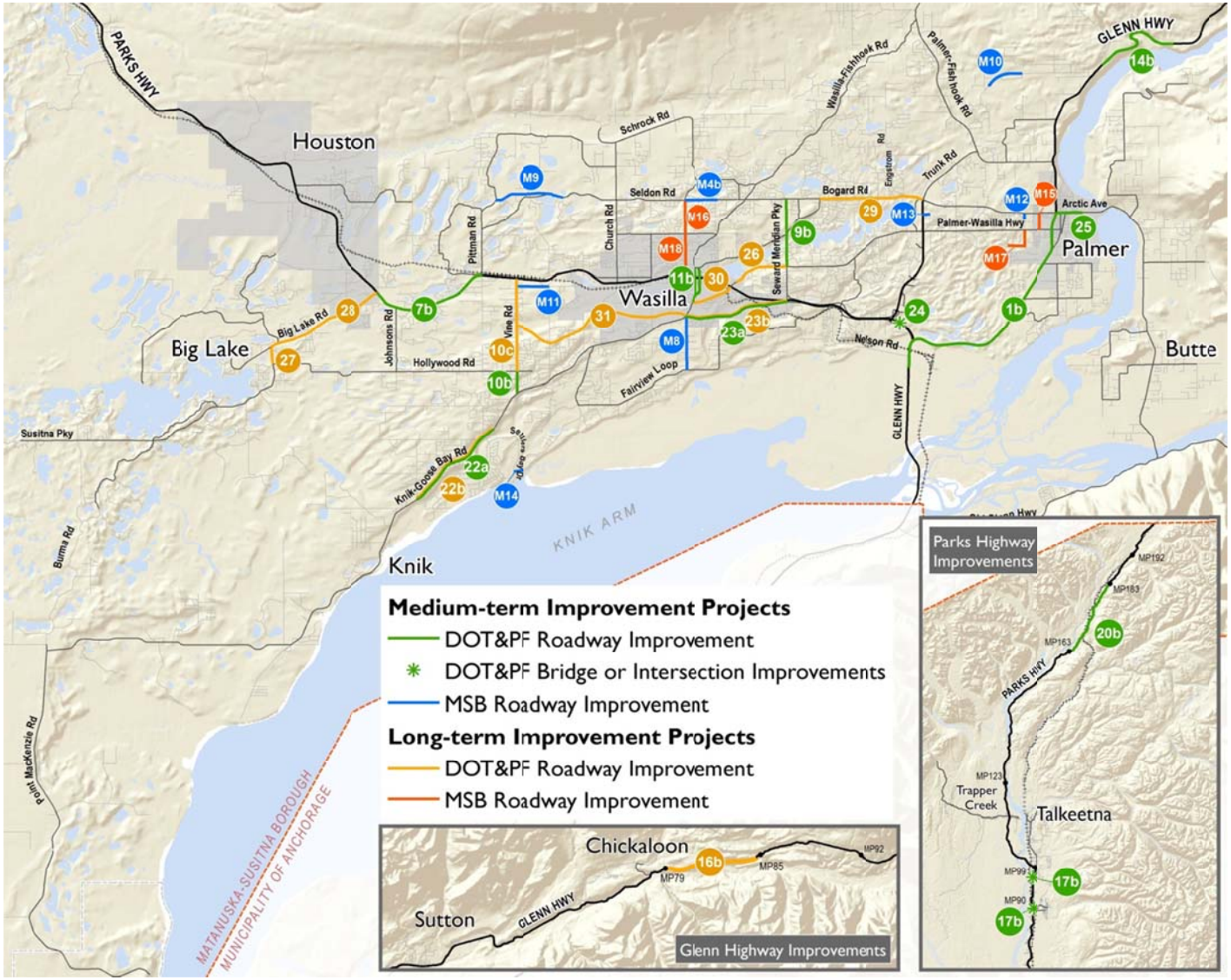
Table 12. DOT&PF Medium-term Roadway Projects in the MSB

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
1b	**Glenn Highway MP 34-42 Reconstruction (Parks to Arctic Renovation, 4-Lane)** - Complete the upgrade the NHS Glenn Highway to a four-lane arterial with frontage roads where appropriate from the Glenn-Parks Interchange through Palmer to the Arctic/Old Glenn Highway intersection.	Congestion Relief	$27.3	FHWA
7b	**Parks Highway MP 48.8 to 52.3 - Pittman Road to Big Lake Road Reconstruction** - Widen Parks Highway to 4 lanes, with attendant safety improvements, between Pittman Road and Big Lake Cutoff.	Congestion Relief	$15.50	FHWA
9b	**Seward Meridian Parkway – Palmer-Wasilla Highway to Seldon Road** – Reconstruct Seward Meridian Parkway between the Palmer-Wasilla Highway and Bogard Road to a four-lane arterial with a pedestrian trail. Extend the Seward Meridian Parkway from Bogard Road to Seldon Road as a two-lane arterial with pedestrian facilities.	Congestion Relief	$13.4	FHWA
10b	**Vine Road Improvements - Knik-Goose Bay Road to Hollywood Boulevard** - Project will rehabilitate the State owned portion of Vine Road to an improved two-lane facility, including drainage, repaving, lighting, pedestrian facilities, and safety improvements as necessary.	Congestion Relief	$8.5	FHWA
11b	**Wasilla Fishhook Road/Main Street (Yenlo Couplet)** - Construct the North-South Couplet to improve traffic movement in these directions in downtown Wasilla. Main Street and Knik-Goose Bay Road will be the southbound leg and Talkeetna and Yenlo will be the northbound leg.	Congestion Relief	$27.1	FHWA
13b	**DOT&PF MSB Intersection Improvement Program** - Assess and construct traffic signal or roundabouts at intersections that meet need. Locations to be considered over the entire life of the LRTP include, but are not limited to: Hollywood/S. Big Lake, Hollywood/Vine, Spruce/Lucille, Peck/Wasilla Fishhook, Seldon/Church, Seldon/Caribou, Glenn/Palmer Fishhook, Bogard/Engstrom/Green Forest.	Safety	$15.0	HSIP
14b	**Glenn Highway MP 53-56 Reconstruction** - **Moose Creek Canyon** - Major reconstruction of the Glenn Highway through the Moose Creek Canyon. The highway will be straightened and a new 800-foot bridge spanning Moose Creek will be constructed.	Asset Management	$58.0	FHWA
17b	**Parks Highway Bridge Replacement - Montana and Sheep Creek** - The new bridges will have top widths that match the roadway width at the time of construction. Pedestrian facilities will be addressed.	Asset Management, Safety	$25.06	FHWA

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
20b	**Parks Highway MP 163-183 Rehabilitation** - Rehabilitate the Parks Highway between MP 163 and MP 183 to improve drainage and construct passing lanes. Construct a grade separated rail crossing at Hurricane.	Asset Management	$44.0	FHWA
22a	**Knik-Goose Bay Road - Settlers Bay to South Alix Drive** - Widen to 4 lanes with appropriate intersection improvements and pedestrian amenities (distance of approximately 3 miles). Design, ROW, Utilities	Congestion Relief	$8.2	FHWA
23a	**Parks Highway Alternative Corridor – Segment 1 Parks Highway/Seward Meridian Parkway to Knik-Goose Bay Road** - Construct a controlled access highway south of Wasilla to move through traffic around Wasilla. Corridor preservation is the highest priority.	Congestion Relief	*$12.6*	*FHWA/State*
24	**Glenn Parks Interchange - Hospital Access Improvements** - Develop additional accesses to the Mat Su Regional Medical Center, which is currently only served by a single access point. Develop Old Mat Road as a frontage road to the Glenn Highway. Open Duchess Drive at Trunk Road to left turn ingress and egress.	Safety/Access	$12.0	HSIP
25	**Old Glenn Highway - New Glenn Highway to Airport Road** - Expand to a five-lane section.	Congestion Relief	$12.00	State
	Ongoing DOT&PF Asset Management and HSIP Programs: Annual funding for future asset management and HSIP projects estimated at $4.0 million annually.	Asset Management and Safety	$24.0	FHWA/HSIP

Phased projects are indicated by the use of a letter after the project ID.
Projects that are not completed by 2035 are shown in italics. Additional funding will be required to complete these projects.

Figure 27. Medium- and Long-term Roadway Recommendations



Projects to be funded by the MSB in the medium term are shown in Table 13**Error! Reference source not found.**. These projects total $36 million.

Table 13. MSB Medium-term Roadway Projects

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
M4b	**Upgrade Seldon Road from Snow Goose to Lucille Street** - Phase 2 of the reconstruction of Seldon Road between Wasilla Fishhook and Lucille Street to major collector or higher standards. This section of Seldon Road has grade, sight distance, drainage, embankment, and failing pavement issues.	Capacity and Congestion Relief	$13.0	MSB Bond, State Legislative Grant
M8	**Fern Street -** Upgrade Fern Street between Knik-Goose Bay Road and Fairview Loop Road, creating an upgraded north-south collector route.	Congestion Relief and Connectivity	$6.0	MSB Bond, State Legislative Grant
M9	**Seldon Road - Beverly Lake Road to Pittman Road** - This project completes the Bogard-Seldon corridor from the Glenn Highway to Pittman Road.	Capacity and Safety	$7.0	MSB Bond, State Legislative Grant
M10	**Jensen Road Extension to Soapstone Road** - This will provide direct access from the growing Soapstone Road area to Palmer Fishhook Road, allowing more direct access to Trunk Road and the Parks Highway.	Capacity and Safety	$1.5	MSB Bond, State Legislative Grant
M11	**Museum Drive Extension - West to Vine Road** - Provides local frontage road connections to the south side of the Parks Highway.	Congestion Relief and Safety	$4.0	MSB Bond, State Legislative Grant
M12	**Hemmer Northern Extension to Bogard Road East Extension** - Extend Hemmer Road north to Bogard Road to provide a more direct connection. The distance less than 1/4 mile, right of way is needed.	Connectivity	$0.5	MSB Bond, State Legislative Grant
M13	**Katherine Drive Connection to Trunk Road** - This project will connect Mid-Town Estates to Trunk Road at the already constructed median break and turn pockets on Trunk Road.	Connectivity and Safety	$1.0	MSB Bond, State Legislative Grant
M14	**Settlers Bay Drive Extension to S. Hayfield Drive** – Connect these two routes to allow for secondary access from the Settlers Bay Development to Fairview Loop Road via South Hayfield Drive.	Connectivity and Safety	$3.00	MSB Bond, State Legislative Grant

Long Term (2023–2035)

The long-term elements address some of the remaining mobility and safety needs. The roadway projects are shown in Table 14. The total roadway costs for the DOT&PF long-term project is $634.0 million. These projects are shown on Figure 27, above.

Table 14. DOT&PF Long-Term Roadway Projects

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
10c	**Vine Road Improvements – Hollywood Boulevard to Parks Highway** - Project will rehabilitate the MSB owned portion of Vine Road to an improved four-lane facility, including drainage, repaving, lighting, pedestrian facilities, and safety improvements as necessary.	Congestion Relief, Connectivity, Safety	$33.5	FHWA
16b	**Glenn Highway Rehabilitation MP 79-84.5** - Improve alignment and mitigate rock fall.	Asset Management	$36.3	FHWA
22b	**Knik-Goose Bay Road - Settlers Bay to South Alix Drive Widen to 4 Lanes Construction**	Congestion Relief	$37.80	FHWA
23b	**Parks Highway Alternative Corridor Segment I: Parks Highway/Seward Meridian to Knik-Goose Bay Road: Construction**	Congestion Relief	$132.40	FHWA/State
26	**Palmer-Wasilla Highway: Seward Meridian Parkway to Fred Meyers Widen to 5 lanes –** Add two additional travel lanes and widen Cottonwood Creek Bridge to five lanes.	Congestion Relief	$30.00	FHWA
27	**South Big Lake Road - North Shore Drive to Hollywood Road Rehabilitation** - Rehabilitate Big Lake Road from North Shore Drive through the Big Lake Town Center to Hollywood Road with appropriate pedestrian amenities.	Asset Management	$5.0	State
28	**Big Lake Road - North Shore Drive to Parks Highway Reconstruction** - Reconstruct Big Lake Road to a four-lane facility with pedestrian amenities.	Congestion Relief	$5.0	FHWA
29	**Bogard Road Between Seldon and Trunk -** Widen to four lanes to accommodate increased traffic with pedestrian facilities.	Congestion Relief Capacity	$49.0	State
30	**Palmer-Wasilla Highway Extension Reconstruction** - Expand to a five-lane facility between the Parks Highway and Knik-Goose Bay Road.	Congestion Relief Capacity	$20.0	FHWA
31	**Parks Highway Alternative Corridor Segment 2: Knik-Goose Bay Road to Vine Road: Design, ROW, Utilities , Construction**	Congestion Relief	$160.0	FHWA/State
	Ongoing DOT&PF Asset Management and HSIP Programs: Annual funding for future asset management and HSIP projects estimated at $8.5 million annually.	Asset Management and Safety	$85.0	FHWA/HSIP

Phased projects are indicated by the use of a letter after the project ID.
Projects that are not completed by 2035 are shown in italics. Additional funding will be required to complete these projects.

Projects to be funded by the MSB in the long term are shown in Table 15**Error! Reference source not found.** and Figure 27, above. The long-term MSB funded projects total $34 million.

Table 15. MSB Long-term Roadway Projects

ID	Description	Purpose	Estimated Cost (millions)	Potential Funding Source
M15	**Felton Road Extension - Arctic/Bogard to Palmer-Wasilla Highway** - Two-lane extension to provide north-south access from the Palmer-Wasilla Highway to Arctic/Bogard and Palmer High School.	Congestion Relief	$8.0	MSB Bond, State Legislative Grant
M16	**Lucille Street - Spruce to Seldon (MSB) 4-Lane Upgrade** - Upgrade Lucille Street to a four-lane rural section with drainage, intersection improvements, and pedestrian amenities (distance of 1.0 mile).	Congestion Relief	$7.0	MSB Bond, State Legislative Grant
M17	**Valley Pathways School Access Improvement** - Construct a new road from Valley Pathways at the end of France Road east to intersect with the signalized intersection at the Palmer-Wasilla Highway and Hemmer Road.	Congestion Relief	$9.0	MSB Bond, State Legislative Grant
M18	**Lucille Street - Parks Highway to Spruce (City of Wasilla) 4-Lane Upgrade** - Upgrade Lucille Street to a four-lane urban section with drainage, intersection improvements, and pedestrian amenities (distance of 1.25 miles).	Congestion Relief	$10.0	MSB Bond, City of Wasilla, and/or State Legislative Grant

Illustrative Projects

Due to the future system needs and limited financial resources, there was not sufficient funding to include several needed improvements. Among the projects not included in this fiscally constrained plan are:

- Expand the Glenn Highway from Eklutna to the Glenn/Parks Interchange to six lanes
- Upgrade Trunk Road Interchange to accommodate westbound left turn movements
- Johnson Road Upgrade and Extension to Knik-Goose Bay Road
- Pave Hatcher Pass Road, MP 18 to 20
- Widen Knik-Goose Bay Road from Centaur to Settlers Bay Drive to six lanes
- Widen Knik-Goose Bay Road from Alix Drive to Point MacKenzie Road to four lanes
- Expand the Parks Highway from the Glenn/Parks Interchange to Seward Meridian Parkway to six lanes
- Reconstruction of Pittman Road
- West Carmel Drive Reconstruction

- Point MacKenzie Road – Knik-Goose Bay Road to Ayshire Reconstruction upgraded two-lane facility
- Knik Arm Crossing Frontage Roads at Port MacKenzie Access
- Bogard/Seldon Roads Corridor – 4-Lane Upgrade from New Trunk to Bogard/Seldon Intersection
- Seward Meridian – South Extension to Fairview Loop
- Ayshire Road to Little Su Landing Improvements
- New Big Lake Collector Road – North Shore to West Susitna Parkway
- Foothills Drive Reconstruction
- Oilwell Road Upgrade – Petersville Road to Moose Creek Bridge
- Smith Road Reconstruction and Pedestrian Pathway
- West Susitna Parkway Extension to Fish Creek Agricultural Area
- Sylvan Road to Hollywood Upgrade and Extension South to Hollywood Drive
- West Susitna Access Development Program
- South Big Lake Road Town Center Realignment
- Seldon Road Extension – Pittman Road to Parks Highway
- Point MacKenzie Road – Port MacKenzie to Ayshire Rehabilitation
- Burma Road Construction – Upgrade and Realign Burma Road from Point MacKenzie Road to West Susitna Parkway

Several other identified DOT&PF project needs can be found at http://www.dot.state.ak.us/stwdplng/cip/stip/needslist/index.cfm. The MSB needs list can be found in their Capital Improvement Program, which is available online at http://www.matsugov.us/cip.

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Chapter 6
Strategy Development

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Chapter 6 Transportation Improvement Strategies

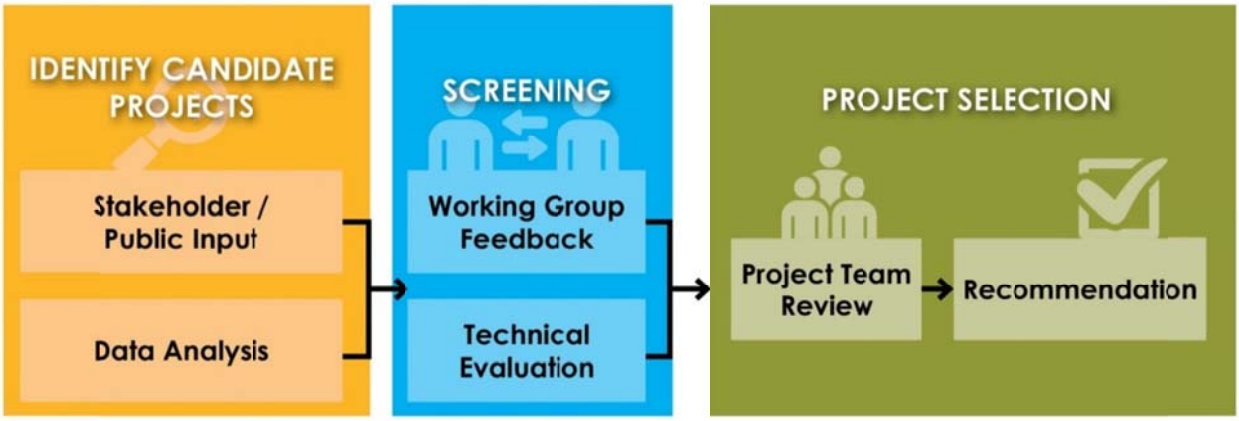
This chapter describes the processes used to identify and develop other transportation improvement strategies to meet the LRTP's goals. While road improvements are needed to address the MSB's transportation needs, other improvements are also needed. Ideas for these additional strategies came from the MSB community and residents through public meetings, stakeholder meetings, workshops, and online feedback as well as technical analysis.

Identification of Alternatives to Roadway Improvements

The Alternative Transportation and Land Use Workshop, held in April 2016, reviewed the transportation issues facing the MSB and gave participants an overview of non-roadway strategies that other communities are using to solve transportation problems. Workshop participants were divided into groups and asked to provide input on what type of land use, transit, bicycle/pedestrian, and transportation demand management (TDM)/transportation system management solutions (TSM) the MSB should pursue. An online open house allowed the general public to provide feedback on these alternative strategies. Based on feedback from the public, the working group meeting, and the technical analysis, alternative strategies were identified and evaluated for improvements that should be implemented by the MSB. Figure 28 summarizes the strategy identification and evaluation process.

Alternative Transportation and Land Use Workshop

Figure 28. Strategy Identification and Evaluation Process



Evaluation

The candidate strategies were further assessed by a working group process and a technical evaluation. The working group scored each strategy on their compatibility with the goals and objectives of the MSB 2035 LRTP, the extent of the strategy's benefits, and their willingness to support the improvement. The technical evaluation was scored based on compatibility with goals and objectives, the extent of the improvement's benefits, and its technical feasibility.

The scoring process used to evaluate the candidate strategy was not the only criterion for project selection and inclusion. Improvements were selected based on several factors including:

- Technical evaluation scoring
- Degree to which candidate strategies are complementary with other projects to create overall system improvements
- Feedback from the public and stakeholders
- Consideration of which strategies were implementable from a public support and project development viewpoint
- Required by agency or regulation
- Available funding

Recommendations

The resulting recommended strategies are described in Chapter 2 of the LRTP.

Chapter 7
Air Transportation

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Chapter 7 Air Transportation

The MSB has the highest concentration of public and private airports in the nation. Aviation generates approximately 380 jobs, $21 million in labor income, and $17.5 million in business sales within the MSB[25] and provides the only reliable year-round means of access to remote areas of the MSB. With an estimated Borough population of 100,178, and almost 1,500 aircraft, the MSB hosts an average of one airplane for every 68 residents. The number of aircraft reported as personal property within the MSB has increased from approximately 500 in 1984 to 1,472 in 2017[26]. This increase of 3.3 percent per year is likely to continue as the MSB grows. The MSB does not levy an aviation personal property tax on aircraft registered in the Borough.[27] For additional information on air transportation in the MSB, please see the Regional Aviation System Plan (RASP).

Existing Air Transportation Facilities

There are currently eight public airports within the MSB that are under the jurisdiction of DOT&PF and two municipal airports (see Figure 29 and Table 16). None have regularly scheduled commercial airline operations. The two municipal and three state airports have air taxi operations. There are also 34 seaplane bases and nine heliports registered with the Federal Aviation Administration (FAA). Most seaplane bases are public domain but many of the heliports are private. The MSB is also home to more than 200 private airports/airstrips[28], generally concentrated in residential areas with road access. Nearly one-third of these airports are unregistered with the FAA. There are also approximately 15 private airparks[29] in the MSB. Several of these airparks, such as Wolf Lake and Anderson Lake, have more than 100 based aircraft and are among the busiest airports in the MSB.

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25 Northern Economics. 2016. Economic Contributions of Matanuska-Susitna Borough Airports. January 2016. Prepared for the MSB. Available on the internet at: https://www.matsugov.us/plans?task=download&collection=plan_documents&xi=3&file=plan_document_upload&id=14499

26 According to the FAA Registry available on the internet at: http://registry.faa.gov/aircraftinquiry/statecounty_inquiry.aspx

27 MSB Assessor's office, 8/2014.

28 An airstrip is an airplane landing facility that typically has one runway and only basic facilities, while an airport generally has one or more runway(s) and more facilities such as an air traffic control tower, or passenger terminal.

29 In this LRTP, airpark refers to an airport owned by a group of private property owners with homes, hangars, and/or other facilities adjacent to a shared private runway.

Figure 29. Public Airports in the MSB

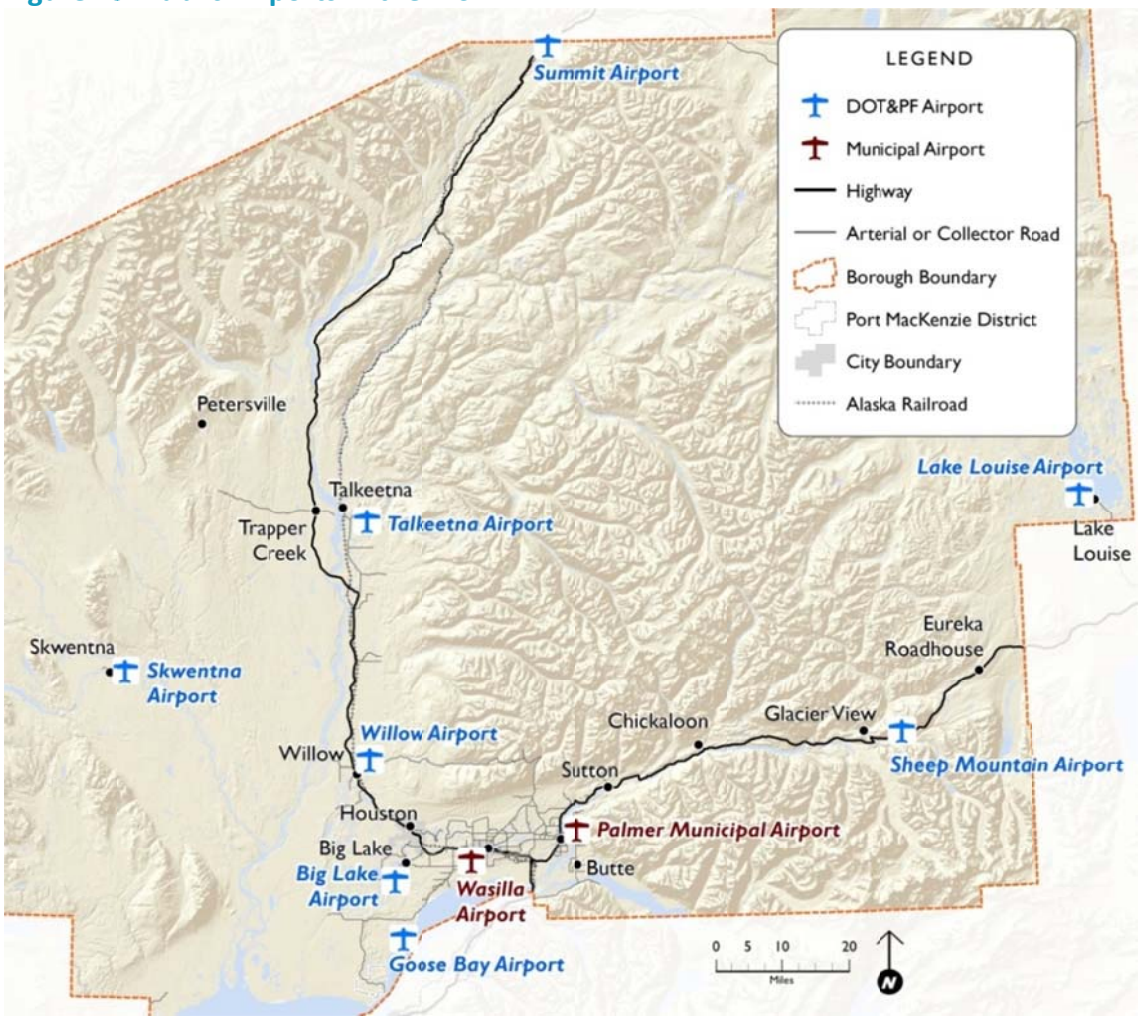

Table 16. MSB Public Airports

Airport	Owner	Length (ft.)	Width (ft.)	Surface	Approach Navigation Aids	Instrument or Visual
Big Lake	DOT&PF	2,435	70	Gravel	VOR	IFR
Goose Bay	DOT&PF	3,000	75	Gravel	None	VFR
Lake Louise	DOT&PF	3,000	60	Gravel	None	VFR
Palmer	City	6,009	100	Asphalt	VASI/PAPI	IFR
Sheep Mountain	DOT&PF	2,270	60	Gravel	None	VFR
Skwentna	DOT&PF	3,400	75	Gravel	None	VFR
Summit	DOT&PF	3,814	80	Gravel	None	VFR
Talkeetna	DOT&PF	3,500	75	Asphalt	VASI	IFR
Wasilla	City	3,700	75	Asphalt	PAPI	IFR
Willow	DOT&PF	4,400	75	Gravel	None	VFR

IFR= Instrument Flight Rules; PAPI= Precision Approach Path Indicator; VASI= Visual Approach Slope Indicator; VFR= Visual Flight Rules; VOR=VHF Omni-directional Radio Range
Source: http://www.gcr1.com/5010web/ and http://www.dot.state.ak.us/stwdav/documents/

Public Airports under DOT&PF Jurisdiction

The public airport facilities under DOT&PF jurisdiction in the MSB include:

- Big Lake Airport;
- Goose Bay Airport;
- Lake Louise Airport;
- Sheep Mountain Airport;
- Skwentna Airport;
- Summit Airport;
- Talkeetna Airport; and
- Willow Airport.

DOT&PF is responsible for the maintenance and operations of these airports. None of these airports has an Air Traffic Control Tower. The only airport under DOT&PF jurisdiction with a manned Flight Service Station is the Talkeetna Airport, which also has the highest activity level (approximately 30,000 operations/year) of the eight airports. All but two of the DOT&PF-owned facilities (Sheep Mountain and Summit) are included in the 2015-2019 National Plan of Integrated Airport Systems (NPIAS). Inclusion in the NPIAS is a requirement for receiving Federal funding for airport improvements. To be considered for inclusion in the NPAIS, an airport must have at least 10 locally owned based aircraft, be no closer than 20 miles from the nearest NPAIS airport, and be located at a site that can be expanded and improved to provide safe and efficient airport facilities.

Big Lake Airport

The Big Lake Airport has one gravel runway (2,435 feet long and 70 feet wide). The airport lighting is operated by pilot control, and the weather data source is via transcribed weather broadcast. There is no designated runway for planes equipped with skis in the winter, although a snow pack is maintained when possible to allow for planes on skis. Big Lake is not a recognized seaplane base, but the lake is used regularly by airplanes in both summer and winter. Big Lake Airport is the site of approximately 20,000

Big Lake Airport

aircraft operations annually[30]. The runway surface was rehabilitated in 2010, and airspace obstructions (e.g., brush, small trees) were removed in 2013. The need for apron expansion and flood mitigation has been identified by DOT&PF, but funding is currently unavailable. As of August 2016, Big Lake Airport was starting an update to their airport master plan.

Goose Bay Airport

The Goose Bay Airport has one gravel runway (3,000 feet long and 75 feet wide). The airport lighting is operated via pilot control, and there is no weather data source. There are no designated facilities to accommodate seaplanes or planes equipped with skis, although a snow pack is maintained when possible to allow for planes on skis. There is no State maintenance performed on this facility, and there are approximately 5,500 annual aircraft operations. The runway surface was rehabilitated in 2011. No further needs have been proposed for funding in the DOT&PF 6-year spending plan[31].

Lake Louise Airport

The Lake Louise Airport has a gravel runway (3,000 feet long and 60 feet wide) and serves approximately 300 aircraft operations annually. There is no lighting or weather data source available, and the airport is not maintained in the winter. Evergreen Lodge, on Lake Louise, is recognized as a private seaplane base. The airport has been almost completely reconstructed since 2007, and the runway surface was rehabilitated in 2012. No further needs have been proposed for funding in the DOT&PF 6-year spending plan[32].

Sheep Mountain Airport

The Sheep Mountain Airport has one gravel/dirt runway (2,270 feet long and 60 feet wide[33]). There is no lighting or weather data source available. The airport does not accommodate seaplanes, and no State maintenance is performed on the airport or runway. The runway condition is not monitored, and pilots are advised to perform a visual inspection prior to using. This airport experiences minimal traffic, with roughly 120 operations annually.

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[30] All estimates of airport operations in this chapter are based on the 2014 FAA Terminal Area Forecast. Available at https://taf.faa.gov/

[31] DOT&PF. 2015. Alaska DOT&PF Rural Airport System Draft FFY '11—'17 AIP Spending Plan. December 9, 2015. Available at http://dot.alaska.gov/stwdav/documents/Rural_Airport_System_AIP_Spending_Plan.pdf

[32] DOT&PF. 2015. Alaska DOT&PF Rural Airport System Draft FFY '11—'17 AIP Spending Plan. December 9, 2015. Available at http://dot.alaska.gov/stwdav/documents/Rural_Airport_System_AIP_Spending_Plan.pdf

[33] The official runway width is 10 feet but there is a cleared area that is approximately 75 feet wide.

Skwentna Airport

The Skwentna Airport consists of one gravel runway (3,400 feet long and 75 feet wide). It is the site of approximately 3,500 aircraft operations annually. The airport lighting is operated via pilot control, but there is no weather data source. There are no facilities to accommodate seaplanes. There is no designated runway for planes equipped with skis in the winter, although a snow pack is maintained when possible to accommodate planes on skis west of the Runway 27 threshold. The runway is marked with reflective cones. The runway surface was rehabilitated in 2010, and airspace obstructions (e.g., brush, small trees) were removed in 2013. The Skwentna River is eroding the southeast end of the runway; however, no further needs have been proposed for funding in the DOT&PF 6-year spending plan[34].

Skwentna Airport

Summit Airport

The Summit Airport, near the MSB's northern boundary, has a gravel runway (3,814 feet long and 80 feet wide) that is not monitored, and there is no airport lighting. The weather data source is via transcribed weather broadcast. There is no line-of-sight visibility between the runway ends. Small brush and weeds up to 30 inches high are common on sections of the airfield. Approximately 800 aircraft operations occur annually. There are no seaplane facilities available, and the airport is not maintained during the winter.

[34] DOT&PF. 2015. Alaska DOT&PF Rural Airport System Draft FFY '11—'17 AIP Spending Plan. December 9, 2015. Available at http://dot.alaska.gov/stwdav/documents/Rural_Airport_System_AIP_Spending_Plan.pdf

Talkeetna Airport

The Talkeetna Airport has an asphalt runway (3,500 feet long and 75 feet wide). The airport lighting is operated via pilot control, and the weather data source is via transcribed weather broadcast. There is no designated runway for planes equipped with skis in the winter, although a snow pack is maintained when possible to allow for planes on skis. There are no facilities to accommodate float planes. A gravel helipad (480 feet long and 85 feet wide) is available at the airport. The helipad is currently located on the active runway. During the summer, it is one of the busiest non-primary airports. The airport averages 30,000 operations annually. A considerable number of improvements have been implemented at the airport over the past 20 years, including apron expansion, taxiway construction, runway rehabilitation, and obstruction removal (e.g., brush, trees). DOT&PF is currently working on improvement and pavement rehabilitation. Specific improvements include resurfacing existing taxiways/runways, additional signage, updating runway designation from 18/36 to 1/19, converting Taxiway C to an exit taxiway, construction of a new transient apron and taxi-lane, tree clearance, a new pedestrian pathway, and new fencing.

Talkeetna Airport

Willow Airport

The Willow Airport has a gravel runway (4,400 feet long and 75 feet wide). The airport lighting is via pilot control. When available, weather data reports are provided on an hourly basis only. The airport, which is the site of approximately 15,700 operations annually, is maintained by DOT&PF year-round. Willow Lake is used regularly by airplanes in summer, on floats, and winter, on skis. The runway was rehabilitated in 2005 and 2007, and an airport master plan (AMP) was initiated in 2009. Identified needs at the Willow Airport include taxiway improvements, construction of access roads, signage, fencing, relocation of the Senior Center


Willow Airport

Access Road, installation of Automated Weather Observation System, highway crossing improvements, and an extension of Runway 3/21. A $3.8 million airport improvement project has been identified in the DOT&PF 6-year spending plan[35], but it remains unfunded.

Municipal Airports

Palmer Airport

The Palmer Airport, managed by the City of Palmer, is one of two municipal airports located within the MSB. The Palmer Airport was constructed in 1947, and at that time consisted of two, 3,000 foot runways. Ownership of the airport was transferred from the State of Alaska to the City of Palmer in 1963.

The airport has three runways for aircraft use. The primary runway is a 6,009-foot-long by 100-foot-wide paved runway (16/34). A gravel runway, parallel to 16/34, is available for aircraft with tundra tires. This runway (16/34S) is 1,560 feet long and 60 feet wide. A 3,615-foot-long by 75-foot-wide paved runway (9/27) provides crosswind coverage but is closed to aircraft greater than 12,500 pounds. The 3,615-foot-long runway has a paved parallel taxiway, while the 6,000-foot-long runway has only exit and apron taxiways.

The airport has two apron areas, one for general aviation, and another for commercial cargo and/or passenger operations. The airport is the site of approximately 30,000 aircraft operations annually.

Palmer Airport

FAA maintains a manned Flight Service Station with two employees. There are 111 based aircraft at the Palmer Airport. Services available at the airport include: a flight school, 24-hour fuel service, engine rebuilding, airframe repair/painting, and

[35] DOT&PF. 2015. Alaska DOT&PF Rural Airport System Draft FFY '11—'17 AIP Spending Plan. December 9, 2015. Available at http://dot.alaska.gov/stwdav/documents/Rural_Airport_System_AIP_Spending_Plan.pdf

avionics. Although there are no scheduled commercial flights using the Palmer Airport, the airport has been used as a staging area for air shipments to rural Alaska for several years. Also, federal agencies periodically use the airport for logistical support and the State Division of Forestry uses the airport during the summer fire season. Existing land use around the airport is compatible with general aviation use.

Over the past 20 years, the airport has been the site of taxiway construction, runway extension, apron expansion, land acquisition, and runway lighting rehabilitation. The 2015 Palmer AMP proposed many improvements to be accomplished by 2035. Recommended improvements included relocating the golf course fence, construction of security fencing, construction of a sand storage building, relocation of Taxiway B, construction of a heliport, and commercial apron expansion. As of July 2017, the airport was in the process of rehabilitating and repaving Runway 16/34.

Wasilla Airport

The Wasilla Airport, managed by the City of Wasilla, is the other municipal airport located within the MSB. The airport's 3,700-foot-long by 75-foot-wide paved runway is being extended to 5,800 feet. The airport has approximately 1.6 million square feet of apron space, which includes 144 tie-down spaces and 20 lease lots. An AMP update was completed in 2012. In addition to the runway extension, other improvements identified in the master plan included development of a pilot/passenger facility, expansion and paving of the general aviation apron, extension of the parallel taxiway, utility improvements, and development of the North Airpark.

Short-term (5 years or less) improvements included:

- LPV approach
- Property acquisition for airport development
- Pilot/passenger facility
- General aviation apron expansion and paving
- Airport access road improvements
- Parallel taxiway extension
- ILS equipment installation

Wasilla Airport

Mid-term (6 to 10 years) improvements included:

- Seaplane base
- Airport water and sewer utility improvements
- North Airpark development

Long-term (11 to 20 years) improvements included:

- Taxiway, heliport, and lease lot development
- East Apron expansion

The total cost of these improvements is approximately $85 million in 2012 dollars.

In the long term, the City of Wasilla is interested in establishing a commercial base of operations for passenger and/or cargo services that will promote the economic vitality of the community and surrounding region.

Private Airstrips

It is estimated that there are currently more than 200 private airstrips throughout the MSB. About one-third of these airports are not registered with the FAA, and only slightly more than half have had an FAA airspace review. Many private airstrips are located within subdivisions in the road-accessible portions of the MSB. Some private airports/airstrips developed within residential airparks are among the busiest airports in the MSB. Wolf Lake is an example of a private residential airpark.

As the MSB continues to grow, the availability of large, open land areas that provide the space needed for safe aviation activities will decrease and aircraft operators will face more operational restrictions. The FAA requires private airports to complete an airspace analysis evaluation to ensure the safe operations of aircraft in the vicinity of other developments. Very few airport owners complete this evaluation. Enforcement of this policy is limited due to a lack of public awareness and trained personnel as well as the large number of airports needing evaluations.

Controlled and Reserved Airspace

Airspace is controlled by the Federal government for maintaining separation between aircraft as well as between aircraft and terrain to avoid collisions. Airspace reservations require aircraft to fly at set altitudes, on set routes, in certain directions, or at certain speeds. Airspace in various locations throughout the MSB is reserved for specific purposes such as military training, the protection of areas immediately surrounding airports, and the maintenance of designated

flight routes. Land owners are required by Federal regulation to obtain an airspace determination prior to the construction of an airport.

MSB Regional Aviation System Plan Recommendations

While the MSB is not currently an airport owner and operator, it has responsibilities regarding land use planning and promoting economic development, and is interested in working with aviation interests and the public to promote/preserve aviation and encourage compatibility with other activities in the region. The MSB is currently completing Phase II of its RASP to identify how aviation in the MSB may change over time and what actions the MSB should take to support this transportation mode. The RASP was developed in two phases. Phase I, which is complete, includes extensive research to identify demand for new airport facilities in the MSB, preliminary screening of over 30 sites within the MSB, and recommendations. Phase II includes five major tasks: an economic impact assessment of State airports in the MSB, a floatplane base location study, public involvement of user groups, an AMP and layout plan analysis, and a compatible land use study.

The 2008 RASP provided recommendations within five issue categories, summarized below:

- Involvement of the Aviation Community
  - Establishment of an Aviation Advisory Board (AAB). The AAB was established in 2009 by MSB Assembly action and currently meets on a monthly basis. The nine member board is composed of a diverse mix of aviation and non-aviation interests and reports to the MSB Planning Commission.
- Airspace
  - Require new and existing airports, commercial floatplane bases, helipads, and heliports to obtain an FAA airspace determination and registration
  - Encourage pilots to fly with landing lights on to increase their visibility to other planes
  - Hold ongoing discussions between the MSB, FAA, and AAB to discuss military airspace issues
  - Support implementation of Capstone-type technology[36] in the MSB
- Communications
  - FAA should continue to reassign radio frequencies to airports in the MSB following a logical geographic pattern

[36] Capstone refers to a joint industry and FAA research and development project designed to improve aviation safety and efficiency in Alaska putting cost effective, new technology avionics equipment into aircraft and providing the supporting ground infrastructure. The Capstone project was discontinued in 2006 and the FAA has incorporated it into Automatic Dependent Surveillance–Broadcast surveillance system.

  - Communicate private airport locations and radio frequencies to pilots
  - FAA should establish standard VFR reporting points and provide information on military routes
  - Implement a comprehensive pilot education program about all of the topics such as noise abatement procedures, radio frequencies, use of radios and landing lights, land use rules, and more
  - Expand radio and radar coverage in the MSB
- Airport Compatibility
  - Notify property owners of airport locations on MSB or DOT&PF maps and note close proximity to an airport on plats
  - Address airports in comprehensive plans and Special Land Use Districts
  - Involve AAB in Lake Management Plans that address aviation
  - Encourage consolidation of antenna towers and involve AAB in antenna/tall tower reviews
  - Consider airport proximity when siting public facilities near airports
  - Require conditional use permits, planned unit development, or land use permits for new airports, commercial floatplane bases, helipads, and heliports; adopt airport template(s) that address minimum airport safety standards
  - Amend Title 27 (now listed as Title 43) to define platting requirements specifically for airports; require airports to be shown on a plat if subdivision of land is required
- Public Airport Improvements
  - Airport owners should consider RASP public comments about future airport improvement needs

The RASP also recommended that all existing and new airports in the MSB be required to obtain FAA airspace determination and registration.

Other Recommendations

Proposed Precision Instrument Approach to Wasilla Airport

There is currently no regularly scheduled airline commuting services or air freight services available for residents. To address this and provide Anchorage-bound IFR traffic an alternate airport location for use during poor weather, the Wasilla AMP proposed development of a precision instrument approach for Wasilla Airport. To implement an instrument approach at Wasilla Airport, the FAA would likely establish Class E controlled airspace around the airport. This would significantly restrict the operation of VFR aircraft traffic in the area and could effectively close all airports within 5 miles when aircraft approach Wasilla Airport during instrument landing conditions (i.e., ceiling less than 1,000 feet or visibility less than 3 miles). As

mentioned in the Wasilla AMP, airspace conflicts with surrounding airports would need to be resolved.

Improved Airports

Recognizing the importance of aviation within the MSB, it is recommended that the Borough continue to actively support the development, improvement, maintenance, operation, and funding of a system of public airports and seaplane bases throughout the MSB. DOT&PF managed airports should continue to be improved to provide for the needs of air taxi operators and private pilots. The improvements should be prioritized based on activity level and safety needs. The two municipal airports should be improved to provide for the needs of commercial aviation companies as well as air taxi operators and private pilots.

Seaplane Bases

Although public seaplane bases are not generally recognized in the MSB, many of the lakes are used as seaplane bases, with the private sector providing the necessary support facilities. These same lakes are popular recreation sites for residents as well as visitors. The potential for conflicts arises when occupants of aircraft, boats, jet skis, and other watercraft attempt to utilize the same area at the same time. The development of non-commercial seaplane facilities should be encouraged when the need is demonstrated, provided that it is compatible with adjacent recreational and residential land uses. These facilities should be developed with appropriate FAA notification and airspace review and in compliance with U.S. Coast Guard standards for navigable waterways. To the greatest extent possible, facilities (e.g., docks, ramps, floats, hangars, fueling facilities, terminals) for commercial seaplane operations should be restricted to public seaplane facilities for reasons of safety and land use compatibility.

Capital Funding

It is anticipated that the availability of funding from the Federal Airport Improvement Program, which has historically supported a majority of public airport development in the MSB, will be reduced in the foreseeable future. Federally funded airport projects will likely be focused on essential operational improvements deemed necessary by the FAA to keep the airports open and operating in a safe manner. The MSB should encourage public airport sponsors to investigate the potential for Public-Private Partnerships (PPP) in the provision and/or operation of airport infrastructure in the MSB. A PPP is an agreement whereby the private sector utilizes its capital and expertise to provide a service or a facility to a public agency. In return, the public agency shares in the benefits and risks of the project.

Chapter 8
Rail Transportation

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Chapter 8 Rail Transportation

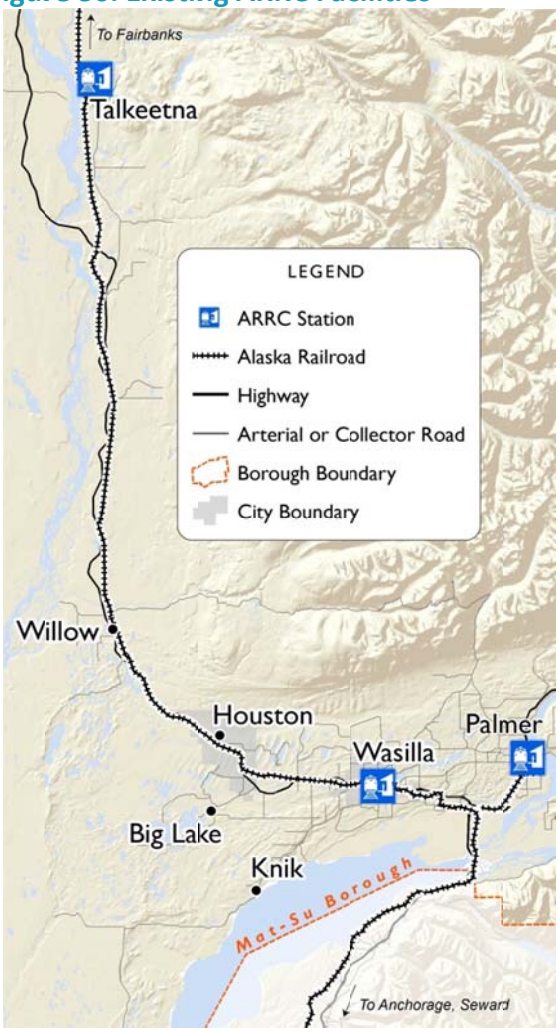
The Alaska Railroad has played a fundamental role in the development and economy of the MSB. Wasilla, Palmer, Chickaloon, Sutton, and other communities got their start as a byproduct of railroad construction and operation between 1915 and 1920. Although some early industries such as coal mining are no longer major economic drivers, others (e.g., gravel extraction and transport) continue to be a thriving basic industry. The railroad has expanded its range of freight and passenger services over the past 20 years. It will play a key role in the long-term growth of Port MacKenzie and development of Matanuska-Susitna Valley industry.

The Alaska Railroad was purchased from the Federal government by the State of Alaska via the establishment of the Alaska Railroad Corporation (ARRC) in 1985. It operates independently as a State-owned corporation under the direction of an appointed board of directors. ARRC provides freight and passenger rail service.

Existing Conditions

Within in the MSB, ARRC has approximately 185.2 miles of mainline track[37] and three stations (Palmer State Fair Ground[38], Wasilla, and Talkeetna), with whistle stops in remote areas (see Figure 30).

Figure 30. Existing ARRC Facilities



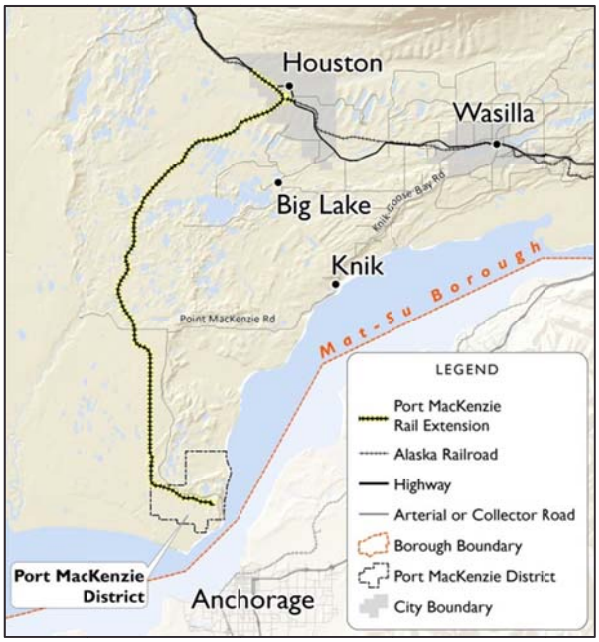
[37] The Palmer spur line is approximately 11 miles.
[38] This station is used to support special events at the State Fair Ground. There is no regular service to this station.

Planned Improvements

Port MacKenzie Rail Extension

The Port MacKenzie Rail Extension project is a MSB project being constructed in cooperation with the ARRC. The project is building a new 32-mile track connecting Port MacKenzie on the Knik Arm of Cook Inlet to the ARRC mainline track near Houston (see Figure 31). When complete, the new rail line would operate as part of the ARRC system. Port MacKenzie lies approximately 30 miles southwest of Wasilla and 5 miles due north of Anchorage, across Cook Inlet. The port has a deep-draft dock (60 feet at low tide) that requires no dredging and can serve the world's largest ships. The port's 8,940 upland acres and 1,300 tide-land acres provide ample room to accommodate bulk resource storage, transport, and processing facilities, as well as rail and terminal facilities for efficient train loading and unloading. All of the project funding thus far has come from State grants. A September 2014 estimate indicated that the project cost will exceed $300 million[39]. As of July 2017, the project is on hold with approximately 60 percent completed. It will cost approximately $125 million to complete the project, but funding has not been identified.

Figure 31. Port MacKenzie Rail Extension



Glenn Highway MP 34–42 Improvements

The Palmer Branch of the ARRC track parallels the Glenn Highway from the Parks/Glenn Highways interchange to downtown Palmer. Over time, residential development has occurred along this area. This growth has resulted in additional side streets connecting to the Glenn Highway. These streets are blocked during the gravel loading process at gravel pit tipple. As the Palmer gravel site is expected to produce gravel for another 20 years, the ARRC is working with DOT&PF, the City of Palmer, and the MSB to identify a solution to the blocked crossings.

[39] As reported by PMRE Executive Director, Joe Perkins, at an August 5, 2014 meeting of the MSB Assembly and reported by KSKA on August 6, 2014.

The gravel train issue at Outer Springer Loop is part of a larger issue for ARRC—improving safety at all locations along the Glenn Highway where the residential side streets cross the railroad tracks.

DOT&PF is considering the railroad as part of its Glenn Highway MP 34-42 Reconstruction project. The DOT&PF project will reconstruct the highway to accommodate increasing traffic, include adding lanes, widen shoulders, install turn pockets, and address other traffic and safety improvements such as road/rail crossings. As part of the design process, the project team is working with a multi-agency Diagnostic Team comprised of engineering and traffic experts. The project will identify options for addressing the gravel train activity at Outer Springer Loop, as well as provide recommendations for improving all road/rail crossings between MP 34 and 42 of the Glenn Highway (see Figure 32).

Possible solutions include:

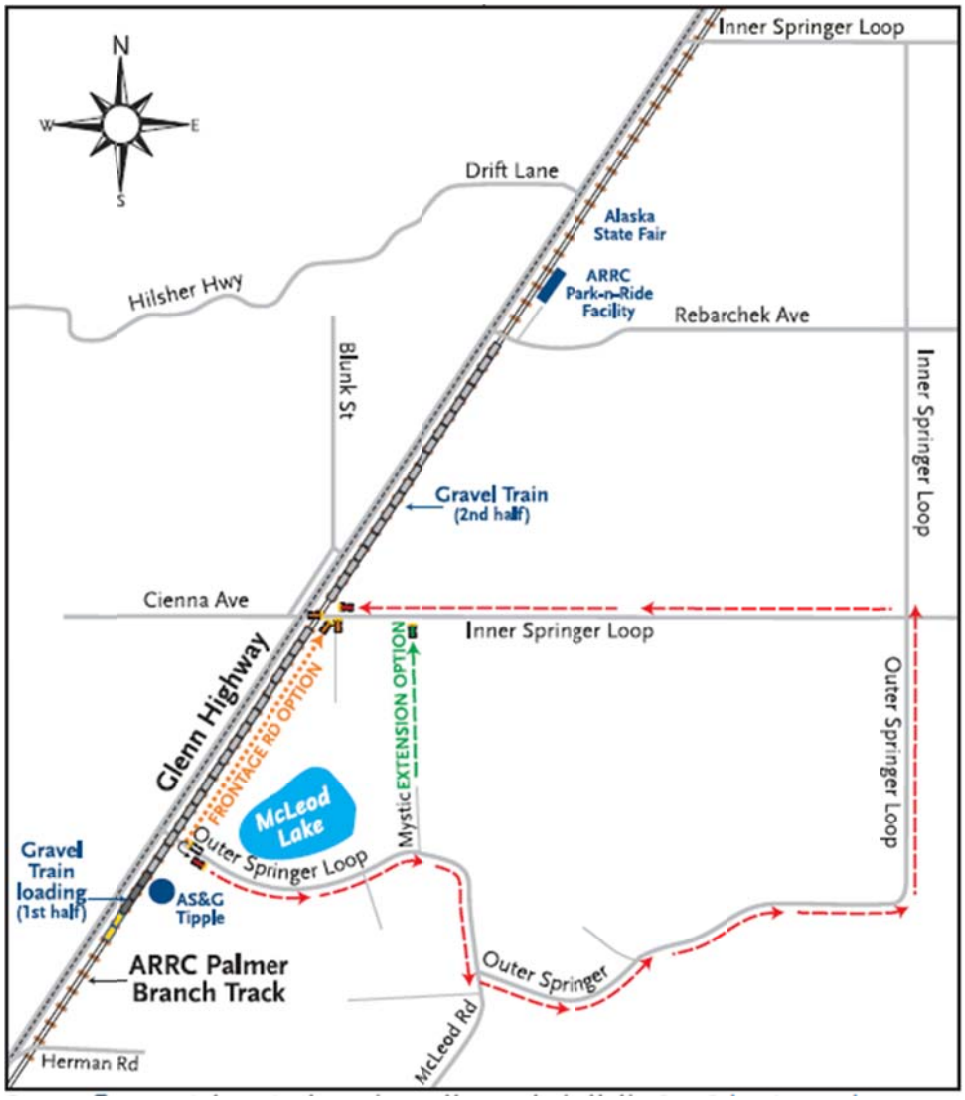
- Providing a shorter bypass route by extending Mystic Circle
- Building a frontage road along the east side of the tracks
- Grade separating one or more crossings
- Extending McLeod Road to the Glenn Highway to eliminate some crossings

Gravel Loading Process:

When an empty gravel train arrives in Palmer, it pulls all 80 to 86 hopper cars (measuring approximately 1 mile long) north of the tipple. The train breaks into two sections to avoid blocking Inner Springer Loop. As the first 40 or so hopper railcars are loaded with gravel, the train moves slowly south, blocking Outer Springer Loop for about an hour.

The process repeats for the second half of the train. When Springer neighborhood vehicle traffic encounters the blocked crossing at Outer Springer Loop, drivers must either wait (up to an hour) for the crossing to clear, or turn around and drive approximately 3 miles to Inner Springer Loop to access the highway.

Figure 32. Potential Improvements to Reduce Blocked Crossings in Palmer

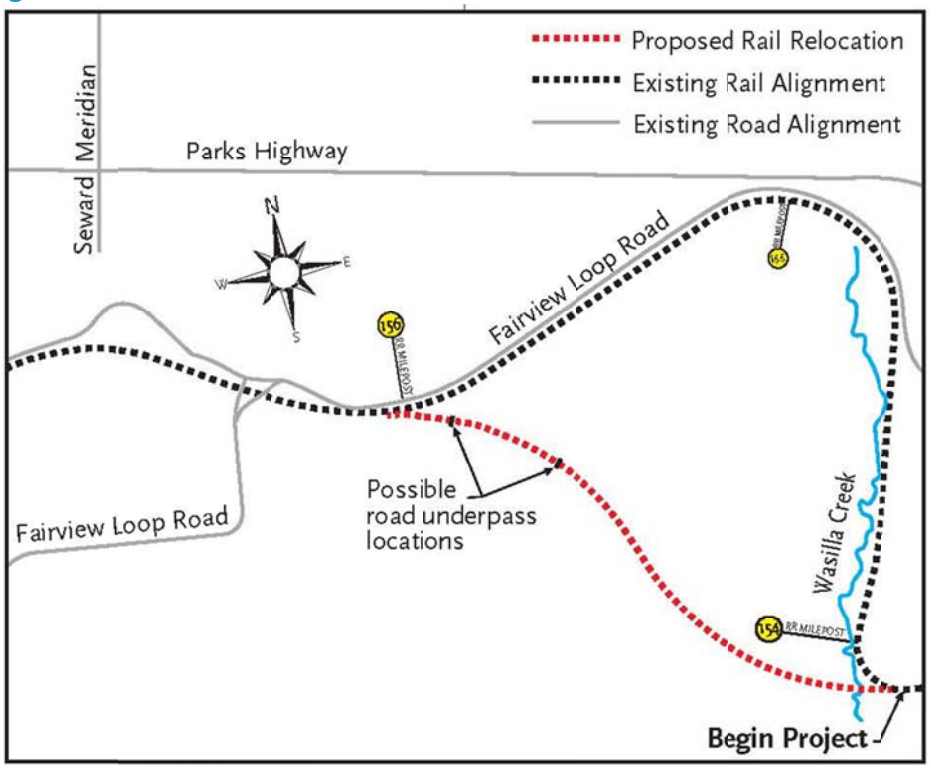


Map Source: ARRC

South Wasilla Rail Line Relocation

The ARRC, in cooperation with the Federal Transit Administration (FTA), plans to straighten curves along the mainline track between ARRC MP 154 (south of Gershmel Loop, where the track begins a sharp curve to the north) and MP 158 (just south of the intersection of the Old Matanuska Road and Glenwood Avenue; see Figure 33). This is part of a larger ARRC effort to reduce track curvature and improve safety along the main line track between Girdwood and Wasilla. This project has both freight and passenger applications, as it will reduce travel times on this section of track as well as improve freight train efficiency and safety. Reducing travel time on this segment would support development of a Wasilla-Anchorage commuter rail. ARRC has the right of way it needs for this relocation effort. This project is estimated at $40 million.

Figure 33. South Wasilla Rail Line Relocation



Source: ARRC

Railroad-Highway Grade Crossings

A railroad-related issue that directly affects the movement of people within the MSB is the adequacy and safety of the railroad-highway grade crossings located on the main line and the Palmer branch. The decision to grade-separate a rail-highway crossing is primarily a matter of safety and economics. Separating a grade crossing normally requires a significant investment and affects many users and nearby property owners.

Decisions should be based on long-term, fully allocated life cycle costs, including highway and railroad user costs, rather than purely on initial construction costs. And as traffic is increasing

on nearly all roads in the MSB, projected traffic levels should be used. Analysis of whether to separate an at-grade crossing should consider the following[40]:

- Savings in highway-rail grade crossing surfaces, crossing signal installation, and maintenance costs;
- The benefits of improved emergency access;
- Eliminating train/vehicle collisions (by using accident prediction values);
- Driver delay cost savings;
- Costs associated with providing increased highway storage capacity (to accommodate traffic backed up by a train);
- Fuel and pollution mitigation cost savings (from idling queued vehicles);
- Effects of any "spillover" congestion on the rest of the roadway system;
- The potential for closing one or more additional adjacent crossings; and
- Train derailment costs.

DOT&PF and ARRC have been working on eliminating some of the at-grade crossings in the MSB. DOT&PF is currently constructing two grade separations of the Parks Highway at Montana Creek (Parks Highway MP 91.6/ARRC MP 206.25) and Sunshine (Parks Highway MP 100.7/ARRC MP 214.30).

An additional grade crossing project (MP 194 Broad Pass RR Overcrossing) is included in the STIP. However, no funds have been allocated for this project.

Federal Railroad Administration Web Accident Prediction System

The Federal Railroad Administration has a web-based accident prediction system (WBAPS) to help states, railroads, and others in determining which crossings may be more hazardous than others. The accident prediction formula is based on information about a crossing's physical and operating characteristics and five years of accident history data at the crossing. It does not consider certain factors such as sight-distance, highway congestion, and hazardous material traffic. The WBAPS data should not be used to rank crossings as most to least dangerous, but it can be used with other information to help identify crossings that may need further evaluation. The WBAPS for the MSB is shown in Table 17.

[40] FHWA. 2002. Guidance on Traffic Control Devices at Highway-Rail Grade Crossings. November 2002. Available at http://safety.fhwa.dot.gov/media/twgreport.htm#72

Table 17. WBAPS Accident Predication Values

#	APV	Crossing	City	Road	Number of Collisions					Warning Device	Trains per Day	Number of Tracks	Maximum Allowable Train Speed	# of Highway Traffic Lanes	AADT
					13	12	11	10	09						
1	0.075797	868318Y	Wasilla	Knik Goose Bay	0	0	1	0	0	GT	18	2	25	4	10,336
2	0.051065	910224K	Wasilla	Abby Blvd	0	1	0	0	0	GT	18	1	35	2	2,000
3	0.039846	868331M	Willow	Willow Station	0	0	0	0	1	GT	18	2	65	2	350
4	0.026881	868311B	Wasilla	Glenn Hwy	0	0	0	0	0	GT	14	1	55	2	20,000
5	0.024132	868319F	Wasilla	Snider	0	0	0	0	0	SS	18	1	49	2	200
6	0.021571	868322N	Wasilla	Pittman Rd	0	0	0	0	0	GT	20	1	49	2	4,280
7	0.020891	868520J	Palmer	Evergreen Ave	0	0	0	0	1	OS	0	2	10	2	9,500
8	0.020409	868315D	Wasilla	Fairview Loop	0	0	0	0	0	GT	18	1	35	2	3,740
9	0.018773	868335P	Willow	Parks Hwy	0	0	0	0	0	GT	18	1	49	2	2,620
10	0.017600	910335C	Wasilla	S Mack Drive	0	0	0	0	0	GT	18	1	49	2	2,000
11	0.016508	868328E	Houston	Nancy Lk Land	0	0	0	0	0	SS	18	1	65	2	200
12	0.016441	868338K	Talkeetna	Parks Hwy	0	0	0	0	0	GT	18	1	49	2	1,510
13	0.016088	868341T	Talkeetna	Talkeetna Spur	0	0	0	0	0	GT	18	1	49	2	1,806
14	0.015696	868323V	Wasilla	Meadow Lakes Rd	0	0	0	0	0	GT	18	1	49	2	1,250
15	0.015538	868325J	Houston	Cheri Lake Rd	0	0	0	0	0	GT	18	1	49	2	1,200
16	0.015256	868512S	Palmer	Outer Springer	0	0	0	0	0	XB	8	1	10	2	400
17	0.014998	868510D	Palmer	Grandview	0	0	0	0	0	XB	12	1	10	2	200
18	0.014851	868320A	Wasilla	Lucille Lane	0	0	0	0	0	GT	18	1	49	2	1,000
19	0.014851	868334H	Willow	Hidden Hills	0	0	0	0	0	GT	18	1	49	2	1,000
20	0.013579	868316K	Wasilla	Glenwood	0	0	0	0	0	GT	18	1	30	2	700
21	0.012772	910360K	Wasilla	East Fireweed	0	0	0	0	0	GT	18	1	55	2	550
22	0.012527	868332U	Willow	Fishhook Willow	0	0	0	0	0	GT	18	1	65	2	510
23	0.012527	868342A	Talkeetna	Talkeetna	0	0	0	0	0	GT	18	2	40	2	510
24	0.012464	910225S	Wasilla	Jude Rd	0	0	0	0	0	GT	18	1	25	2	500
25	0.009772	868345V	Cantwell	Parks Hwy	0	0	0	0	0	GT	12	1	60	2	1,860

#	APV	Crossing	City	Road	Number of Collisions					Warning Device	Trains per Day	Number of Tracks	Maximum Allowable Train Speed	# of Highway Traffic Lanes	AADT
					13	12	11	10	09						
26	0.009355	868343G	Cantwell	Parks Hwy	0	0	0	0	0	GT	14	1	35	2	1,315
27	0.007766	868327X	Houston	Lynx Lake	0	0	0	0	0	SS	18	1	65	2	20
28	0.006927	910343U	Willow	Kashwitna Trail	0	0	0	0	0	SS	18	1	49	1	20
29	0.005488	868508C	Palmer	Matanuska Spur R	0	0	0	0	0	SS	12	1	10	1	50
30	0.000304	868513Y	Palmer	Inner Springer	0	0	0	0	0	XB	0	1	10	2	1,250
31	0.000304	910245D	Palmer	Cope Ind. Way	0	0	0	0	0	XB	0	2	10	2	2,000
32	0.000304	910242H	Palmer	Thuma St	0	0	0	0	0	XB	0	1	10	2	1,500
33	0.000304	868522X	Palmer	Blueberry Ave	0	0	0	0	0	OS	0	1	10	2	300
34	0.000304	868519P	Palmer	Fireweed Ave E	0	0	0	0	0	OS	0	1	10	2	2,860
35	0.000304	868517B	Palmer	Commercial Dr	0	0	0	0	0	OS	0	2	10	2	500
36	0.000304	868516U	Palmer	Springer Inner	0	0	0	0	0	XB	0	1	10	2	3,490
37	0.000304	910308F	Palmer	South Chugach	0	0	0	0	0	XB	0	1	10	2	3,110
TTL:	0.562801				0	1	1	0	2						

AADT=Annual Average Daily Traffic; APV= Accident Prediction Value; FQ=Four Quad Gates; FL=Flashing lights; GT=All Other Gates; HS=Wigwags, Highway Signals, Bells, or Other Activated; NO=No Signs or Signals; OS=Other Signs or Signals; SP=Special Protection (e.g., a flagman); SS=Stop Signs; XB=Crossbucks

Commuter Rail

The concept of commuter rail service between Anchorage and the MSB has been studied by the MOA, the MSB, and the ARRC (1979, 1988). In 2002, the ARRC sponsored the *South Central Rail Network Commuter Study and Operation Plan*[41], which, in addition to service between the Matanuska-Susitna Valley and Anchorage, explored service between Girdwood and Anchorage. The ridership element of that study was updated in 2009 with the *Wasilla-Anchorage Commuter Rail Concept of Operations*, a technical memorandum prepared for ARRC. The early studies concluded that three requirements would need to be met before commuter service could be initiated: there would need to be 10,000 or more commuters between the Matanuska-Susitna Valley and Anchorage, the track between Wasilla and Anchorage would need to be realigned to achieve competitive train speeds, and a commuter service-specific labor agreement would be needed to achieve labor costs appropriate for short-run train service. All of these requirements have been completely or nearly met. The key remaining element is the straightening of track between Matanuska and Wasilla, which would support competitive running times from Wasilla to Anchorage.

The draft 2016 *Alaska State Rail Plan* updated the 2009 conceptual operating plan for commuter rail. The conceptual plan was based on three stations (Wasilla[42], Matanuska, and Ship Creek; see Figure 34), with three southbound peak period trips in the morning, the reverse during the evening peak period, and one mid-day round trip. The trip from a new Wasilla station near the Wasilla Airport to Ship Creek would have a run time of approximately 54 minutes.[43] The rolling stock for this service is assumed to be self-propelled rail cars. The cars would have level boarding to speed up the boarding/unloading process. With this scenario, it is estimated that total weekday ridership could reach 1,500 by 2020.

To handle this projected ridership, the commuter rail service would require a three-car train-set that costs approximately $9.5 million in 2014 dollars. Three train-sets plus one spare would be needed, bringing the cost for rolling stock to approximately $38 million. While using ARRC equipment would be possible, it would limit commuter rail service as the ARRC is already at capacity in the summer with its current passenger fleet. Using ARRC equipment for a

[41] Wilbur Smith Associates, Harding ESE, Debbie Bloom Consulting, Nancy Whelan Consulting, and Craciun Research Group. 2002. *South Central Rail Network Commuter Study and Operation Plan*

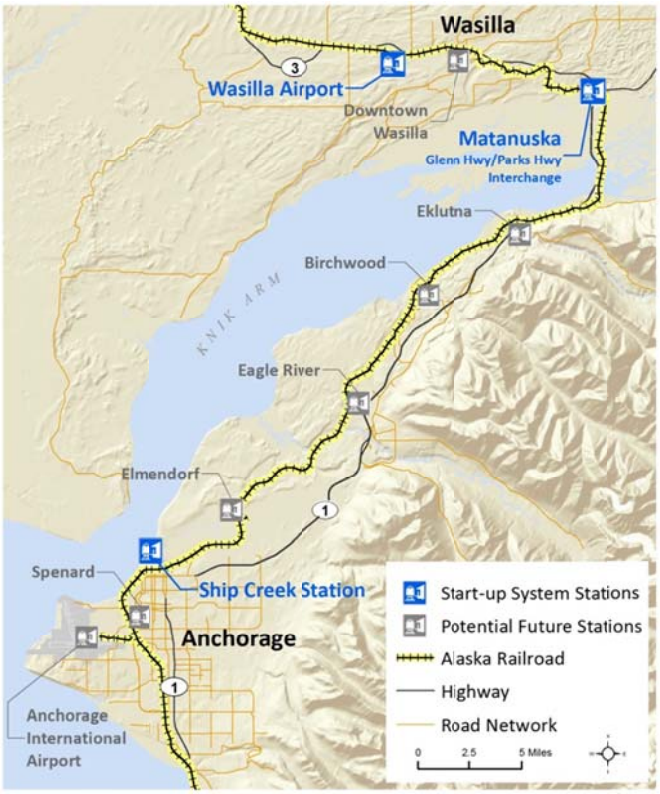
[42] As of August 2016, this station is under development.

[43] This run time assumes an average speed of 53 miles per hour. This speed is comparable to other commuter rail services, and it assumes that the track straightening between Matanuska and Downtown Wasilla has been completed.

demonstration project during the winter months when there is less demand for ARRC equipment may be possible.

The stations are assumed to accommodate approximately 100 to 500 vehicles as well as accommodate transit and a passenger drop-off/pick-up area. Stations would have an enclosed waiting room and electronic ticket vending machines. Each station is anticipated to cost between $1 and $5 million.

Figure 34. Potential Commuter Rail System



It is estimated that the service could cost approximately $6.3 million per year to operate. Annual fare box revenue is estimated at $2.7 million, producing an operating subsidy of approximately $3.6 million per year. Given the projected revenue and operating costs, the fare box recovery for the commuter rail service in 2020 would be 43 percent. This is similar to the fare box recovery ratio achieved by other commuter rail systems. The capital cost to implement the "start-up" phase of commuter rail is estimated at $45.7 million ($5.3 million in station improvements, $38 million for equipment, $2 million for a layover facility, and $0.4 million for testing).

While not required to operate commuter rail, the South Wasilla Rail Line Realignment would benefit the service as it would reduce the run trip by up to 6 minutes and eliminate multiple at-grade crossings.

The next steps to implement commuter rail include:

- Coordination with the MOA and MSB
- Consultation with ARRC to verify run time and needed improvements
- Demonstration of service
- Formation and funding of the operating authority
- Construction of facilities and equipment purchase

Recommendations

Commuter Rail

During development of the *Alaska State Rail Plan*, stakeholders in the MSB indicated that they would like to see commuter rail implemented. Currently, there is no funding to implement commuter rail, so it is not a fiscally-constrained element of the LRTP. If implemented, funding would likely come from a variety of sources, including the MSB, MOA, DOT&PF, and FTA. The MSB, MOA, DOT&PF and ARRC should continue to work together to pursue commuter rail in South-central Alaska. Specific issues to be addressed include identifying the appropriate managing authority and operator for this service, addressing the transportation connection between the Ship Creek depot and the commuter's final destination, identifying potential funding sources, and pursuing the development of a pilot project.

The MSB LRTP also recommends the ARRC continue to implement their planned improvements within the MSB to improve efficiency, promote safety, and facilitate economic development.

Relocate Wasilla Train Station

The Wasilla Main Street project is being developed to put in a couplet to reduce north-south congestion through Wasilla. The proposed design for that project requires the relocation of the existing passenger boarding facility in Wasilla. A new facility is being planned near the old Kenai Supply Building. The City of Wasilla has purchased property for a new facility.

This facility will be developed as a "conditional stop" rather than a "station" because the train only stops when there is a confirmed passenger to get on or off at that location.

Completion of the Port MacKenzie Rail Extension

The Port MacKenzie Rail Extension project is approximately 65 percent complete. When funding is available, the MSB should pursue the completion of this project. The project will shorten the trip between tidewater and Interior Alaska, which may reduce the cost of exporting natural resources. The project will also support activity at Port MacKenzie, which includes 14 square miles of staging ground, a 100-rail-car-loop for the efficient handing of bulk materials, and a port that can accommodate large ocean-going vessels. This rail connection may also reduce rail congestion on the mainline between the MSB and Anchorage.

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Chapter 9
Marine and Waterborne Transportation

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Chapter 9 Marine and Waterborne Transportation

Marine and waterborne transportation remains an important part of the MSB's transportation system. The MSB has consistently given a high priority to the development of a deep water port and related industrial and infrastructure development in the Point MacKenzie area. Port MacKenzie is planned to function as the primary regional facility for the export of resources and for the import of supplies and equipment.

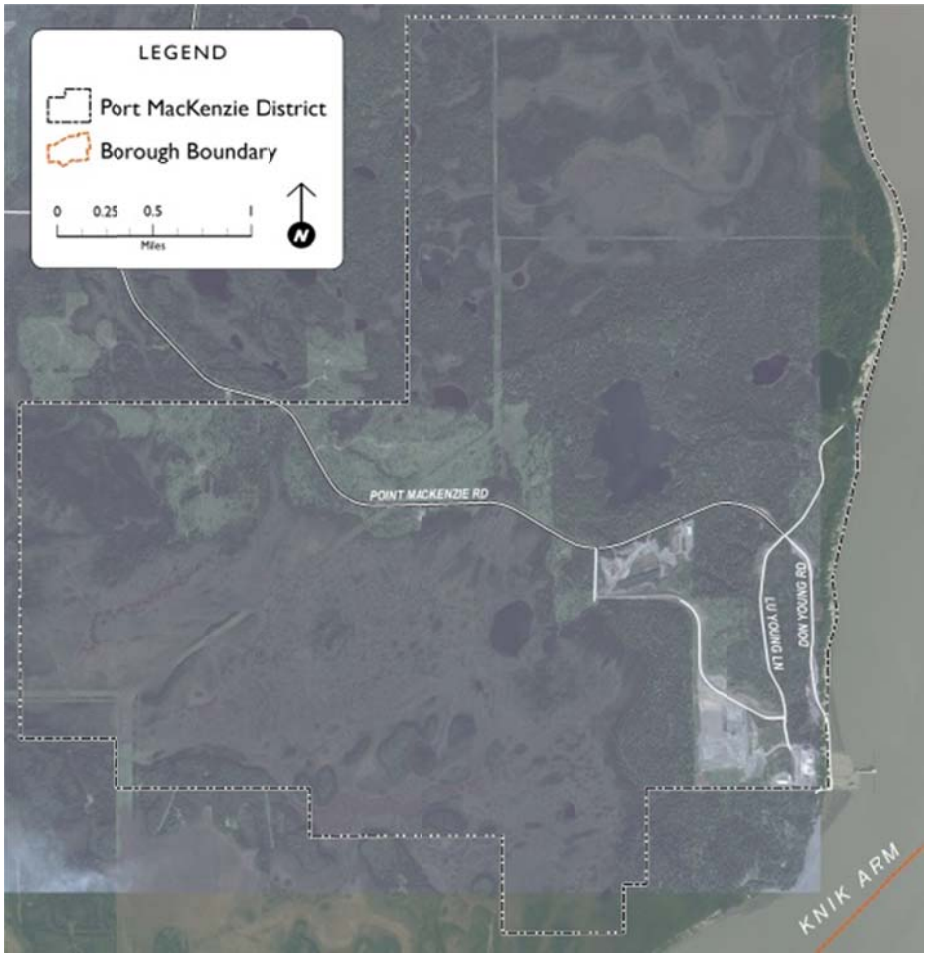
Marine and waterborne transportation provides an important type of access for some of the non-road accessible areas of the MSB. The river system provides access to private residential and recreational properties as well as commercial and public recreational properties in the more remote areas of the MSB. Area lakes also provide access to some properties not otherwise accessible. A good example of this is Big Lake. In the Big Lake area, there are homes, businesses, and recreational properties that are accessible only by water.

Existing Conditions

Port MacKenzie

Operating since 2001, Port MacKenzie (Figure 35) has 9,033 acres (14 square miles) within the port district dedicated to commercial and industrial development. The docks are designed to efficiently export natural resources, but the port can accommodate many other types of cargo.

Figure 35. Port MacKenzie



Infrastructure at Port MacKenzie includes:

- **Barge Dock** - a 14.7-acre gravel surface at -20-feet mean lower low water (MLLW) with a 500-foot sheet pile face for docking. The load capacity of the gravel pad is 1,000 pounds per square foot.
- **Deep-Draft Dock** - The 1,200-foot-deep-draft dock can accommodate Panama and Cape class vessels. The dock is equipped with a 5-foot-wide conveyor system capable of loading bulk commodities at 2,000 tons per hour.
- **Terminal Building** - The 7,000 square foot terminal building is located on the southeast corner of the barge dock. It has offices available for lease, bathrooms with showers, and a kitchenette. Utilities include fuel oil heat, electricity, water, sewer, telephone, and DSL internet service.

Rivers and Lakes

Currently, public and private boat launches provide the necessary facilities for river and lake waterborne transportation for boats and floatplanes in the summer. It is important that these facilities continue to be available to users. Future availability of existing facilities should not be an issue, but there are some concerns associated with the operation and maintenance of these facilities. The first issue is the condition of the facilities as it relates to safety. Facilities need to be maintained to ensure the public's safety. Another concern is litter cleanup at the facilities as well as along the waterways being used for transportation. Funding sources are available for the development of boat launch facilities, but those same funding sources are generally not available for the operation and maintenance of the facilities. It is important that maintenance and operating funds be identified and provided for public boat launch facilities.

Recommendations

The recommended improvements to the marine transportation system are described below.

Port Development

Continued development of Port MacKenzie is recommended. To the extent that Federal or State grants can be obtained to further the improvement of the port area infrastructure, upgrades and improvements should be made pursuant to the Port MacKenzie Master Plan. Some of the major needs of the port include:

- New highway connections to the Parks Highway
- Completed rail connection to the ARRC
- Natural gas supply
- Second trestle connecting the barge dock to the deep draft dock

Ongoing Operation and Maintenance

It is recommended that the need for continued operation and maintenance of existing public boat launch facilities and public access points to lakes and rivers be recognized. The clean-up, maintenance, and improvement of existing public access points and boat launch facilities should be a priority. Improvements should include appropriate signage indicating allowed uses; facilities such as fire pits, toilets, and litter containers if camping or picnicking is allowed; and fencing when necessary to delineate the boundaries of public property. Also, new facilities should not be built without a provision for continued maintenance of the facilities.

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Chapter 10
Environmental Analysis

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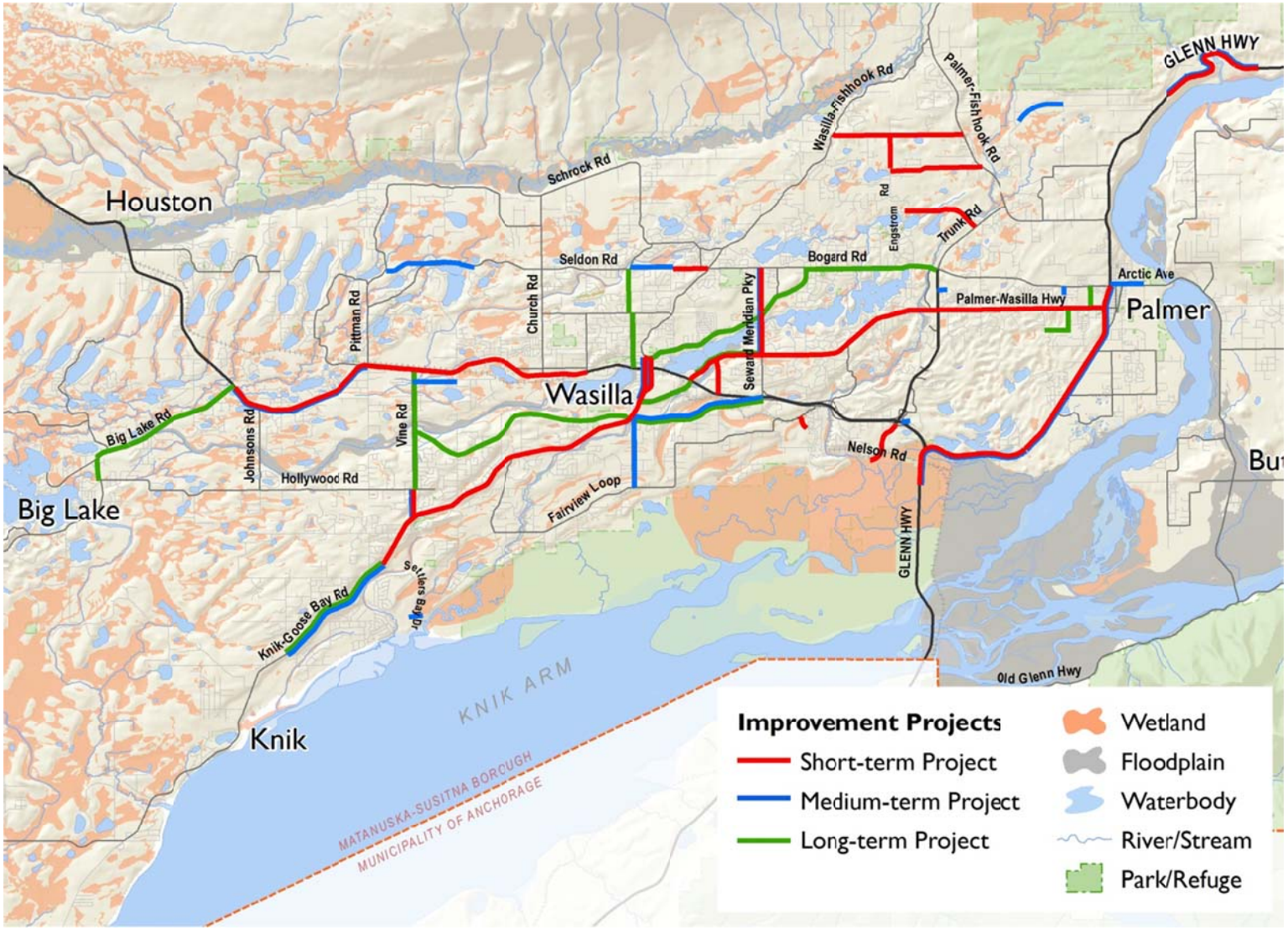
Chapter 10 Environmental Analysis

It is important for the LRTP to consider how well the alternatives fit with the natural and built environment. Figure 36. shows the location of recommended roadway projects and how they relate to environmentally sensitive areas in the study area.

As the MSB moves towards being designated an MPO it is noted that federal regulations require MPOs to consider environmental mitigation activities in developing transportation plans. The LRTP examines system level issues and may alert agencies to issues that may need to be considered during the project development process. This high-level environmental review may inform the National Environmental Policy Act process but does not replace it. Projects identified in this LRTP will require more detailed environmental review prior to design and construction.

Figure 36. Environmentally Sensitive Areas



Environmental Screening/Considerations

Environmental resources that could potentially be affected by transportation projects in the 2035 LRTP are discussed in this section. Projects included in this LRTP will require additional project development before they can be implemented.

Archaeological and Historic Resources

Archaeological and historic resources are regulated under Section 106 of the National Historic Preservation Act and may require consultation with DOT&PF and the Alaska State Historic Preservation Officer (SHPO). At the start of any project development process, the lead agency should coordinate with the SHPO regarding archaeological and historic resources to determine what coordination and research needs to be undertaken.

Wetlands and Waters of the U.S.

Wetlands and waters of the U.S. will need to be considered as projects move from the planning stage to design and construction. Wetland delineations are recommended in the initial stages of a transportation improvement project to confirm the boundaries of wetlands and Waters of the U.S. within the project area and to coordinate with U.S. Army Corps of Engineers to determine jurisdiction. Relevant wetland-related GIS datasets available for the MSB include:

1. National Wetlands Inventory mapping prepared by the U.S. Fish and Wildlife Service.
2. Mat-Su Borough Wetland Mapping prepared by Mike Gracz (Gracz 2009).
3. Soil survey mapping from Soil Survey of the Matanuska Valley, Alaska, produced by the Natural Resource Conservation Service (NRCS 1995).
4. Stream mapping from the USGS National Hydrology Dataset.

Floodplains

Development in floodplains is regulated by the Federal Emergency Management Agency (FEMA), the Alaska Department of Natural Resources, and the MSB. FEMA regulations prohibit encroachment in regulated floodways unless it is accompanied by a no-rise analysis that shows the project will not cause an increase in the 100-year flood level.

Threatened and Endangered Species

Fish and wildlife species listed under the Federal Endangered Species Act will need to be considered for each project. The State of Alaska has its own list of endangered species, species of special concern, and fish stocks of concern. Consultation with the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game should be undertaken to determine which species have the potential to occur within each project area and for the project to affect each species present.

Section 4(f) and Section 6(f) Resources

The Federal Department of Transportation Act of 1966 included a provision, Section 4(f), which is designed to protect publically owned parks, recreation areas, wildlife and waterfowl refuges, or public and private historical sites. U.S. Department of Transportation agencies, including FHWA, cannot approve any project that requires the use of this land unless there is no feasible and prudent alternative to the use of the land and all possible planning to minimize harm to the resource has been done or FHWA determines that the use of the property would have a *de minimis* impact. *De minimis* is a determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for projection under Section 4(f), or a Section 106 finding of no adverse effect or no historic properties affected for a historic property (i.e., an archaeological, historic, or cultural resource determined eligible for listing on the National Register of Historic Places).

Section 6(f), created as part of the Land and Water Conservation Act, protects state and local projects funding by the Land and Water Conservation Fund. These lands cannot be converted to a non-park/recreation use without the approval of the National Park Service. Conversion of these lands is allowed if it is determined that there are no practicable alternatives to the conversion and that there will be provision for a replacement property. Mitigation for Section 6(f) lands impacted by a project need to include replacement with land of at least the same market value and reasonable equivalent usefulness and location relative to the impacted land.

Environmental Justice

Environmental Justice is intended to ensure that Federal actions treat all populations equally. It was introduced into Federal actions and funding by Executive Order 12898 of 1994. This executive order is founded by Title VI of the Civil Rights Act, which prohibits discrimination on the basis of race, color, or national origin. Environmental Justice requires Federal agencies to identify and address the effects of its programs, policies, and activities on "minority populations and low-income populations."

Minority Populations

FHWA defines a "minority population" as:

- Black: a person having origins in any of the black racial groups of Africa
- Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or origin regardless of race
- Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent

- American Indian and Alaska 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
- Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Data from the ACS was used to determine the number and percentage of minority population in the MSB. Figure 37 shows a summary of the recommended roadway projects in relation to the location of minority populations.

Low Income Populations

FHWA defines a "low income population" as any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed FHWA program, policy, or activity. FHWA defines "low income" as a person whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. The best approximation for the number of people below the DHHS poverty guidelines in a certain area is the number of persons below the Census Bureau poverty threshold in that area. The ACS, a Census Bureau product, was used to determine the number of households in poverty (low-income populations) in the MSB. Figure 38 shows the location of projects in relation to these populations.

Figure 37. Minority Populations

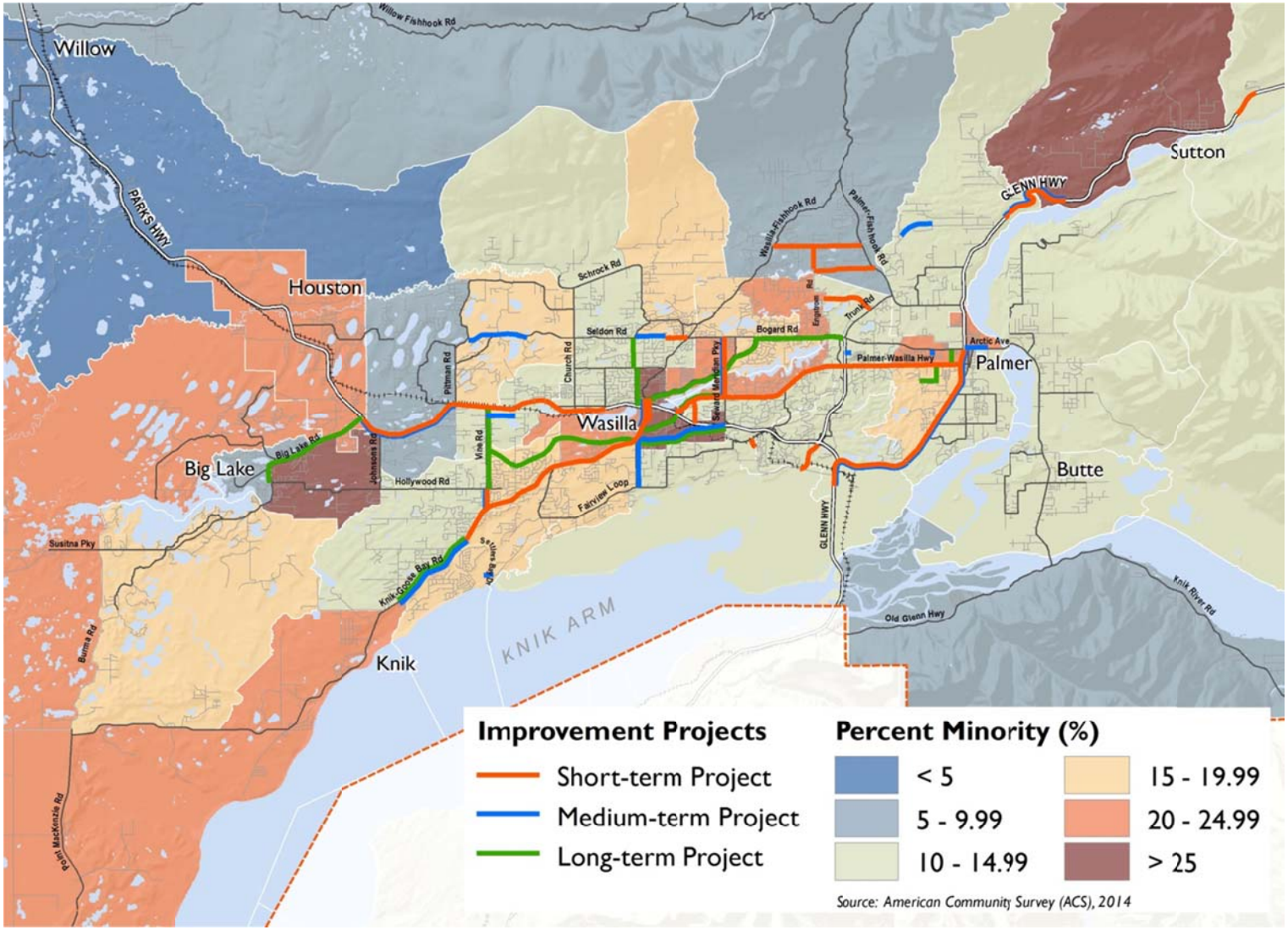
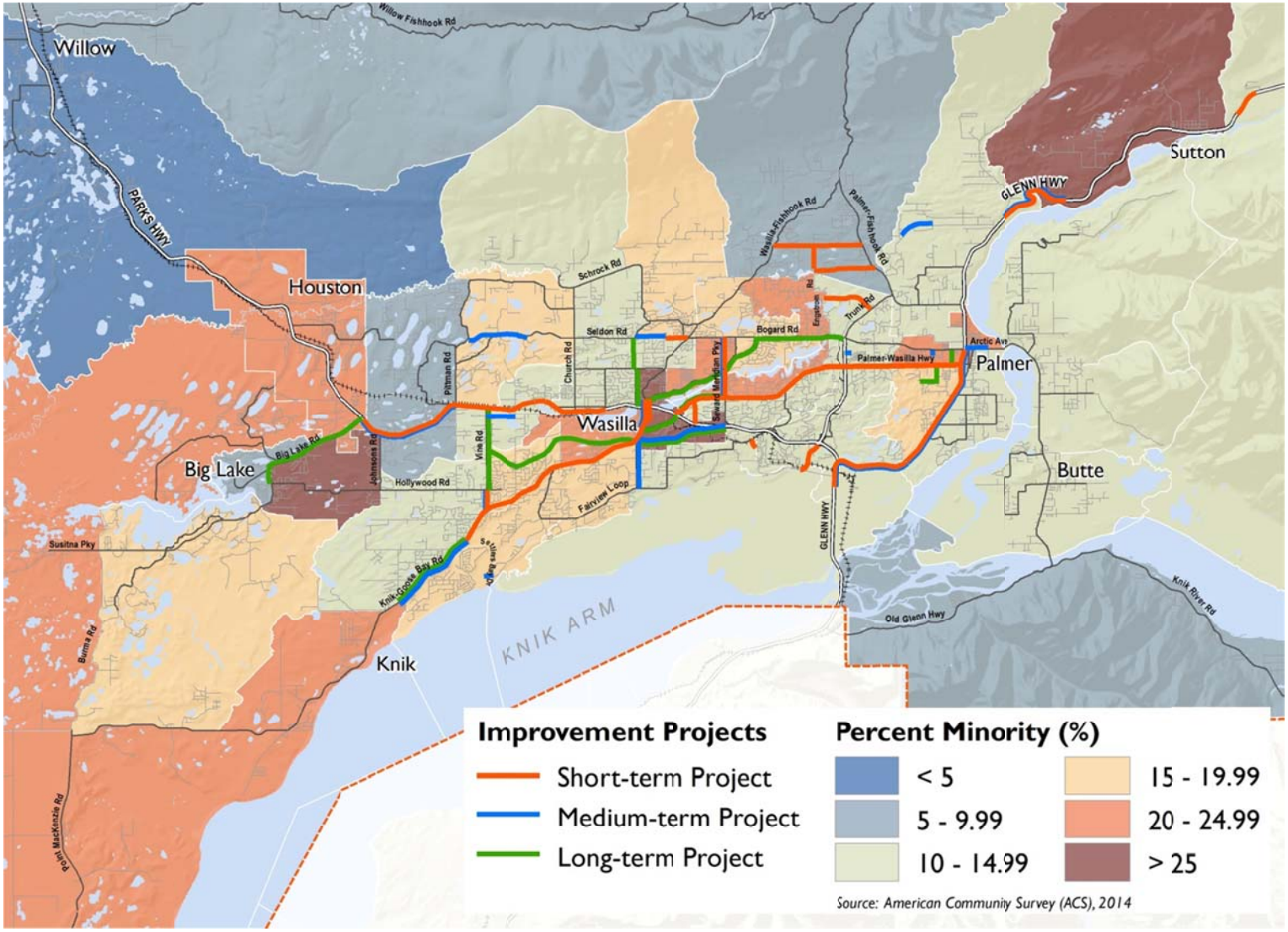


Figure 38. Low Income Populations



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Attachment A

Memo

Date: Friday, June 27, 2014

Project: **MSB Long Range Transportation Plan**

To: **Mat-Su Borough LRTP Technical Advisory Committee**

From: **Murph O'Brien, Project Manager** *MMO*

Subject: **Travel Demand Model Calibration Results**

Background

The purpose of this memorandum is to document the travel demand model calibration results. The purpose of the calibration process is to ensure that the model replicates traffic volumes on the network of main roads in the Mat-Su Borough.

Model Update

Based on the agreement with the project Technical Advisory Committee, the HDR study team performed a calibration review of the Parks Highway Alternative Corridor (PHAC) model to ensure that the calibration results for major roads, in addition to the Parks Highway, were within acceptable limits. The modeled area includes the most densely populated part of the Borough, extending from Willow and Big Lake in the west to Sutton and Butte in the east, Fishhook in the north and to the Parks-Glenn junction and Point MacKenzie in the south. HDR used the existing roadway network data to evaluate overall model performance by comparing model volume estimates to Matanuska-Susitna Borough (MSB) and Alaska Department of Transportation and Public Facilities (DOT&PF) traffic counts. The validation/calibration criteria were developed based on the Federal Highway Administration's Travel Demand Validation and Reasonableness Checking Manual.

Transportation Modeling Process

The transportation demand model is a representation of the transportation facilities within the MSB modeled area and the travel patterns on these facilities. The model contains inventories of the existing roadway facilities, and of housing units and employment, organized by traffic analysis zones (TAZs).

During the calibration process, model-generated traffic volumes are compared to current traffic counts. Unlike modeling of future traffic volumes, for calibration the model uses current household and employment data to develop the estimates of current traffic volumes. Model parameters are adjusted to achieve the most accurate area-wide replication of current traffic volumes. When the model-produced volumes match traffic counts within an acceptable range of error, the model can then be used to test future year alternative roadway improvements.

Roadway Network

Attributes of road segments in the network database were refined with input from MSB, DOT&PF and a review of existing conditions. Road network attributes include number of travel lanes, travel direction, name, functional classification, speed (mph), presence of median, area type and capacity by lane.

Trip Generation and Distribution

Socioeconomic data, primarily households and employment by travel analysis zone (TAZ) for the MSB area, was updated for the PHAC project. Future employment data were disaggregated into 13 employment categories, and future location of employment was developed for each. Location of future households was based on the results of a charrette convened for that specific purpose, along with consideration of land suitability and related factors. The employment and household distributions were reviewed and approved by MSB Planning and Public Works staff. Subsequent model trip generation by trip purpose was developed and is presented in Table 1.

Table 1: 2010 MSB Trips by Purposes

Purpose	Trips	% of All Trips
Home based Work	44,500	17%
Home based Shop	20,400	8%
Home based School	26,100	10%
Home based Other	84,500	33%
Non Home based Work	20,200	8%
Non Home based non Work	63,200	24%
Total Trips by All Purposes	**258,900**	**100%**

Source: HDR Engineering, Inc., May 2014

Traffic Assignment

The purpose of traffic assignment is to assign vehicle trips to specific paths, or routes, in the transportation network. Trip assignment is a function of the shortest travel time along paths between zones, and the level of congestion on the links within those paths. Vehicle trips for the study area were assigned to the transportation network using the TransCAD User Equilibrium Assignment Algorithm which uses an iterative process to achieve a convergent solution, in which no travelers can improve their travel times by shifting routes. Figure 1 shows the 2010 traffic assignment within the MSB area. Level of Service (LOS) based on volume-capacity ratio was calculated and is also presented.

Model Calibration/Validation

The purpose of validation and reasonableness checking is to confirm the ability of the model to predict future behavior by comparing its predictions to existing observations. The FHWA Travel Model Validation and Reasonableness Checking Manual, Second Edition (2010) and the Ohio Department of Transportation's Ohio Certified Traffic Manual (2007) are the two main references used in this process.

Validation involves a review of each model component and comparing its prediction to observed behavior. This section provides a comparison of model-predicted traffic volumes with observed traffic counts.

Figure 1 shows the 2010 existing model volumes within the MSB area. Level of Service (LOS) was calculated based on the volume-capacity ratio to identify roadway segments operating at unacceptable LOS E or F. LOS analysis indicates that the roadway network within the MSB modeled area is operating at acceptable LOS C or better (V/C <0.71), for the most part. Many segments along Palmer-Wasilla Highway north of Parks Highway as well as Parks Highway between Seward Meridian Road and Lucille Street operate at LOS D (V/C 0.71 to 0.89). A few segments along Knik-Goose Bay Road, south of the Palmer-Wasilla Highway operate at unacceptable LOS E (V/C 0.89 to 1.0) or F (V/C >1). Road users may perceive different peak hour directional congestion, not presented in this exhibit.

Traffic Counts

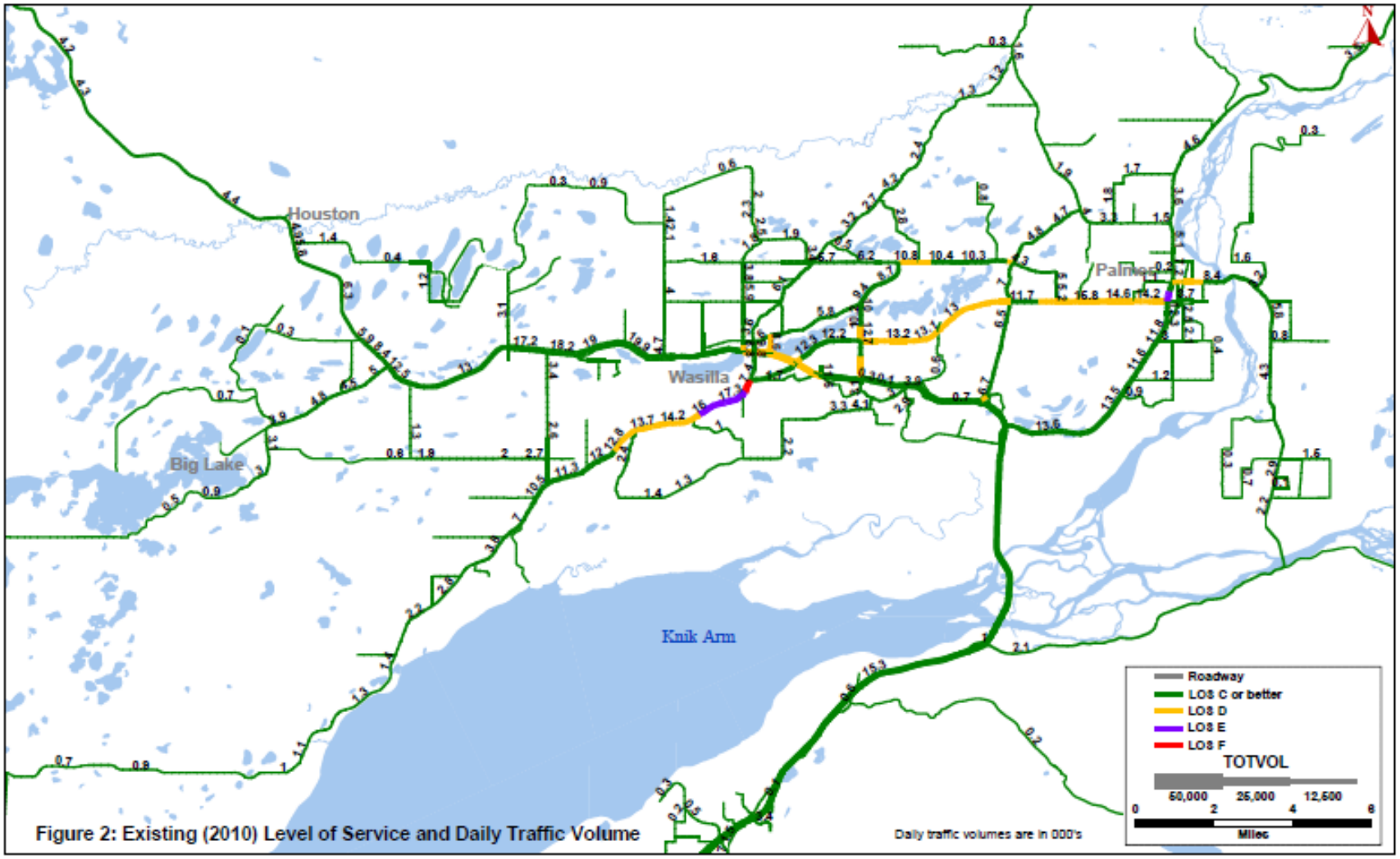
Traffic counts were gathered from the Alaska DOT&PF website[1]. There were 205 locations identified to have available traffic counts data against which the model results were compared for validation.

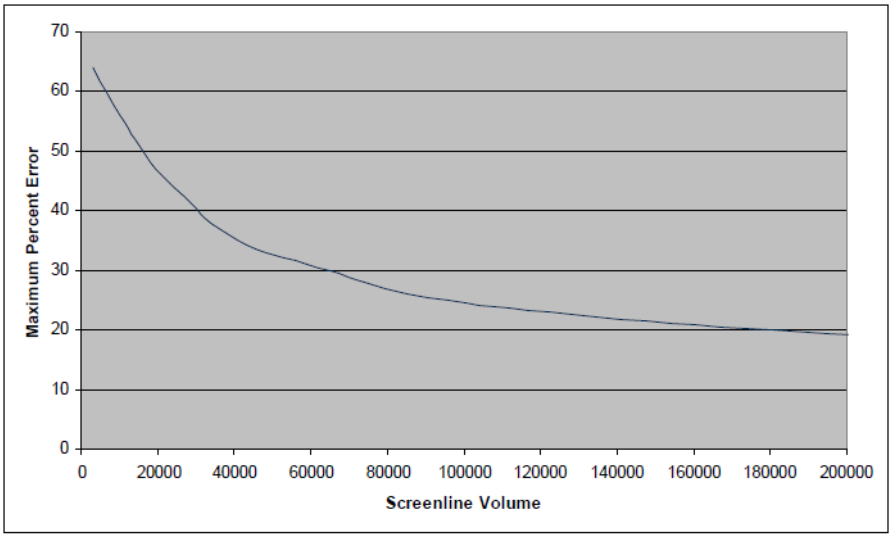
Cutline Analysis

Cutlines provide a comparison of modeled volumes to observed counts along a corridor containing multiple facilities. Figure 3 introduces FHWA validation guidelines for cutlines. The figure shows that maximum percent error decreases as screenline or cutline volume increases.

[1] www.dot.state.ak.us/stwdplng/mapping/adt.shtml

Figure 1: Existing Level of Service and Daily Traffic Volume in Thousands of Vehicles per Day





Source: Calibration and Adjustment of System Planning Models, FHWA, December 1990.

Figure 2: Validation Guidelines for Cutlines

The results of the cutline analysis are summarized in Table 2 showing a comparison of model volume estimates and observed traffic counts for facilities crossing each cutline. The table shows that for all cutlines the difference between the estimated and observed traffic is well within the guidelines shown in Figure 2.

Table 2: Cutline Analysis Results

#	Traffic Count	Model Flow	%-Difference	Max Desirable Deviation	Within Target	RMSE	Volume/ Capacity
1	15,131	14,346	5%	50%	Yes	12%	0.2
2	32,297	31,981	1%	40%	Yes	6%	0.5
3	57,380	52,707	8%	32%	Yes	18%	0.4
4	46,127	53,015	15%	35%	Yes	18%	0.6
5	28,349	31,352	11%	42%	Yes	16%	0.4
6	13,509	13,497	0%	55%	Yes	27%	0.2
7	28,400	31,551	11%	41%	Yes	16%	0.3
8	19,960	18,525	7%	46%	Yes	10%	0.6
9	34,373	36,172	5%	38%	Yes	12%	0.3
Overall	**275,526**	**283,146**	**3%**	**17%**	**Yes**	**17%**	**0.4**

RMSE stands for Percent Root Mean Squared Error (see page 7, below)
Source: HDR Engineering, Inc., May 2014

Figure 3 shows the cutline locations and their respective volume-capacity ratio. The traffic is operating at acceptable LOS C or better at each of the cutline locations.

Figure 3: 2010 Cutline Analysis Results

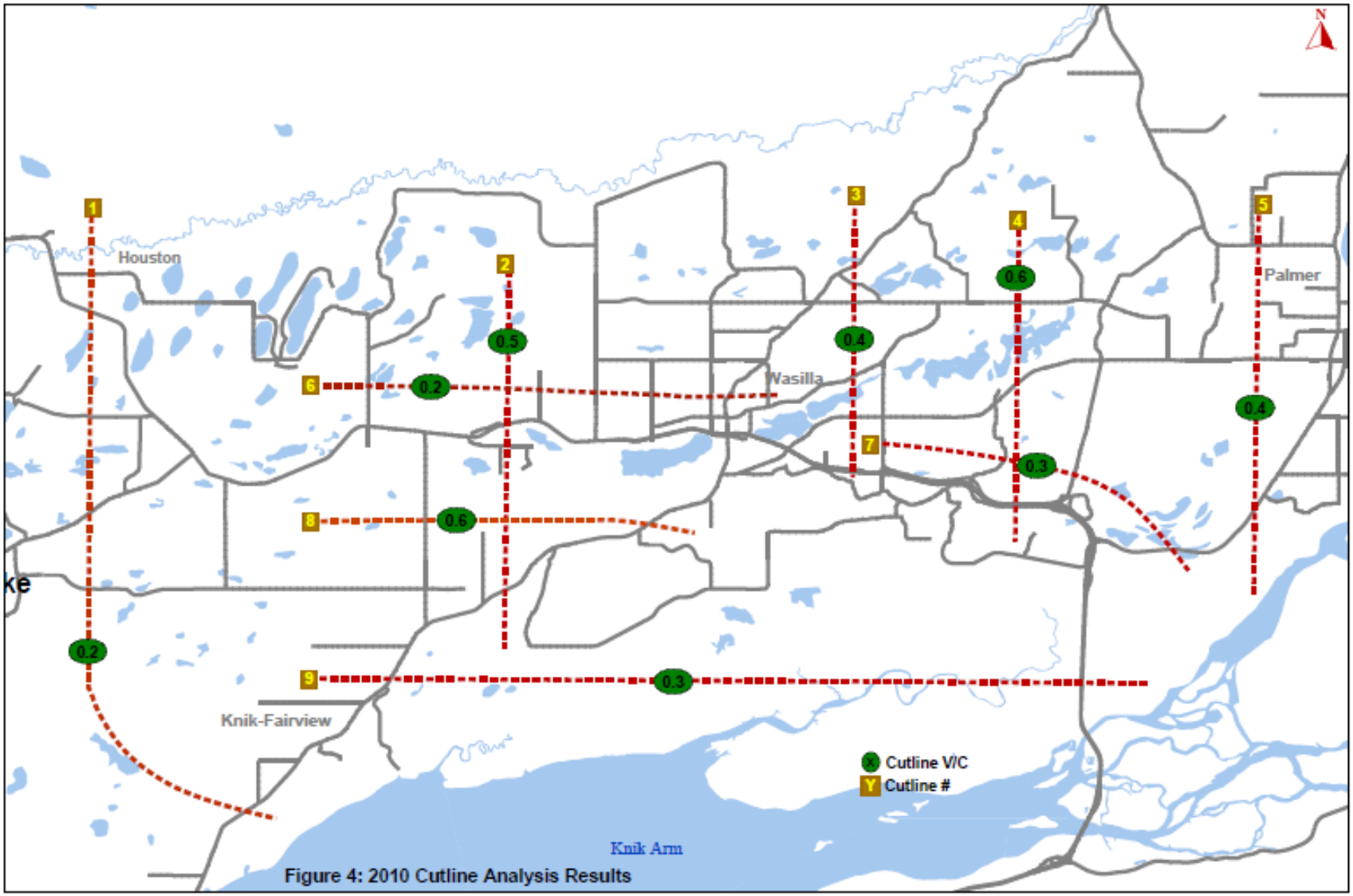


Figure 4: 2010 Cutline Analysis Results

Assignment Scatterplots

Pearson's product-moment correlation coefficient (R) is a standard statistical measure that reflects how linear the relationship is between two data sets. Scatterplots of modeled traffic volumes versus observed traffic volumes can be useful tool in model validation. While there are no hard and fast guidelines for R-Squared results, the closer the values are to 1 the more linear the relationship between the two data sets. Figure 4 shows a scatterplot comparing model estimated daily traffic volumes compared to observed traffic counts. Model results show an R-Squared value of 0.96 indicating a high degree of correspondence between model volume estimates and observed traffic volumes.

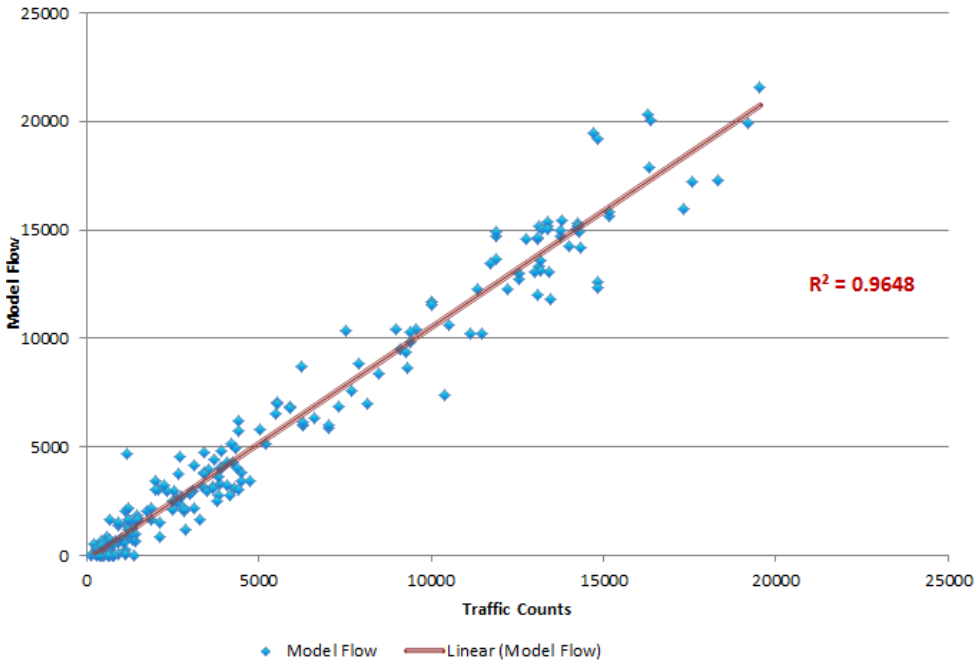


Figure 4: Daily Traffic Volume Scatterplot

Percent Root Mean Squared Error

Percent Root Mean Squared Error (RMSE) is a measure of the accuracy of the traffic assignment that shows the average error between the observed and modeled traffic volumes on links with traffic counts. Percent RMSE is summarized by link volume group. The Ohio Certified Traffic Manual identifies acceptable ranges of percent RMSE by directional link volume group.

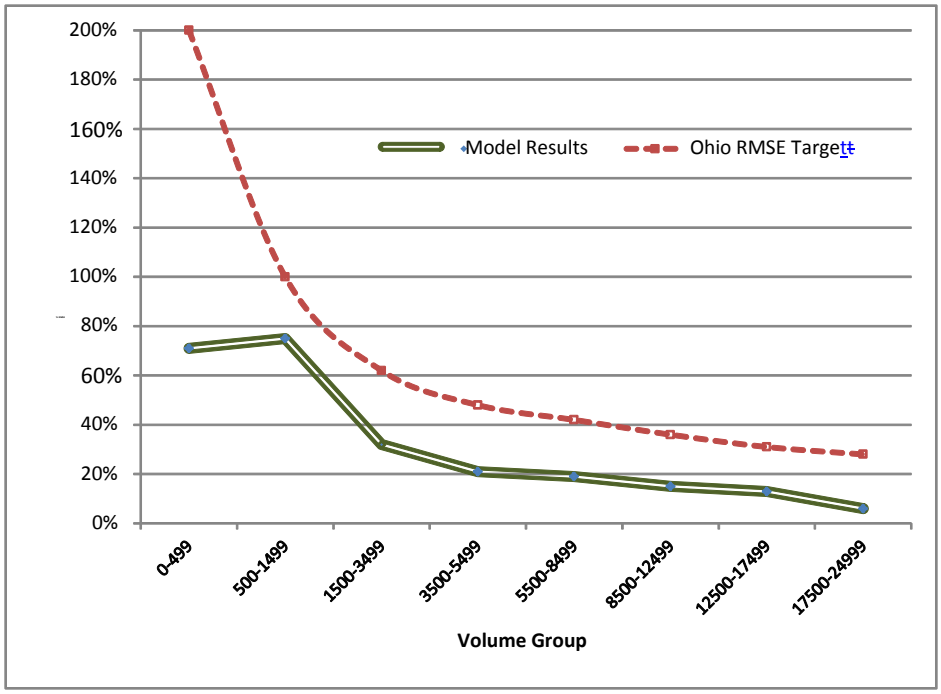


Figure 5: Percent RMSE by Volume Group

The Ohio percent RMSE targets by volume group are shown graphically in Figure 5. The figure shows that modeled traffic volumes are within acceptable ranges of the observed traffic counts. The overall percent RMSE for daily traffic volume is 21.

Reasonableness by Functional Class

The deviation between the traffic counts and model volumes by roadway functional class was measured against the Ohio Certified Traffic Manual guidelines. Table 3 shows the comparison of model results and traffic counts. The table shows that modeled traffic volumes are within acceptable ranges of the observed traffic counts by various roadway functional classifications.

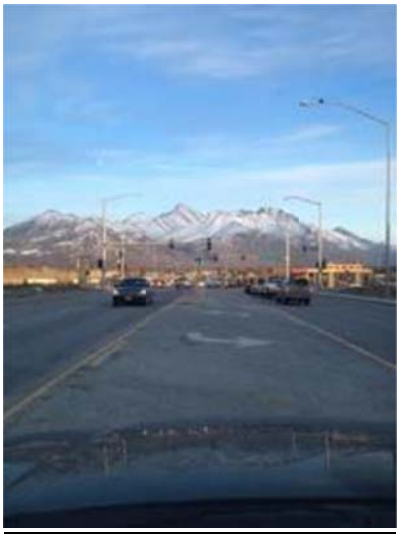
Table 3: Percent Assignment Error by Functional Class

Functional Classification	Traffic Counts	Model Flow	%-Difference	Suggested Range by Ohio Manual
Freeways/Expressways	456,413	481,132	5%	+7%
Principal Arterials	165,567	163,370	1%	+10%
Minor Arterials	190,738	193,731	2%	+10%
Collectors	172,759	164,305	5%	+15%
All Links	**985,477**	**1,002,538**	**2%**	**+5%***

**Ohio Manual does not have specific criteria under this category. Florida DOT Guideline has been used in stead.*
Source: HDR Engineering, Inc., May 2014

Conclusions

The model validation and reasonableness checking measures show that the model is satisfactorily predicting observed traffic volumes, and that the model is suitable for use in future roadway improvement needs analyses for the MSB LRTP.



Matanuska Susitna Borough

Long Range Transportation Plan

Public Involvement Summary

Appendix B

ADOPTED

DECEMBER 2017

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Contents

Abbreviations

ARRC	Alaska Railroad Corporation
ATV	All-Terrain Vehicle
DOT&PF	Alaska Department of Transportation and Public Facilities
LRTP	Long Range Transportation Plan
MOA	Municipality of Anchorage
MSB	Matanuska-Susitna Borough
OLOH	Online Open House
RSA	Road Service Area
TDM	Transportation Demand Modeling
TSM	Transportation System Management

Introduction

Between June 2014 and June 2017, the Matanuska-Susitna Borough (MSB) 2035 Long Range Transportation Plan (LRTP) Update project team conducted a variety of public involvement activities that informed participants about transportation challenges, proposed solutions, and the trade-offs of potential short- and long-term projects and costs. Information provided to and received from the community helped identify problems and opportunities, informed stakeholders of technical solutions, and helped the LRTP respond to community needs.

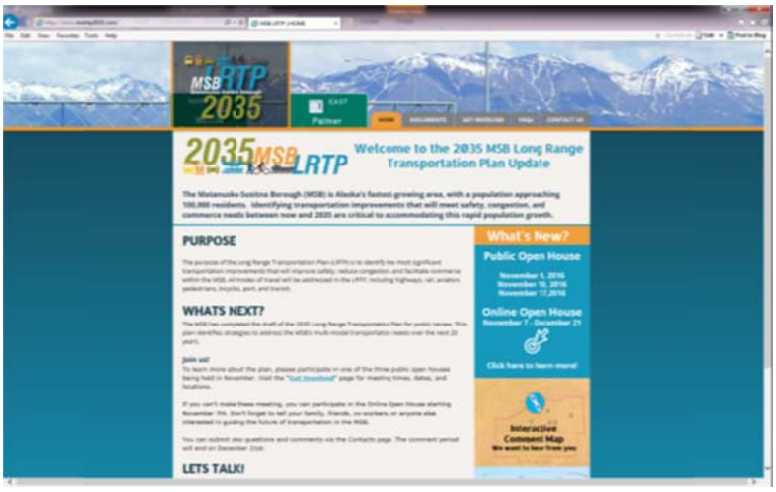
Stakeholders in the planning process included MSB residents, MSB officials, community councils, businesses, road service areas, the aviation community, local governments and advisory boards, transit providers, the Alaska Department of Transportation and Public Facilities (DOT&PF), the Alaska Railroad Corporation (ARRC), the transportation industry, Regional and Village Native Corporations, and other concerned individuals and organizations. The MSB's community participation goals for the LRTP update process were to:

- Communicate the project's goals and objectives;
- Involve a wide spectrum of stakeholders;
- Generate public interest in the LRTP;
- Facilitate communication and understanding among all project participants; and
- Provide information and solicit feedback at key points in the process to inform the decision-making process.

The following sections summarize the community and stakeholder outreach efforts during the MSB 2035 LRTP Update.

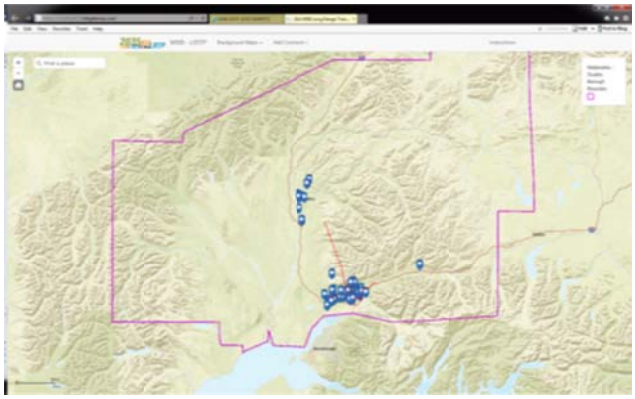
Website

A project website provided project updates, archived meeting materials, and allowed the public to contact the project team directly. All work products, including the draft and final MSB 2035 LRTP Updates, were posted on the project website: www.msblrtp2035.com.



Interactive Comment Map

An interactive comment map was included on the website's home page. The map provided stakeholders with an opportunity to click on the map to draw lines or place points and add site-specific comments. The purpose of the map option was to identify the most significant transportation improvements that will improve safety, reduce congestion, and facilitate commerce within the MSB. All modes of travel were addressed.



Public Meetings/Online Open Houses

The 2035 LRTP Update used traditional public meetings and online open houses (OLOHs) to share information about the 2035 LRTP. The public meetings were organized and held at community centers or other appropriate venues to accommodate parties interested in or affected by the update. These meetings, typically 2 hours long, allowed for information sharing in addition to comment submittal and one-on-one interaction with project team members.

An OLOH is a web-based tool that takes an in-person public meeting and transfers it to an online forum that is accessible 24 hours a day to any stakeholder with internet access. An OLOH has the same general format as a public open house, with the opportunity to be "live" during the entire public comment period associated with the meetings. Benefits of an OLOH include an increased diversity of the project audience and the complete removal of time and travel barriers—enabling potential participants to attend a meeting virtually where, when, and for however long or often they choose. The OLOH allows users to view videos and PowerPoint presentations, and to make comments that can be added to the public record. The materials for each MSB OLOH corresponded to a public meetings and workshops.

All public meetings/OLOHs were advertised in the Mat-Su Valley Frontiersman; a radio public service announcement; announcements on the MSB website, Facebook page, and community calendar; and an email sent to the project mailing list.

All meetings featured a series of posters with information and graphics providing key points about the MSB LRTP. Participants were invited to sign in, then to peruse the posters and ask questions of the members of the planning team present. Attendees were also invited to submit comments either using the comment forms provided, or online through the website or OLOHs that ran concurrently with the in-person public meetings.

Public Meetings/Online Open Houses - July 2014

The first series of public meetings/OLOHs was held in July 2014 for the purpose of introducing the project to the community, seeking input on transportation needs, discussing potential solutions, and soliciting public input.

Three public meetings were held on the following dates:

- July 16, 2014 – Sutton Public Library, Sutton
- July 17, 2014 – Faith Bible Fellowship Church, Big Lake
- July 24, 2014 – Fire Station 6-1, Wasilla

A total of 38 individuals signed the public meeting attendance lists. Participants expressed support for public transit services, bike paths, land use changes, and specific road projects.

The OLOH was available for public review from July 15 to August 11, 2014.
During this period, there were more than 331 visits to the OLOH. According to the Internet Protocol addresses that visited the site, there were 125 visitors from Wasilla, 32 from Palmer, and 74 from Anchorage. Other visits came from a variety of locations, most in the Lower 48. These visits represent a total of 249 individual users. Fifty-two comments were submitted through the OLOH during the comment period.

Between the comments submitted at public meetings and web comments received through the OLOH, a total of 93 comments were received for the MSB LRTP. Highlights/themes from the public meeting comments include:

- Fifty individuals submitted comments in support of public transit. Support specifically for the Valley Mover was mentioned by 34 commenters, and 16 individuals supported a commuter rail service.
- In addition to comments generally supporting public transit, there were specific comments about additional service days/stop locations for the existing transit services.
- About 14 commenters were in favor of bike paths, many advocating for their safety, convenience, and contribution to an enhanced quality of life.
- There were six comments in favor of a Wasilla bypass.
- Five commenters mentioned roundabouts as a more efficient alternative to traffic lights.
- Several commenters stated their hopes that transportation planning will consider access to residential areas, with some comments focused specifically on access to low-income housing.
- Two commenters were concerned about extending Nelson Road to Fairview Loop.

- One commenter asked why the Port to Houston route was not included in the modeled maps.
- One commenter felt that the completion of the Seldon Bogard corridor from Pittman Road to the Glenn Highway should greatly decrease the traffic on the Palmer-Wasilla Highway.
- One commenter was concerned about the increase in high-speed traffic on the narrow Springer System and the lack of pedestrian and bike trails.

Participating project team members also received the following informal comments at community open house events:

- Transit for homeless youth is a growing need, especially in outlying areas of the MSB where more affordable housing is available.
- The Parks Highway Alternate Corridor Project's preferred route is too close to residential development.
- The Moose Creek Bridge on the Glenn Highway is unsafe and needs to be fixed.
- A 45 mile per hour (mph) speed limit through Sutton is acceptable, but a 65 mph speed limit is not.

Online Open House – April 2016

This OLOH was held from April 29 to June 15, 2016.

The purpose of the OLOH was to obtain the public's thoughts on how to improve transportation in the MSB through a variety of transportation options, from now through 2035. More than 160 people visited the OLOH[1]. There were 60 visitors from Wasilla, 7 from Palmer, and 23 from Anchorage with the remaining from other parts of the MSB, Alaska and the Lower 48. Information on the site included background on the LRTP, identified a base case assumption of what conditions might look like in 2035, and presented alternative transportation modes.

The MSB received approximately 80 map-based comments, as well as 5 emailed and mailed comments for the OLOH and companion "Tough Choices" survey (see below). The following is a summary of those comments.

Bike/Pedestrian Facilities

- Include bike paths along all major roadways (including Bogard Road, Comsat Road, Fishhook Road to Hatcher Pass, Glenn Highway to Edgerton Parks Road).

[1] United States visitors only; this does not include individuals from outside the United States.

- Plans and committees have identified the need for separated pedestrian/bike facilities (Sutton to Palmer).
- Add more bike trail connections (specific locations).
- Increase shoulder size to improve bike/pedestrian safety (Edgerton Parks Road).
- Work with DOT&PF to obtain bike path/pedestrian walkways (Talkeetna Spur Road at Main Street).
- Use colored bike lanes to distinguish between parking and pathway areas.
- Address opposition to bike lanes (Comsat Road—private property impacts).
- Fix bike/pedestrian conflicts with traffic turning into 3 Bears on Knik-Goose Bay Road.
- Widen shoulders on narrow roads to reduce bike conflicts.

Congestion

- Find ways to mitigate morning and evening congestion on the Glenn Highway.

Connectivity

- Arterials
    - Extend specific roadways (Trunk Road, Seldon Road, Seldon Road Phase II, Shoreline Drive, Shennum Drive).
    - Increase number of arterials to decrease congestion/as an alternative to the Parks Highway.
    - Connect Hollywood Road to Knik-Goose Bay Road (east-west connectivity).
    - Extend S. Foothills Drive to the Parks Highway (north-south connectivity).
    - Build a bypass around downtown Wasilla.

- Connectors
    - Reduce congestion by completing the Tex-Al Road connection, moving traffic off Palmer-Fishhook Road and Wasilla-Fishhook Road.
    - Provide more subdivisions with access to Palmer-Fishhook Road and Wasilla-Fishhook Road (connection between Engstrom and Tex-Al roads).
    - Complete the Seward Meridian Parkway (to reduce traffic in subdivision near schools).
    - Extend Felton Street from the high school pool to the Palmer-Wasilla Highway.
    - Extend Hemmer Road.

Public Process

- Not all input is considered equally (geographic bias).

Design

- Nelson Road Bridge is structurally deficient and does not meet 100-year flood standards.

- Improve timing of stop lights (or eliminate lights along the Parks Highway near downtown Wasilla; e.g., Herman Road).
- Do not use roundabouts on larger streets/intersections (safety, truck size).
- Use roundabouts (specific locations; e.g., College Drive and Trunk Road, KGB at Mack/S. Heritage Farm roads, Vine and Knik-Goose Bay roads, Bogard and Seldon roads)
- Pave unconnected stretches of road, such as W. Donna Marie Lane.

Safety

- Provide additional entrance/secondary access to hospital from the Parks or Glenn highway.
- Include designated off-road, motorized vehicle lanes, separated from bike paths (e.g., Matanuska Bridge to the Butte, Palmer-Fishhook Road).
- Decrease speed and add a no passing zone near Talkeetna Public Library (turning traffic).
- Re-route the railroad around Wasilla.
- Plant grass along roadsides to delineate road areas.
- Increase shoulder fill to eliminate sharp dropoffs (Wasilla-Fishhook Road, Seldon Road to Palmer-Fishhook Road).
- Use traffic calming/speed bumps on Talkeetna intersection near Y Lake.
- Address falling rocks near Long Lake Recreation Site.
- Add an egress route from the area near France Road and the Palmer-Wasilla Highway, which will also reduce congestion at that intersection.
- Add shoulders and stabilize edges on E. Seldon Road.

Transit

- Build light rail to Anchorage.
- Expand Valley Mover (pickup) to Palmer.
- Increase opportunities for alternative transit solutions such as dual-mode vehicles. (rail/bus/microbus system; e.g., JR Hokkaido Railway Company, circa 2006).
- Utilize Alaska-engineered Diesel Multiple Units to provide rail service between the Valley and Anchorage.

Policy

- MSB should assume road power to fund projects using an area-wide levy.
- Do not build roads that can't be maintained.
- Implement Complete Streets program.

Parking

- Add parking at Palmer-Fishhook and Trunk roads.

Other/Site-Specific

- Glenn Highway
  - Improve lighting, striping, and signage along dark points of the Glenn Highway, especially at access points.
  - Add right-turn lane from Arctic Boulevard onto the Glenn Highway.
- Bogard Road
  - Change the stop sign to a stop light at Bogard Road and the Bogard Road extension.
  - Redesign the intersection at Bogard/Seldon roads to reduce backups and crashes (reduce cut-throughs).
- Palmer-Wasilla Highway
  - Add a center turn lane.
  - Four-lane the highway.
  - Improve the intersection at France Road.
  - Add guard rails near Begich Drive.
- Seward Meridian Parkway
  - Four-lane the highway, which would also reduce traffic on Bogard Road to Tate Drive to Seldon Road.
  - Extend the road and add a controlled intersection at E. Seldon Road.

- Evergreen Avenue
  - Add a through-lane and center turn lane between the Glenn Highway and S. Bailey Street.
- Knik-Goose Bay Road
  - Add a right turn at Clapp Street.
  - Raise the speed limit on Clapp Street.
  - Four-lane the highway (but do upgrades in the meantime).
- Parks Highway
  - Add a left-turn lane from north into Cubby's Market (near the Parks Highway Intersection with Talkeetna Spur Highway).
- Encourage new technologies and designers to engineer new or updated modes of transportation that will work in the Alaska environment.

Tough Choices Survey

A "Tough Choices" Survey was designed for community members and various MSB stakeholders as a platform for involvement in the planning process. The purpose of the survey was to help the MSB make decisions regarding future transportation improvements. The MSB does not have enough funds to

implement all the needed improvements, and wanted input from its residents and stakeholders regarding how it should prioritize transportation decisions. Eighty-one respondents participated in the survey, either in person or online. The results of the 15-question survey and online comment map illustrated a strong desire for increased multi-modal transportation facilities in the MSB. For complete survey results, see Attachment A.

Public Meeting/Online Open House – March 2017

The last series of public meetings/OLOHs was held in March 2017 for the purpose of introducing the project to the community, seeking input on transportation needs, discussing potential solutions, and soliciting public input.

Three public meetings were held on the following dates:

- March 28, 2017 – Sutton Public Library, Sutton
- March 29, 2017 – Fire Station 9-2, Houston
- March 30, 2017 – Fire Station 6-1, Wasilla

A total of 27 individuals signed the public meeting attendance lists.

The OLOH was available for public review from March 28 15 to June 14, 2017. During this period, there were more than 20 visits to the OLOH.

Between the comments submitted at public meetings, web comments received through the public meeting and OLOH, and comments submitted via email a total of 161 comments were received for the MSB LRTP. Highlights/themes from the public comments include:

Bike/Pedestrian Facilities

- Add informational signage on bike networks
- Have trails on both sides of the road
- Additional bike paths are needed
    - Colony Middle School to Trunk Road
    - Connect Palmer-Wasilla Highway to Bogard
- Need improved crossings for bikes and pedestrians
    - Old Glenn Hwy at Mat River Park,
    - Valley Way,
    - Clark Wolverine,
    - Virginia,
    - Smith Road,
    - Maud Road

Congestion /Safety

- Address Bogard/Engstrom/Green Hills Intersection

- Address safety/congestion issue near Caribou and Bogard Road intersection
- Foothills/KGB intersection is congested
- If there is a new Visitor's Center, it may cause congestion in the summer
- Improve intersection safety
- Arctic is becoming more difficult to cross
- Turn lanes are needed in more locations

Connectivity

- Provide additional connection to landfill
- Connect Seldon Road - Beverly Lake Road to Pittman Road
- Need bypass around Wasilla

Safety

- DOT, DMV, and School District should partner to provide drivers education classes
- Additional turn lanes are needed at various locations inlcuiding:
    - Glenn Highway for Marsh Road
    - for traffic headed south on the Glenn and turning west onto the new Bogard
    - on KGB for Clapp St turns
- Additional informational signs
- The Smith Road - Maud road area is dangerous for pedestrians
- Green Street access to Bogard is dangerous
- The access to/from the Baseball Fields on KGB is very dangerous
- Improve turn into and out of Matanuska Lakes
- Improve traffic from Engstrom and Green Hills to Bogard

Transit

- Build commuter rail
- More public transportation

Parking

- Need larger parking area at Butte trailhead and/or roadside parking

Other

- Improve access to schools
- Address parts of S Old Glenn and S Knik River Rd are at risk due to erosion
- Build Knik Arm Crossing
- No driveway access on the arterial section of Bogard Road or on arterials in general
- Require developers to do traffic impact analysis
- The borough needs zoning regulations.

- Lakes Boulevard needs major repair
- Lake Street needs to be paved for dust control
- Locate schools away from major roads

A listing of the comments received on the draft LRTP can be found in Attachment B.

Workshops

Involving a broad range of interested parties throughout the planning process is the key to a successful community plan. Workshops brought together representative groups and individuals to discuss specific areas of interest. The MSB held four different workshops during the LRTP planning process. Participants were identified based on geography, area of interest, and organizational representation.

Workshop #1

On the morning of July 23, 2014, representatives from community councils, chambers of commerce, and other interested organizations were invited to participate in a workshop to help the project team identify issues facing the MSB transportation system. Participants were asked to contribute their thoughts and reasoning on what they think is and is not working within the MSB transportation system, as well as other issues that should be considered as part of the LRTP.

During the meeting, participants were asked what they thought was *working* in the MSB transportation system. Participants indicated that the MSB's consideration of population growth was working, and was a good thing.

When asked what was *not working*, participants indicated that the following areas need improvements or more consideration:

- MSB needs more clear communication of information.
- Signal timing along the Parks Highway and the Palmer-Wasilla Highway is not working. It should be better synchronized.
- MSB needs more consistent data for planning purposes. The MSB, the DOT&PF, the Knik Arm Bridge and Toll Authority, and other agencies should be using consistent information.
- The Parks Highway is not efficient.
- MSB needs to better consider where it wants economic development, recreation, and other growth to occur, as not all transportation needs are related to congestion.
- MSB cannot keep kicking the can farther down the road; it needs to get roads up to standard so maintenance needs are not excessive.

The group was asked what future needs the MSB transportation system will have during the LRTP planning period. The following future needs were discussed:

- MSB needs roads that support future development.

- The DOT&PF should complete the paving of Palmer- and Willow-Fishhook roads through Hatcher Pass to create a paved loop road, which will greatly enhance tourism.
- Railroad crossing overpasses such as Montana Creek (Milepost 102) should be considered; however, it was mentioned that such an overpass could hinder road rehabilitation.
- Pittman Road needs an upgrade.
- MSB needs a Park and Ride on the Port MacKenzie side of the Knik Arm Crossing.
- More tourist pullouts are necessary.

Last, when asked what other issues MSB planners need to consider for this LRTP, the group mentioned the following:

- What is the ARRC doing? MSB needs to consider their plans.
- Consider the role of utilities; MSB needs to better coordinate with them. Also, what can utility users do?
- Consider how we can get the ARRC engaged in the LRTP process.
- MSB needs to consider access to the Vienna Woods subdivision (to Pittman Road).
- Fish passage is a DOT&PF, MSB, and ARRC issue.
- There needs to be fairness when planning and funding road maintenance; consider major road users, not just Road Service Area (RSA) residents.

Twenty people participated in the workshop.

Workshop #2

On the afternoon of July 23, 2014, elected officials, city and MSB staff members, along with representatives from local businesses, utility providers, the Transportation Advisory Board, state agencies, and the RSAs, were invited to participate in a workshop to help the project team identify issues facing the MSB transportation system. Participants were asked to contribute their thoughts and reasoning on what they think is and is not working within the MSB transportation system, as well as what issues should be considered in the LRTP, their funding priorities, and suggested transportation solutions.

Workshop participants were divided into small groups for a transportation project prioritization exercise. Each group was given a list of all identified improvement projects, roadway and trail maps, and a worksheet, as well as paper “bills” totaling $1.7 billion to symbolize anticipated state, local, and federal funds that would be available over the next 20-year planning period, to allocate. Working together, the groups prioritized the projects they wanted to see constructed (being sure to account for maintenance costs).

Groups, each with a facilitator from MSB Planning Department or HDR, had 40 minutes to compile their priority lists. Following the small group work, a representative from each group presented the top five projects from both their capital improvement projects list and their long-term project list.

The top four projects (those most often selected) include:

1) The Bogard Road East Extension from 49th State Street to the Glenn Highway
2) Knik-Goose Bay Road between the Palmer-Wasilla Highway and Settlers Bay
3) The Glenn Highway between the Parks Highway and Arctic Road
4) The Parks Highway between Lucus Road and Big Lake Road

As the small groups conducted the exercise, there was discussion about how best to prioritize funds. Highlights from the discussions include:

- Additional projects to consider include Fairview Loop, Seldon Road between Wasilla-Fishhook Road and Lucille Street, and the Port to Parks Highway in Houston.
- The Alaska Railroad needs to be involved in MSB transportation planning.
- Transit needs to be a part of the traffic congestion solution.
- Safety corridor projects should be supported.
- Congestion needs to be relieved on the Palmer-Wasilla Highway (Bogard segments, connectivity).
- Per the Wasilla Bypass/Parks Alternative, some groups recognized the potential need for the megaproject, but the price tag was restrictive. Some questioned if spending $425 million on about 20 smaller projects would do more to relieve congestion.

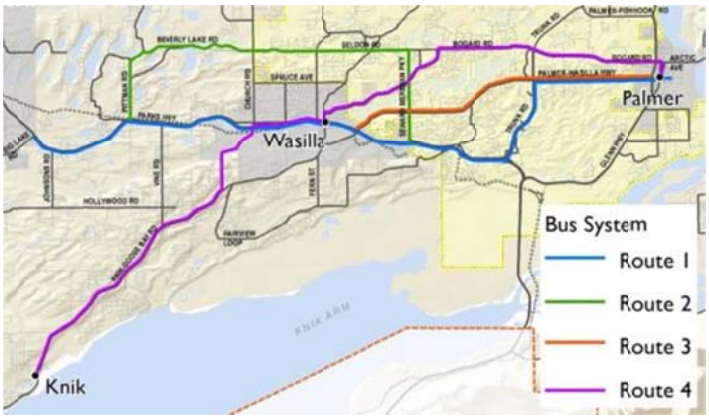
Forty-one people participated in the workshop.

Workshop #3

Workshop #3 was held on the morning of April 20, 2016 at Fire Station 61 in Wasilla. The purpose of this event was to seek input on the LRTP from area transit providers, to identify priority transit networks and nodes, and to discuss different transit service options. In addition to staff, 13 people signed in to the event.

To start the workshop, participants had a facilitated discussion about what the transit system would look like in 2035. Some of the issues that were discussed include:

- Additional service is needed during commute times.
- The MSB needs more coverage.
- Different generations have different transportation needs that should be accommodated.
- Land use coordination is key.
- We need a team approach.



The workshop ended with a group exercise. Participants were asked consider the next 5-to 20-year period and where MSB should have fixed-route local bus service. The group was asked to identify and prioritize, using provided maps, corridors where there is current or anticipated demand for transit.

The group identified the Parks Highway, the Glenn Highway, Trunk Road, and the Palmer-Wasilla Highway and Knik-Goose Bay Road as key corridors for transit service.

Workshop #4

Workshop #4 was held on the afternoon of April 20, 2016 at Fire Station 61 in Wasilla. This purpose of this workshop was to discuss issues related to public transportation, walking/biking, TDM/TSM (Transportation Demand Management/Transportation Supply Management), and land use changes. In addition to staff, 48 people signed in to the event. Following informational presentations, the group was asked to participate in a "sticky dot" exercise to indicate their Top 5 alternative transportation solutions.

Following that exercise, participants were assigned to one of four small groups: public transportation, walking/biking, TDM/TSM, and land use changes. Groups, each facilitated by an MSB or HDR planner, were asked to identify the elements of each alternative solution they thought were appropriate for the MSB and where those alternative solutions could be applied.

Following group discussions, a representative from each group provided a report of the key points of that group's discussion:

TDM/TSM

- We discussed all the options presented on the poster.
- MSB needs multiple solutions for our diverse community needs.
- There is a culture shift from automobile dependence.
- "Soft" employer benefits are popular; we think there is room for growth with benefits like transit passes and telecommuting.
- High-occupancy vehicle lane; this is expensive, maybe something for the distant future.
- We need improved access to medical services.
- There are changing expectations regarding low- or no-cost services.
- We need better maintenance of existing (and any new) facilities; maybe an area-specific maintenance fee should be considered?
- How about ride pooling for schools, and van pooling for medical needs?
- Implementation all comes down to cost.
- We discussed the need for partnerships and planning in incident management.
- The LRTP should consider "walk only" areas.
- Park and rides are a great tool; we identified several potential locations (see map, attached).

Walking and Biking

- The LRTP should consider existing separated pathways – it would be great to have a map that shows those.
- New pathways along major roads would be great.
- Do we know how many people use the existing pathways? For community vs. recreation?
- We identified density nodes, locations for pathways.
- We are missing connectivity, and have been planning reactively vs. proactively.
- We wonder how pedestrian/biking patterns will change in 20 years.
- Major intersections are danger zones.
- We discussed all-terrain vehicles (ATVs), and how they fit into the equation (legal in State of Alaska right-of-ways, need to be 3 feet off pavement, but we don't design pathways for them).
- Per zoning, we want pathways to schools, and trails along greenbelts would be great to get folks off the main roadways.
- Consider winter trails (1st priority) vs. summer trails (2nd priority).
- Safety is a key concern – lighting, mapping.
- Think about pedestrians and bikers through roundabouts – their safety matters.

Land Use Changes

- Land use planning should be a recognized and considered tool for the future.
- We discussed transit-oriented development.
- The LRTP should recognize the necessity of land use tools, and transit should focus on those tools.
- Land use planning should focus on the core area first, and then move out to transportation corridors.
- Do a corridor management plan, a commuter rail plan, and focus on the preservation of existing corridors.
- Pro-cluster development planning would be beneficial.
- Build out bus ridership to support commuter rail.
- Platting code adjustments (quick claim easement for transportation) are needed.

Transit/Public Transportation

- We need multi-modal transit.
- We need additional rail stations and depots at Turner Properties, Vine Road, and Houston; get site control for those AMP/MP.
- Additional options are needed for fixed-route services.
- Fixed routes and local routes should be evenly distributed.
- Transit stations are necessary in Wasilla and Palmer (transfer to express busses).
- The Palmer-Wasilla Highway is a good location for the primary transportation corridor; it is already used as such, and there are lots of services provided.
- Park and Ride facilities (recognizing that folks still want their cars) are needed at the following locations: Seward Meridian Parkway/Parks Highway, Trunk Road/Parks Highway, Meadow Lakes, Knik-Goose Bay Road, Old Glenn/New Glenn highways.
- Connections to para-transit are necessary; we already have Chickaloon Village Traditional Council transit and Sunshine transit.
- All transit should be coordinated and have a central maintenance department, central management, and an online component/app for riders.
- A surcharge on motor fuels is the most viable solution for paying for these improvements. Four cents per gallon: 3 cents for maintenance, 1 cent for transit.

At the end of the workshop, participants were asked to complete the "Tough Choices" survey, which was also made available publicly (see Online Open House – April 2016, Tough Choices survey earlier in this document).

Email invitations to Workshop #4 were sent to the people who were invited to Workshop #2 (held in July 2014) plus the MSB Planning Commission, the MSB Platting Board, and representatives from each incorporated city in the MSB.

Workshop #5 - Alternatives Analysis/Results Workshop

A 3-hour Alternatives Analysis/Results workshop held on July 21, 2016 at Station 61 in Wasilla was a follow-up to the Alternatives and Transit workshops held in April 2016. Following a presentation and question-and-answer period, attendees participated in a prioritization and evaluative exercise: how well did each of the items in the low-, medium-, and high-change scenarios meet LRTP goals, the public benefits from each solution, and individual preferences for each item. The exercise results were used to identify LRTP recommendations.

Following the exercise, the group asked final follow-up questions and was encouraged to flag items missing from the alternatives. The comments are summarized below:

- Add the Palmer-Wasilla Highway Corridor Study to the project list.
- Add bus turn-out lanes on major roads.

- Policy funding for pedestrian walkway snow clearing is needed.
- Extend path along the ARRC to the fairgrounds/State Fair transit center.
- Don't push out the timeframe for adding fixed bus routes.
- Consider para-transit along with fixed routes.
- Identify locations for rail stations to support future light rail, and coordinate with the Municipality of Anchorage (MOA).
- Reserve rail stations, transit facilities, and road corridors as part of subdivision plans and note these on the plat. Change ordinances to show reserved spaces on public maps.
- Clarify who will provide the University of Alaska shuttle service.
- Recognize the function that major roads play in the network, including Federal Highway System goals.
    - Density notes may conflict with highway goals.
    - Verify the definition of stakeholders.
- The design standards manual should incorporate a complete streets and implementation plan.
- Establish data-sharing agreements, including with the military.
- Define specific road functions—identify corridors specific for transit, and other functions (such as the Parks, Glenn and Palmer-Wasilla highways).
- Add a goal for regional connections (e.g., congestion solutions for the Glenn Highway).
- Add a section on off-road vehicle/ATV use—such as a use ordinance, ATV plan, or ATV corridor.
- Keep in mind that newer populations will have different expectations for travel and transit.
- Coordinate with state agencies on national standards and best practices.
- Consider how TDM/TSM will be used if the national gas pipeline is constructed (2019-2025).
- Add emergency providers and access under safety.
- Consider traffic calming on subdivision roads to prevent residential streets from becoming corridors.
- Offer LRTP classes/information at the transportation fair this fall.

Other comments provided at the workshop included:

- Have you considered a goal for enhancing regional connections/transportation?
- Need trails along Trunk Road south. There were a lot of pedestrian paths on the maps at public meetings. Does this capture all of them?
- Include design standards in complete streets and street typology.
- Need to coordinate with the Mat-Su Visitor's Bureau so more tourists can easily get around the MSB.
- University of Alaska UPASS/Transit
- MOA should provide and pay for vanpool service.
- Must provide para-transit.
- The trail following the railroad track from the Old Palmer Depot needs to go to the Fairgrounds.

- Connect the Wasilla and Palmer Senior Centers to bus routes.
- Connect bus routes to libraries, Mat-Su College, Farmer's Markets, State Fair, senior centers, schools, medical facilities, Menard Center, MTA Sports Center, and tourism sites (e.g., Musk Ox Farm, Reindeer Place, museums)
- Need bus stop signs all over the Borough.
- Need benches with a "roof" so folks can wait for a bus in inclement weather. All bus stops should have NO SMOKING signs.
- Need much better communication and marketing of how to ride the buses.
- Bus drivers should be paid a living wage! They are the face of transit companies to the public.
- Mat-Su Community Transit used to administer a cab voucher for times and places the buses do not run. A new cab voucher system need to be implemented ASAP. There needs to be a Borough law about no smoking on all cabs.
- The major roads need "bus turnouts."
- The local governing bodies need to allocate funds to keep the sidewalk and bus stops clear of snow and ice.
- A bus pass is needed that is acceptable on all the various transit systems – for simplicity, efficiency and to encourage folks to not drive their personal cars – avoid congestion on streets.
- Need bus connections/commuter service between/among all towns in the Borough.
- "High intensity" transit of four bus routes is really low. For sustainable transit, it is critical for community partnerships and it is important to identify this in the plan.
- Involve bus riders in planning bus routes.
- Need weekend service.
- Need a simplified and easy-to-read bus schedule.
- Consider discounted fares for select user groups such as seniors, people with disabilities, and students.
- Need newer buses.

Other Outreach Efforts

The project team developed and implemented a robust outreach campaign to ensure that stakeholders were aware of the opportunities offered to comment on the alternatives development process.

Fact Sheets

The project team produced fact sheets on technical issues for distribution at public meetings, presentations, and through the website. Topics included:

- MSB Population and Roadway Data collection
- Alternative Futures
- Roadway Congestion
- Roadway Funding

- Transportation Decision Making
- Transportation Options

Small Group Presentations

MSB staff presented information from the LRTP to a variety of small groups, including community councils, chambers of commerce, civic groups, and professional associations.

Date	Meeting/Presentation
June 16, 2014; August 27, 2014; October 16, 2016	Transportation Advisory Board Meeting
June 2014, August 2014	Aviation Advisory Board Meeting
	MSB Planning Commission
	MSB Assembly
	Transportation Advisory Board Meeting
October 22, 2014	MSB Transportation Fair
October 22, 2015	MSB Transportation Fair
November 2014	MSB Planning Commission Meeting
September 22, 2016	MSB Transportation Fair
April – June 2017	Gateway Community Council Butte Community Council Sutton Community Council Knik-Fairview Community Council Big Lake Community Council Chickaloon Community Council
April 11, 2017	Common Grounds
April 19, 2017	ASCE Mat-Su
April – June 2017	Palmer Chamber of Commerce Wasilla Chamber of Commerce Big Lake Chamber of Commerce Palmer Kiwanis Houston City Council Palmer City Council Mat-Su Transit Coalition Palmer Planning Commission Houston Planning Commission Wasilla Planning Commission Mat-Su Senior Center
April 27, 2017	Walkability Forum
June 6. 2017	Transportation Advisory Board Meeting

Attachment A: Tough Choices Survey Results

1.0 Introduction

As part of the Matanuska-Susitna Borough (MSB) 2035 Long Range Transportation Plan (LRTP) public involvement process, the Tough Choices Survey was designed for community members and various MSB stakeholders as a platform for involvement in the planning process. The purpose of the survey was to help the MSB make decisions regarding future transportation improvements. The MSB does not have enough funds to implement all the needed improvements, and wanted input from its residents and stakeholders regarding how it should prioritize transportation decisions.

A total of 81 responses were collected between April 22 and June 13, 2016. All survey responses were collected through the MSB Online Open House and MSB LRTP Workshop #4, which occurred on April 20, 2016. Individuals had the option to skip questions or provide responses. The survey questions were divided based on the following topics:

- Transit
- Bicycle/Pedestrian
- Transportation Demand Management (TDM)/Transportation System Management (TSM)
- Land Use
- Funding

2.0 Results

The results of the 15-question survey illustrate a strong desire for increased multi-modal transportation facilities in the MSB. The following sections are divided into subsection topics that correspond to these questions.

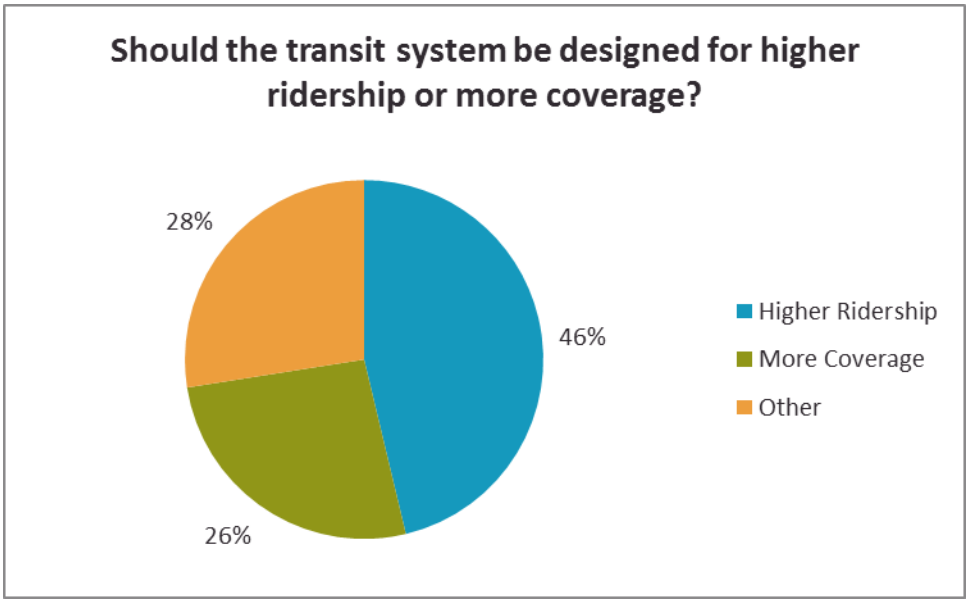
2.1 Transit

This section provides a summary of the responses regarding how people view transit.

2.1.1 Transit System

When asked about transit, 46% of respondents stated they believed the transit system in the MSB should be designed for higher ridership, while 26% of respondents stated they believed there should be more coverage for services[1] (see Figure 1).

Figure 1: Survey Question 1



Other) responses (28%) included (in the respondents' words):

- Should be specifically targeted to seniors only
- Design for high ridership near population centers, but be sure to provide coverage in rural areas along major thoroughfares only. They goal should be to able to serve everyone, although folks in rural areas may need to drive 5-10 miles to a stop along a major road (Parks, Palmer/Wasilla Hwy, KGB, etc.)
- You can do both: more coverage with more efficient smaller vehicles
- Both – With more coverage comes more ridership

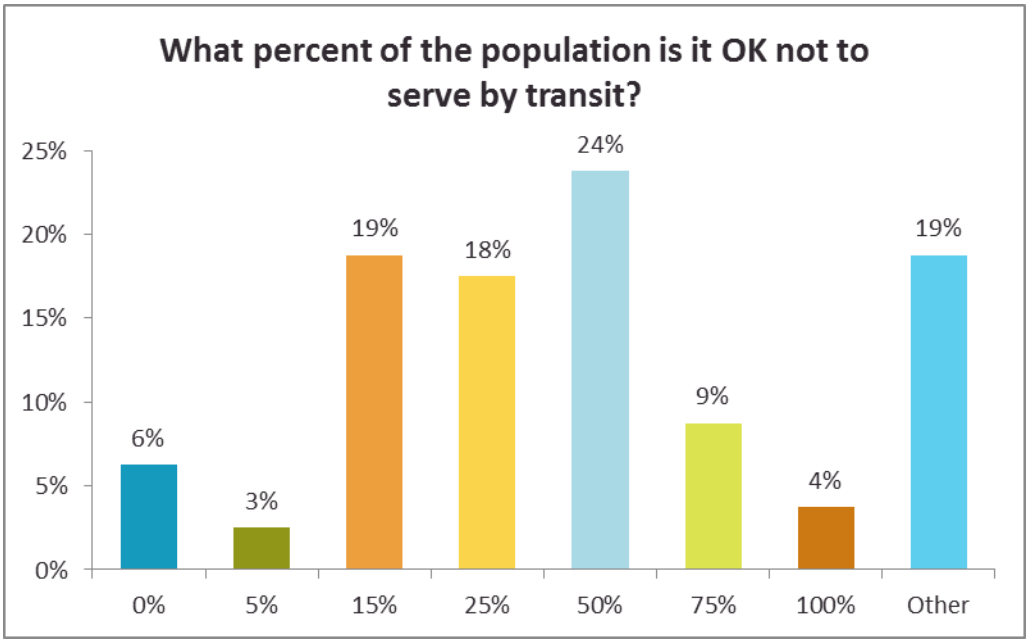
[1] Increasing ridership refers to increasing the people who ride the bus while increasing coverage refers to increasing the areas of the MSB that have transit service.

- Start with ridership emphasis to show/demonstrate financial feasibilities and then as more of community see benefit and support increases, expand for coverage
- Shouldn't have more transit
- I think it evolves. Start with ridership emphasis to show/demonstrate financial feasibilities and then as more of community see benefit and support increases, expand for coverage.
- Higher ridership in core areas/more coverage & other areas
- Combination – higher ridership on core fixed routes and more coverage in outlying areas with paratransit and pulsed services
- Diverse – high density – more frequent trips; low density – less frequent trips
- Feeder communities to city centers, schools, business districts
- Balance between fixed routes and on demand service
- More frequency
- Frequency

2.1.2 Population served by transit

When asked about what percentage of the population should not be served by transit, 24% of respondents indicated that not serving 50% of the population would be acceptable, followed by 15% (19% of respondents) and 25% (18% of respondents) of the population not being served by transit (see Figure 2).

Figure 2: Survey Question 2



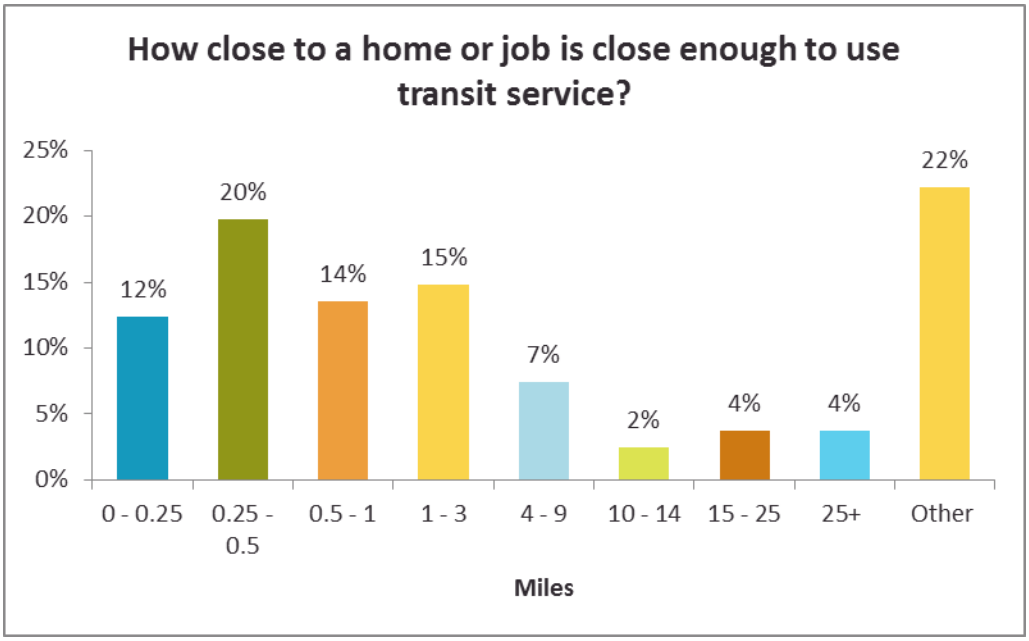
Other (19%) responses included (in the respondents' words):

- Main travel corridors should be covered first.
- I believe the development of a master plan that looks at transportation hubs and corridors is needed before this question is answered
- Strike the question; insufficient information - you should ask what you really want to know.
- Efficiency and cost effective to targeted pick up sites throughout the outer areas.
- Road system 0%. Probably OK to miss those off grid
- Depends on the population "niche" not be served. While no transit system can serve 100% of all ridership categories...Disabled-Seniors-Non Choice rider should take priority
- Zero for transit-dependent groups
- Depends on the transit service availability
- Depends on where the growth is if it chooses to be in outlying large parcel land then community should be aware there won't be transit services
- Should develop incrementally to analyze and grow with need
- The public could tell you; and the transit coalition could provide an excellent perspective
- Difficult to answer. It's a density issue. 60% within dense areas.
- Depends on generation
- Whatever percent you can't serve due to fiscal limitations of funding

2.1.3 Proximity to Transit

Regarding how close to home or work is close enough to use transit, 20% of respondents indicated 0.25-0.5 mile, followed by 1-3 miles (15% of respondents), and 0.5-1 mile (14% of respondents; see Figure 3).

Figure 3: Survey Question 3



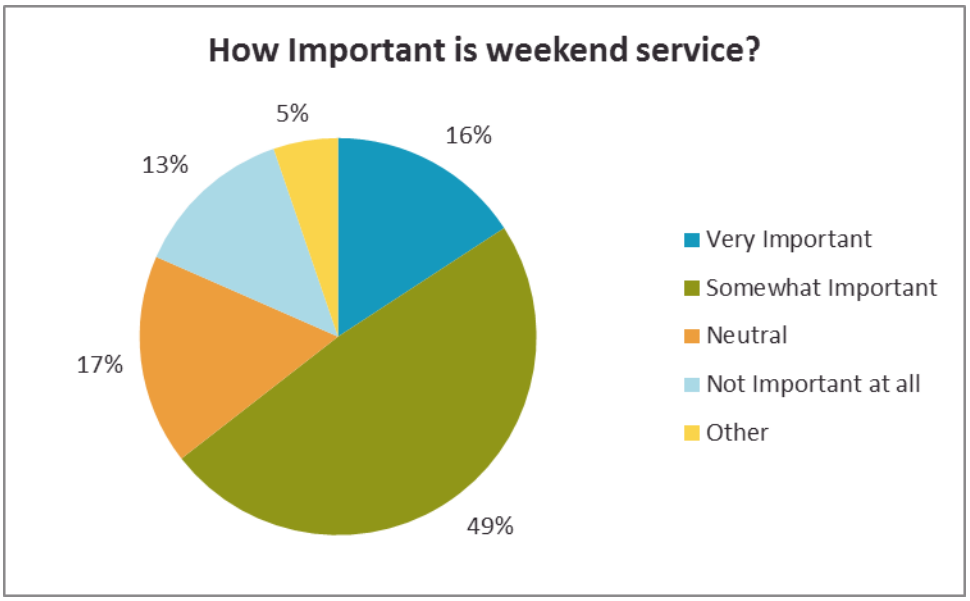
Other (22%) responses included (in the respondents' words):

- Needs to be close to home and job not home or job to have steady usage
- I'd be willing to drive up to 10 miles to a park & ride or bus/train stop location. However, where I need to get off and walk, the distance would ideally be 0.25 miles or less.
- Again, inappropriately worded question; proximity is relative.
- If using a park and ride it can be far away from my home but it will have to drop of near my work, less than half a mile
- Shouldn't have more public transit
- Depends on type of transit service--commuter service 5-10 miles. For intra-valley .25-.5 miles
- Depends on the speed and directness of transit
- TIME is more important than distance!!
- Depends on the type of transit service if there are park and rides you get a longer range
- 1/4 – 1/3 mile walk, 1-3 mile with bicycle use
- Matsu's 4 mile arterial grid means a linear node system (PW Hwy) city to city center
- Depends, is there parking, bike racks, covered/heated area? Bathrooms, lockers (or storage). If there are, then I would commute from farther away.
- Problem is transportation at destination

2.1.4 Weekend Service

Nearly half of respondents (49%) stated they believed weekend transit services were somewhat important, followed by neutral (17% of respondents) and very important (16% of respondents; see Figure 4).

Figure 4: Survey Question 4



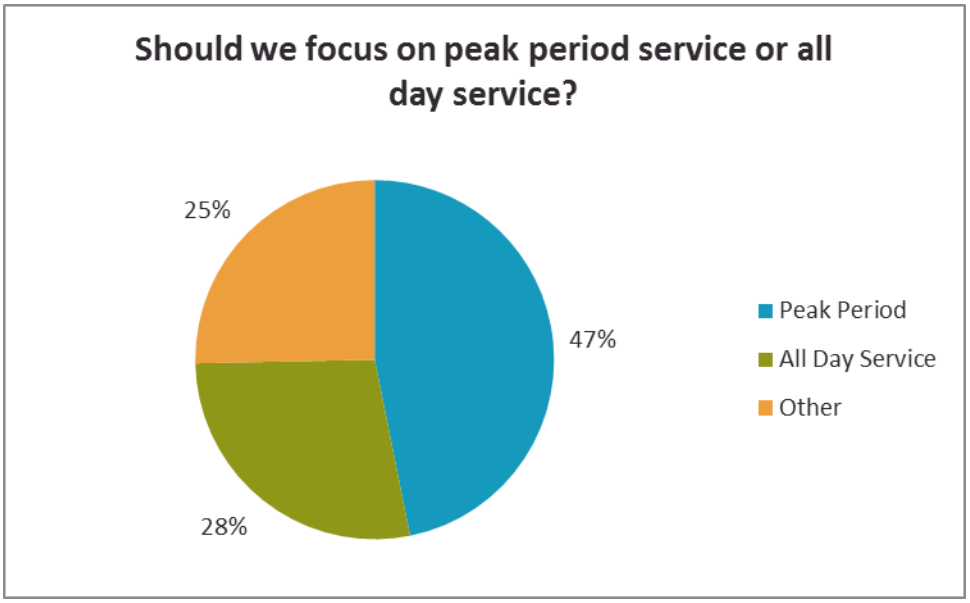
Other (5%) responses included (in respondents' words):

- Need to identify the needs to make an informed plan.
- It's important for non-choice riders but probably limited when building valley transit capability, and then it evolves to higher levels as time progress and system establishes financial stability/equilibrium
- Important but finance reality says you must start with main parts and expand over time
- Not important to me but very important to those who don't own a vehicle

2.1.5 Time of Transit Service

When comparing peak period services to all day services, almost half (47%) of respondents stated they believed that peak period services were more important to transit users, while 28% of respondents stated they believed that all day service was more important (see Figure 5).

Figure 5: Survey Question 5



Other (25%) responses included (in the respondents' words):

- All day and night--keep the drunks from driving
- Focus should be improving roads for regular vehicles
- Peak initially and then expand as system evolves and becomes more established
- Both – work shifts vary, especially for medical staff
- Express service during peak with all day service available.
- Peak service on core commuter/express routes and all-day service on local, para-transit routes with high volumes
- Peak period with maybe a Friday or Sat evening to give options for evening/weekend shopping, dining activities. It should align with businesses (including adjusting for winter/summer)
- Focus on peak, but at least provide limited off peak service
- Match capacity and schedule to demand
- Needs to be a balance of both depending on the area served and population
- Peak for Anchorage commuter, Palmer to Wasilla commuter, and all day for Palmer to Wasilla and intercity routes used by all by commuters
- Combo – more service for peaks during commuter times; all day – less frequent for non peak time

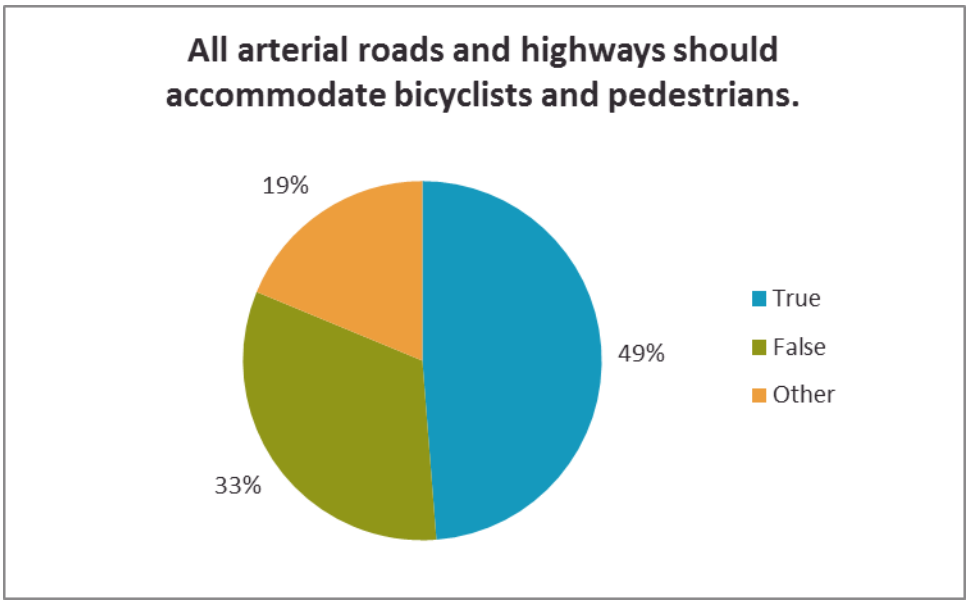
2.2 Bicycle/Pedestrian

This section provides a summary of the responses regarding how people view bicycle/pedestrian improvement.

2.2.1 Arterial Roads and Highways

Approximately half (49%) of all respondents stated they believed arterial roads and highways should accommodate bicyclists and pedestrians, while 33% of respondents believed arterial roads and highways should not (see Figure 6).

Figure 6: Survey Question 6



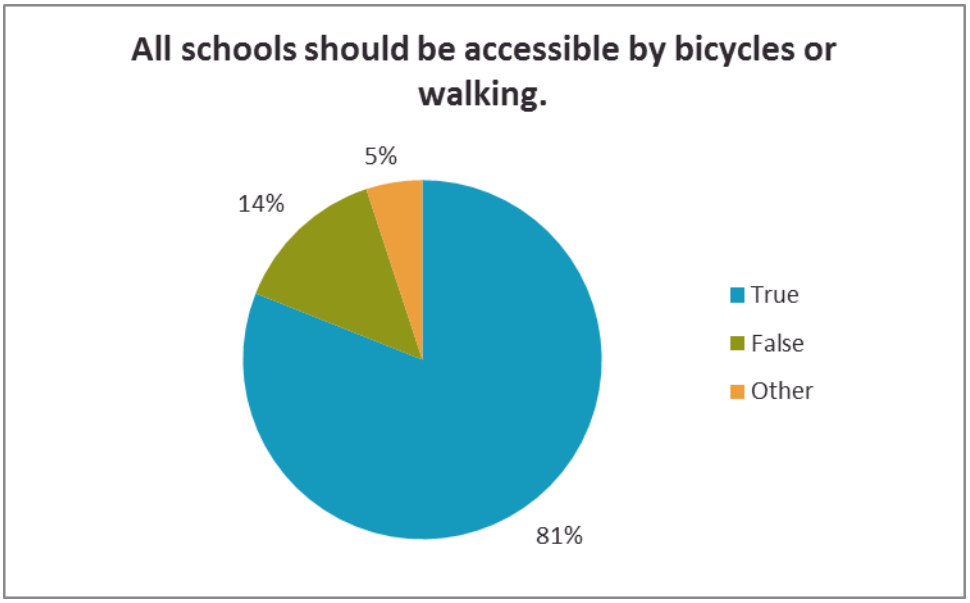
Other (19%) responses included (in respondents' words):

- Again, inappropriate question. Too broad. This won't elicit helpful information.
- Maybe arterial should be considered jargon and not in a survey for general public. Major roadways should have ped/bike paths
- Pedestrians 1st
- No because they will used and destroyed by illegal motorized traffic
- Arterial roads yes....highways such as the Parks through Wasilla-no
- Roads with speed limit of less than 35 mph.
- Main roadways should accommodate bike/ped
- Specific definition of need
- Not sure

2.2.2 School Accessibility

The majority (81%) of respondents stated they believed that all schools should be accessible by bicycles or by walking, while 14% of respondents stated they believed schools should not be accessible by bicycles or walking (see Figure 7).

Figure 7: Survey Question 7



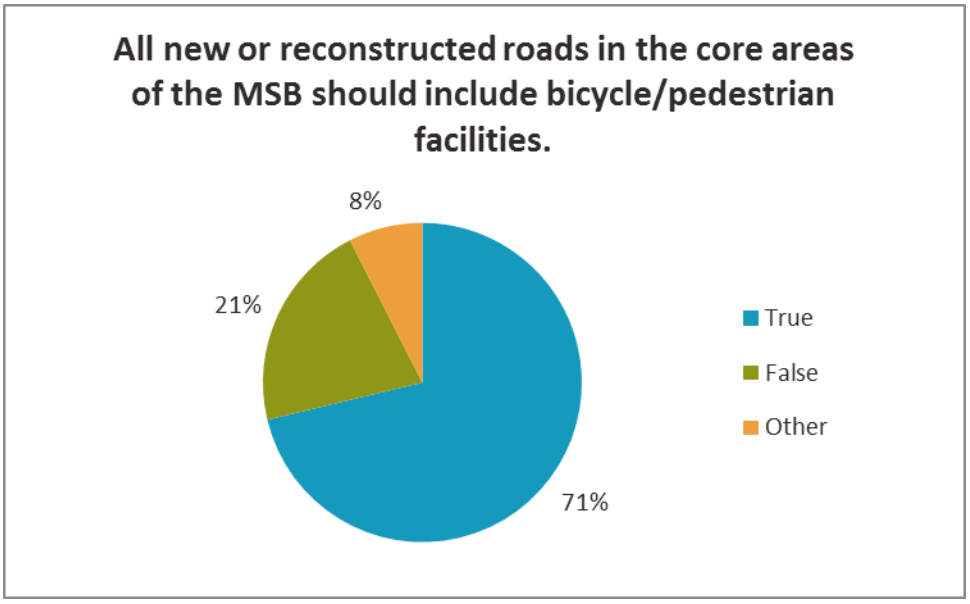
Other (5%) responses included (in respondents' words):

- This is not realistic and costs would be enormous.
- Specific feasibility for population served

2.2.3 New or Reconstructed Roads

The majority (71%) of respondents stated they believe all new or reconstructed roads in the core areas of the MSB should include bicycle/pedestrian facilities, while 21% stated they believed they should not (see Figure 8).

Figure 8: Survey Question 8



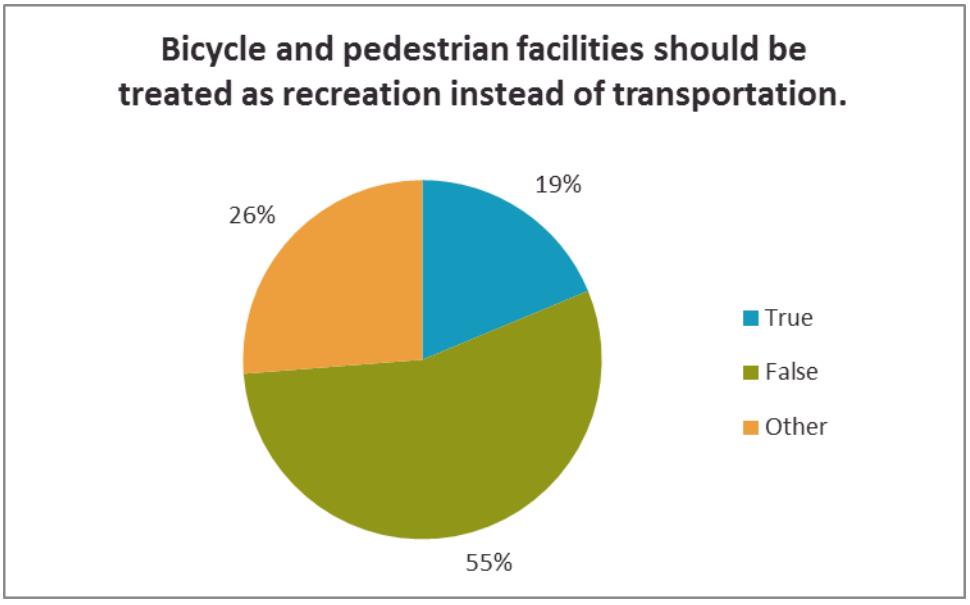
Other (8%) responses included (in respondents' words):

- True, but minimally, the roads should at LEAST have a decent shoulder to walk on.
- Depends on functional use (OSHP)
- Transit slow/pull-out
- True, or provide an alternative safer/better route
- Should be use-specific definition

2.2.4 Recreation or transportation

When asked if bicycle and pedestrian facilities should be considered as recreation instead of transportation, more than half (55%) of respondents disagreed, while 19% agreed (see Figure 9).

Figure 9: Survey Question 9



Other (26%) responses included (in respondents' words):

- Vehicular pathways/facilities should have top priority.
- Both uses should be considered
- As the borough population grows, transportation will become a future planning concern.
- This is false--bicycles are the most efficient form of transportation. Wide shoulders are cheaper AND SAFER than side paths. Consult the AASHTO "Guide for the Development of Bicycle Facilities, 4th Edition." https://bookstore.transportation.org/category_item.aspx?id=DS&gclid=CLb76P2Thc0CFYdlfgodEcgGAQ

- Pedestrians 1st
- They must be treated as both such that all types of users have access to the places they want to go.
- Hybrid w/ emphasis on transportation
- Both
- Use-specific
- Need to re-evaluate demographics. Understand use now vs 20 years from now.
- Depends on area and reason for facility; should be conscious decision on what it is being built to; both have their place
- It is easy to do BOTH
- Both are necessary
- Both – rec – primary use

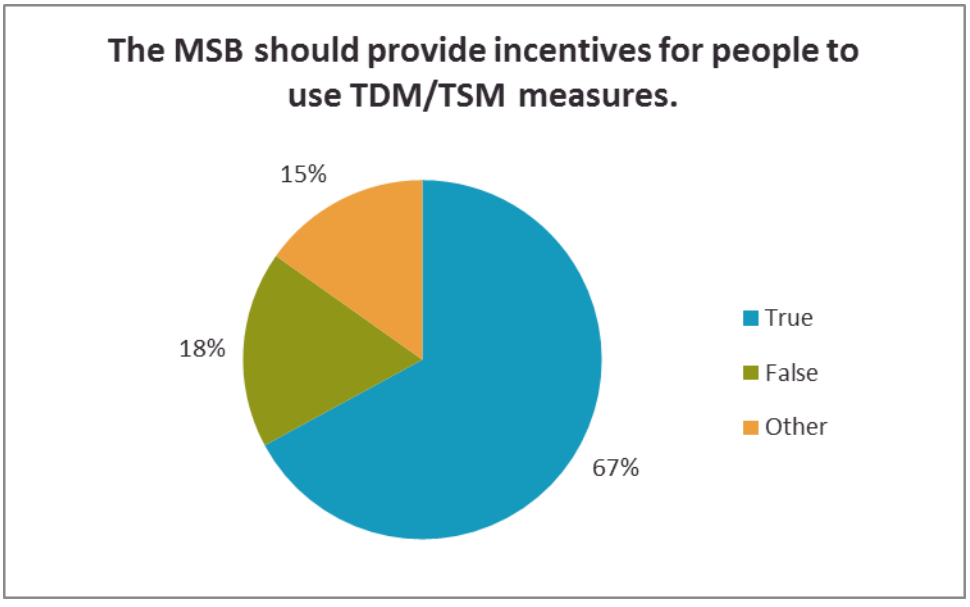
2.3 Transportation Demand Management (TDM)/Transportation System Management (TSM)

This section provides a summary of the responses regarding how people view transportation demand management (TDM)/transportation system management (TSM) improvements.

2.3.1 Incentives

A majority (67%) of respondents stated they believed the MSB should provide incentives for using TDM/TSM measures, while 18% of respondents disagreed (see Figure 11).

Figure 10: Survey Question 11



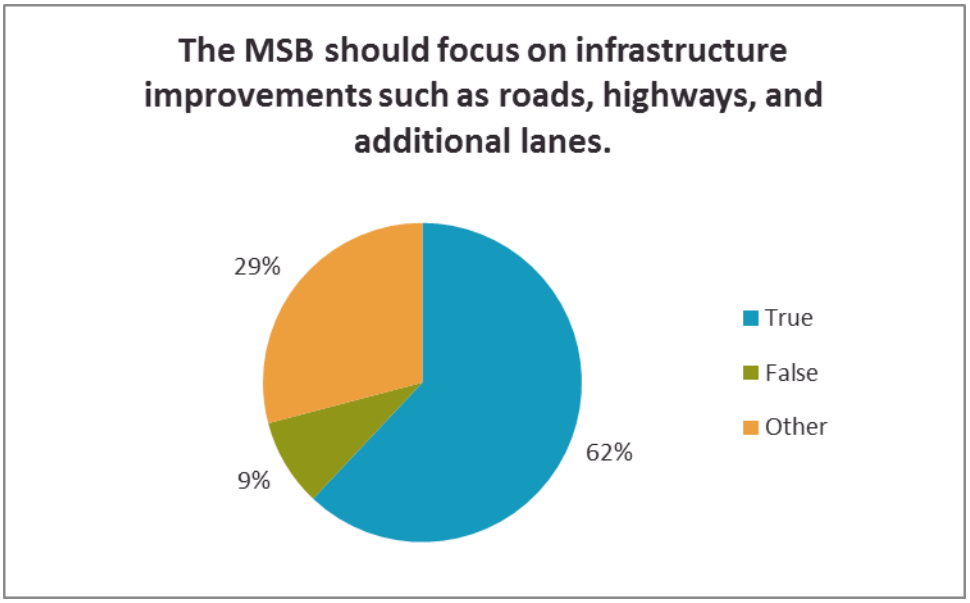
Other (15%) responses included (in respondents' words):

- Incentive should be a well designed system that meets needs
- You haven't defined 'incentives' - another low value question.
- Not sure without more information.
- I am unfamiliar with the acronym TDM/TSM
- True: but you should define your terms (initialisms)
- I don’t think incentives are necessary for a well thought out, and well communicated plan should be sufficient
- Only limited – low cost
- Use-specific
- I’m unsure
- Limited financial incentives – subsidy for infrastructure would be better initially
- They should have options for what is out there

2.3.2 Priority

The majority (62%) of respondents stated they believed the MSB should focus on infrastructure and road improvements, while 9% disagreed (see Figure 12).

Figure 11: Survey Question 12



Other (29%) responses included (in respondents’ words):

- What definition of 'improvement'? Everything seems to be justified by 'upgrade' regardless of how new.
- Infrastructure also includes bike paths, bus pull outs and stops, multi model transit centers, public transit vehicle replacement funding

- My family would like to see predictable, safe space for alternative transportation, as there are many who cannot drive vehicles due to cost or physical impairment.
- They should focus on making existing roads safer such as lighting
- Separated pathways
- True - but infrastructure should include transit
- True MSB should focus on roads, but not at the expense of bike/pedestrian traffic.
- True, but with other options including in this new rail plan
- Maximizing current investments, utilizing lower cost TDM methods!
- Focus should be on a balanced transportation network; build out the collector system so that transit can offer better coverage
- MSB should work on development of clusters – business/residential – identify key cluster zones appropriately. Development transportation plan around these key areas of development
- Use-specific
- I'm unsure
- The local grid does need to be built out even if transit, bikes, etc. are more of the focus
- Focus on infra improvement for modes besides cars (bus, bike, ped)
- Should focus on infrastructure that create the most band for the buck/serves multiple forms of transportation
- Should but must include other modes
- Both – some areas need improved service and some need new connectivity with access

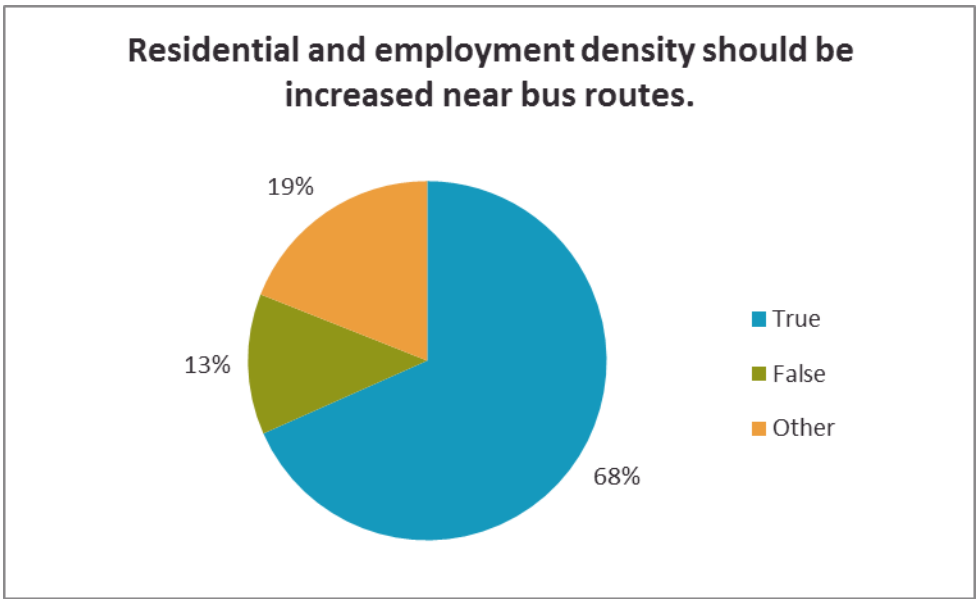
2.4 Land Use

This section provides a summary of the responses regarding how people see land use changes.

2.4.1 Density near bus routes

The majority (68%) of respondents stated they believed most residential and employment density should be increased near bus routes, while 13% disagreed (see Figure 13).

Figure 12: Survey Question 13



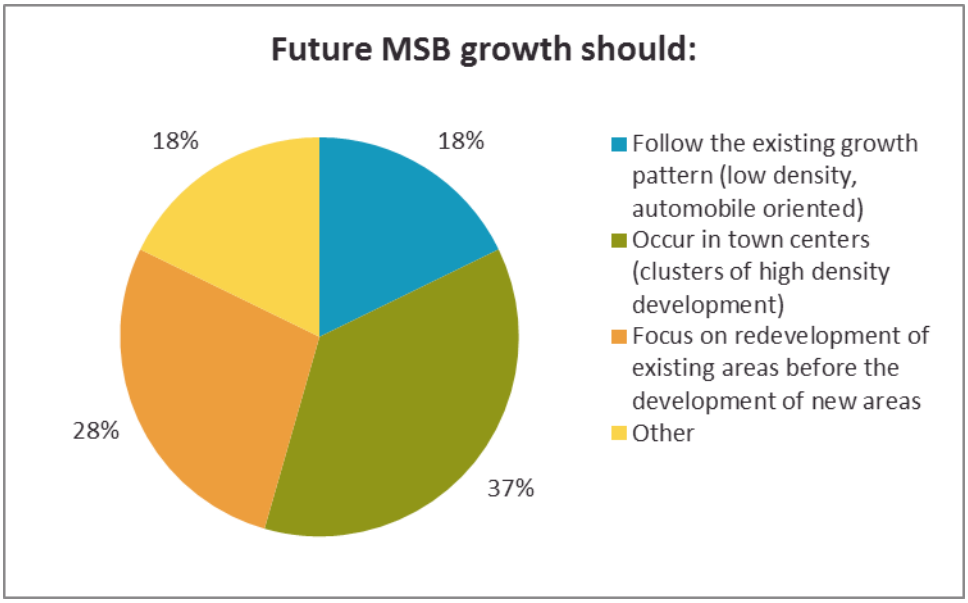
Other (19%) responses included (in respondents' words):

- This question is ridiculous but characteristic of borough planning. Transportation comes after settlement.
- Should be encouraged through land use regulations
- This is a realistic.
- With funding limitations the MSB can not afford expansion. We must focus on Primary objectives of safety and protection.
- Residential and employment density development should be encouraged/incentivized in Borough...and bus routes planned to respond to density locations/provide connectivity....Density development wouldn't be driven by established bus routes. That's the tail wagging the dog. bus routes.
- Where there is transit programming
- Use-specific
- Can only be done with zoning
- Most commute to Anchorage

2.4.2 Future MSB Growth

With regards to how future growth should occur in the MSB, respondents were fairly split. Having future growth occur in town center was selected by 37% of respondents, while 28% selected focusing on redeveloping existing areas, and 18% indicated the MSB should retain the existing growth pattern (see Figure 14).

Figure 13: Survey Question 14



Other (18%) responses included (in respondents' words):

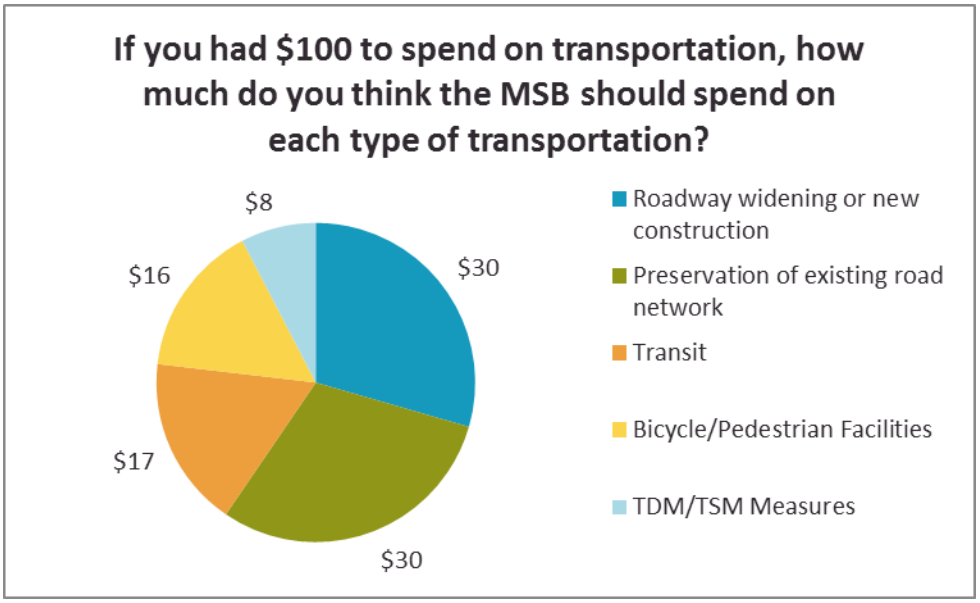
- All of the above
- Focus on the real economy, real funding, real need, and real ability to operate and maintain into the future.
- The borough growth is increasing and what it is today may not be the same in the next 10 years.
- Develop areas but leave green belt area and hiking parks within Palmer to Wasilla area.
- To include multiple options
- TOD focused
- Focus on key nodes but also key corridors such as the P/W Highway
- Let the market/people decide. It's not the job of government to influence development in this way. Your focus in entirely on the small core area.
- Population determined
- Depends. Different options are more suitable in different densities
- More land use options available – allowable for choices
- Encourage higher density, but a certain % of the population will always want larger lots where they have more space and privacy
- Pick one and plan for it and enforce thru zoning and permitting

2.5 Funding

Respondents were asked to divide $100 among five different types of transportation improvements. Overall, respondents indicated that road widening/new construction and preservation of the existing road system were equally important, with each averaging $30.

Transit improvements averaged $17, with bicycle/pedestrian improvements close behind at $16. The remaining funds ($8) were for TDM/TSM improvements (see Figure 15).

Figure 14: Survey Question 15



Attachment B: Comment Summary

Matanuska Susitna Borough

2035 Long Range Transportation Plan

Public Comment Period Summary

The comment period for the Public Review Draft 2035 Matanuska-Susitna Borough (MSB) Long Range Transportation Plan (LTRP) opened on March 20, 2017. The original deadline for comments was May 12, 2017 but this was extended to June 14, 2017. Public comments on the draft LRTP were solicited through three public meetings, an online open house, and presentations to community councils and other community groups. In addition, the draft LRTP was available on the project website.

Comments received via written correspondence, telephone, email, online open house or comment map[1] include:

Comment
The public driving habits have severely declined. My suggestion--DOT, DMV, School District partner to present driving classes--free. This is a serious safety issue since there is no "drivers ed" in schools. And, our population is a melting pot so local norms are not established.
Hello: Saw you at the Butte CC. Thank you for coming out. I attempted to review the draft on line. I did not see much on trying to do a commuter train. I really think this important to the growing valley. I realize it is in the state's wheel house, but I 'm sure the borough's input would be important.
My name is AJ Hoffman and my family and I are avid users of the Old Glenn paved bike trail. First, thanks so much for providing such a great trail for the public to use. Second, I would like to offer some friendly suggestions on a few safety items I feel could enhance the ability of users to operate on the trail safely as well as provide them information regarding the local sites the user is taking in along the path. 1. A few informational Kiosk. This winter we used fat bikes and road the trail a bunch. The safety issue is moose. Once your on that trail your kind of stuck there, and an aggressive moose in the area could put a wrench in the good days plan. We were walking with our kids in a stroller when a moose ran at us. Luckily a truck saw us running and swerved and started beepin his horn. I thought, that was close. As we walked back we bumped into a guy and told him to be careful. He said the moose was hanging out in the area a lot over the winter. So my suggestion is a moose safety sign. What to do if charged, maybe even a warning sign of moose present in area that users could change to match trail conditions. I know the area to the west if the trail can hold a lot of mothers with fresh caves so it would be good in general to just to give users a heads up as to the habitat they are surrounded by. 2. The kiosk could be used to talk about the mat/kink river. Provide salmon information, talk about it being glacier feed, as well as mentioning the silt and safety when exploring close to the banks of the rivers. I know Eagle Scouts look for projects to do locally and I thought the kiosks would be a good one to suggest. Also maybe a basic map, where you are, how far to here, how far to there. I noticed atvs and side by sides use the side of the trail. This is ok and at least they are following the rules of no motorized vehicles, but it causes a bunch of debris like gravel to constantly be thrown over the path. This makes for dangerous travel on a bike.

[1] For comments submitted the online comment map, a location has been added to the comment by the project team when needed.

There are several trail heads that can be accessed near the bike path for people to explore. Lazy mountain, mat peak, jim lake just to name a few. Looking into making an atv path on the other side of the road where there is already a trail in use. Again, providing signage to help guide users on the do's and don'ts of the path/trail use. Pretty much take a dozen and make a semi flat usable trail for atvs. I am happy you guys are reaching out to the public for feed back. The only other addition I have is the serious lack of warning signals and safety walks to allow users on the east side of the road to safely gain access to the trail. I don't think we need anything crazy like a cat walk over the road, but maybe a few more warning lights or designated crossing zones where street access is available to allow for safe passage across the road. Children also use this trail so it would be beneficial for a "safe route to school" type of a program.
I would like to iterate once again for the need for public transportation! We spend so much on road improvements and all the safety concerns. It would sure be reduced by having an efficient and robust public transportation system. Instead of the borough spending so much on "Share a Ride, make the infrastructure and develop and real working transit system, starting from feeder routes to the commuter busses. Also it is about time that the people that own the AK RR TELL them that we need to have track time also. Between the borough and AKRR, we have not gotten any support to make a system work. Wait a minute....who owns these entities?
Separated pedestrian pathway from Sutton to Palmer has been indicated on Sutton community plan and the MAT-SU Borough LRTP and has been i.d. by the Trails and Recreation committee and the Tab board approved to be added to the STIP.
Mile 58 RD. is to dangerous for school buses to go up and needs to be fixed. i have submit to the CTIP numerous times. Safety issue.
Please connect the bike trail from the Colony Schools to Trunk Road.
Please connect the bike trail from the existing bike trail at Palmer Depot to the existing bike trail along the railroad tracks that ties in to Cope Industrial bike trail.
Please construct a new bike trail along Airport Road ROW from the existing bike trail along the Old Glen to the trail and open space near the Palmer Babb Arboretum.
I currently live on one of the 2 busiest residential streets, in our area, being Peck, the other is Tait. My children go to Fronteras Spanish Immersion Charter School and their new location in on Seward Meridian Pkwy. That makes 3 high traffic schools on one small street, that dead ends after the new school. I have heard for years, that SMP would be built out to go all of the way through. At first I was excited about the amount of traffic that would stop traveling on Peck. Now I'm concerned about the amount of traffic that the three schools will be creating for the small residential subdivision, that is nearby. Please act quickly on getting this section of road done.
Intersection of Bogard and Bogard extension needs to be fixed, stop light? The four way stop creates a steady stream of traffic that does not let cars to onto Bogard. Location: Bogard/Seldon Intersection.
lack of DOT right of way easements prevents continuation of bike path/pedestrian walkway to end of Spur Rd. junction with MSB Main St..
Add coloured hiking lanes to direct people off the street and move parking cars to center of road.
Consider a temporary fix on Mile 36-38 Glenn Highway to lessen the number of fatality and serious injury accidents until the highway expansion is completed. Some lighting, better striping, a few signs of warning would all help on this dark stretch of road with its many access points in and out that surprise unalert drivers when people suddenly turn into one of these driveways or streets. The road is bad in winters because of the darkness and in summer because of the heavier traffic and people turning into the park and the popular spot between Kepler Bradley Lakes where there is a business that offers canoes for rent.
This entire stretch of road desperately needs a center turn lane. Turning left onto PW without a stop light is nearly impossible, and turning left from PW causes numerous delays for drivers behind the turning vehicle. Location: Entire Length of the Palmer Wasilla Highway
The layout of Evergreen, from the Glenn to S Bailey St is dangerous and frustrating. The right hand lane should be a through lane all the way to the 4 way stop at Alaska St. There should be a center turn

lane all the way down to prevent congestion. Traffic is always backed up into the Glenn/Evergreen intersection when vehicles are turning left into the driveway by Dairy Queen. The current layout causes frequent dangerous lane changes and congestion through the center of town due to stopped vehicles in the left lane every few yards.
Funding the remaining portion of the Trunk Road Extension South project should be one of the top priorities of the MSB.
The map needs to show the new Seldon Road Extension to Beverly Lks Road.
Edgerton Parks Road needs either 8 foot shoulders or a seperated path for pedestrians and bicyles. With Government Peak Recreation Area becoming a significant destination there is increase vehicle and bike traffic on this very narrow road.
Need to complete the road connection between the two Tex-Al road segments to pull some of the local traffic off of the upper portions of Palmer Fishhook and Wasilla Fishhook.
Need to complete the road connection between Engstrom Road and Tex-Al Road to provide a number of large subdivisions access to Palmer Fishhook and Wasilla Fishhook. This would reduce pressure on the Engstrom Bogard intersection which is currently congested. MSB has a design for this road connection sitting on the shelf waiting for funding to complete ROW and construction phases.
Seldon Road Extension Phase II to Pittman needs to be a top priority for construction funding to move traffic off of Beverly Lakes Road.
Use part of existing ROW and extend Norman Ave west to Boyd Rd for faster access to Palmer-Fishhook. All residents down Soapstone and further north towards Sutton would have better access to Hatcher's Pass.
see connected comment-PLEASE!
As the community grows, the entrance road to the landfill, 49th State Street will exceed its ability to handle the traffic. The imminent build out of a Septage and Leachate facility on the landfill only compounds this issue. A connector from 49th State Street around the west side of the landfill property along the power line easement and then across westerly to Trunk Road would go a long way to ease congestion. This project should be considered in the next 5 years.
The road of Lakes Blvd has been deteriorating and in need of some major repairs. Big heaves and shoulder work.
Please add bike path here. This would extend the current path at the roundabout to Earl Drive (the road leading to the school). This is a dangerous section for walkers and cyclists. I have witnessed several near misses/accidents. Location: Bogard Road from Trunk Road to Earl Drive access to Finger Lake School.
Please include bike path in new road construction project. I believe this is included, but just want to add the comment.
Please consider widening the sidewalk pathway here for cyclists and walkers. This is a tricky/dangerous section to navigate as a cyclist. This would be a great connection between the intersection at the Glenn (where the good bike path ends) and the bike path starts again (closer to the airport). Location: East Arctic Avenue from New Glenn to near the Palmer Airport.
Please consider adding a bike path here. Would be a great connector between Palmer-Wasilla Highway and Bogard. Location: Along 49th State Street between Palmer Wasilla Highway and Colony School Drive.
Please complete the bike path from Colony Middle to Trunk Road. Then continue bike path along Bogard.
Adding a bike path along Fishhook to Hatcher Pass would offer opportunities to keep local cars off the road, especially in the busy summer months. This would connect people to the existing bike paths on Snowgoose Pond & Trunk road, both of which connect to Wasilla and Palmer (via Bogard and Palmer Wasilla Hwy).
Connecting Hollywood to KGB would provide an alternate East-West route from Wasilla to Big Lake. This would alleviate Traffic on both the Parks highway and KGB, as well as provide a safer 'out' in emergencies.
Since the punch through of Bogard and Seldon from Palmer to Meadowlakes, this intersection has become backed up and congested all hours of the day as I live less than 2 miles from it and have to travel through it daily. Location: Bogard/Seldon Intersection.
Fix what has been caused!! this intersection is a joke and needs to be redesigned and fixed, as traffic

is backed up for over a mile. Location: Bogard/Seldon Intersection.
Adding a bike path from the Glenn Highway to Edgerton Parks Rd would tie the Glenn hwy / Palmer north bike/foot traffic to Hatcher Pass picking up Snowgoose Rd which ties into Bogard Rd. It would also tie into the bike path along Trunk Rd which currently sees a lot of bike/foot traffic. In the 32 years I have lived on the Fishhook Rd I have seen a tremendous increase of vehicle traffic.With vehicle traffic comes an increase in bike and foot traffic. I am amazed no one has been hit! It gets a bit crazy on nice days.... Also there is a need for parking at Palmer-Fishhook and Trunk.. apparently DOT did not think this intersection would be a starting point to use the bike path!?
The MSB needs to assume road powers so they can fund projects with an areawide levy. Given the state budget, it is only a matter of time when the MSB will need to assume greater maintenance resonsibility for collector and arterial streets not on the national highway system. We could also control the road features better and begin to create complete streets where desired.
Need more arterial streets in this area to create alternative routing to the Parks Highway.
There are 4 or 5 roundabouts on Bogard that flow traffic efficiently. Why in the world, did they not put one here? I have seen cars backed up here over a half mile at times. That's crazy! Location: Bogard/Seldon Intersection.
4 lane roadway with a bike path. Sooner the better! Location: Seward Meridian Parkway
The signal lights are an improvement, but a well planned roundabout would improve traffic flow.
Quit putting off the upgrade to this highway. People are being killed, but still the move to a 4 lane road is years off, it ever. It need to be on the top of the list, and work need to start immediately, not at some future time. Location: Palmer Wasilla Highway.
The traffic lights back up traffic and slow the traffic flow. A round about is needed.
The railroad should be routed to the south around the city of Wasilla, not through it. Moving it outside the city would greatly improve the area for people that live here. the park on the lake could be enlarged and improved. Families would want to go there and not have to put up with the noise and potential danger of the passing cars.
A perfect place for a good round about. the signal light help, but still contribute to traffic back ups. Round abouts keep traffic moving.
This road needs to be 4 lane to support the traffic I see today. Location: Palmer Wasilla Highway
Please put the right turn lane back on KGB turning onto Clapp. Unfortunately, when they did the Clapp extension, they removed this lane. It is a hazard because people continuing up KGB now veer around those that are turning and go into the oncoming left turn lane.
I know this is for the Mat Su Valley, but a large portion of the population works in Anchorage. A Park 'n' Ride is nice, but perhaps a light rail from the Mat Su Valley to Anchorage going back and forth would be an excellent solution to traffic congestion.
This might be considered a good place for a new north south route. Extension and improvement of foothills then veer to the west of the lake to connect with Parks hwy. Location: Foothills Drive between KGB and the Parks Highway.
Roundabouts should only be used in subdivisions. They are extra hazards in a growing area with lots of tourists who must educate themselves as they approach. Large trucks have difficulty navigating them. People don't stop at stop signs but in rounds they don't stop for vehicles already in the round. Plan your trip to include the stop sign/light.
This is the worst roundabout I have experienced
Bike paths should be put on every busy road.
Add culvert to divert flood water South
Add speed bumbs on both side of intersection for safety of merging cars and crossing of boaters/swimmers to Y lake. Location: Talkeetna area
Plant grass to avoid cars driving off the road.
Very dangerous road with all the falling rocks on the highway. Spring time is extremely dangerous Location: Glenn Highway Long Lake.
Please add a right turn lane back in at Clapp Road, by eliminating it when they added the light and new intersection it has created a bottle neck for traffic when someone is turning off KGB to Clapp Road.
A separated pathway from Palmer to Sutton along the Glenn Hwy is needed. There has been a noticeable increase in bicycle traffic along the Glenn. Areas with narrow shoulders do not provide adequate space for sharing of transportation types.

The intersection of Engstrom and Bogart is very dangerous. Several accidents have occurred due to poor viability of the elevated traffic coming thru the area. There needs to be a redesign of this intersection.
Colour bike lane at lookout, do avoid parked cars on biking lane.
Add bike lane along Comsat rd
Add turn lane from North into Cubby's Location: Parks Highway and Talkeetna Spur Road Intersection
Bogard Road is one of the few major traffic roads that does not have a bike/walking path. There is one on the extension into Palmer. They even have one in the Kenny Lake area near Chitina, Willow, Huston, and Sutton all have bike paths and less than 1/10 the population around Bogard Road. This should have been done years ago and needs to be fixed NOW for the safety of our families that walk and bike for their health or to/from school. Walking or biking on this road is NOT healthy.
This was a HIGH priority project 10 years ago and has dropped off of the planning. This extension needs to be completed along with making all of Seward Merdian a 4-lane road for safety. There is too much traffic going around Bogard to Tate (through a small subdivision) to Seldon. This making Tate and the intersections at Seldon and Bodgard very hazardous.
This has been a bad intersection for years and since the Bogard Road extension into Palmer, it has become a hazardous joke. This needs to be fixed ASAP. Location: Bogard Seldon Intersection.
The speed limit prior to the TKA Public Library needs to be reduced in both directions of the TKA Spur Rd and it should also be a double line "no passing" zone. Thak you
The area is the Spur Rd. near the new Talkeetna Public Library. There needs to be a decrease in speed from 55 to 45 mph and there needs to be a no passing zone there because of people slowing down and turning into the library. Do not create any new roads in the Upper Valley unless there is a way to have adequate funds to maintain the roads. It is easier to get project development monies than it is to get operation and maintenance funds.
People who live along Comsat Rd. do not want a bike lane created. Cost too much money and it interferes with quality of life of residents of private property in the area.
The intersection of Trunk and Palmer Fishhook needs a parking area. Accessing the bike trail from this point is difficult, as there is nowhere to safely park.
We need Valley Mover to stop in the mornings in Palmer. Just one bus would be a good start. Driving to the P&R defeats the impetus for taking the bus. Please support Valley Mover to expand a route to Palmer.
We need a bike path along Palmer Fishhook to accommodate the bicycle traffic. There still needs to be a motorized path. If the motorized path is removed, the motorized traffic uses the area next to a bike path and ends up spraying gravel on the paved bike trail.
We need a designated off-road, motorized vehicle lane along the stretch from the Matanuska Bridge to the Butte. Motorized traffic is using the berm next to the paved bike path and spraying gravel all over the path, which make biking difficult and dangerous.
We need commuter rail to Anchorage. Most of us do not care if the train is slow (not high-speed). Anything is faster than sitting on the Glenn for hours waiting for an accident to clear. As for dealing with commuters once we get to Anchorage, we will figure that out.
The intersection of France Road and Palmer-Wasilla Highway is extremely dangerous. I have personally seen four accidents at this intersection since I have lived in the area for the past eight years and I know there have been others. There are school buses, high school students, heavy construction equipment and homeowners that all use the narrow and curvy France Road to access Palmer-Wasilla Highway. This intersection has many of the ingredients for a future fatality. Currently there is only one egress route out of this area. If there was a fire or other emergency in the area it is possible that people could be trapped in the area. There is a project on the LRTP to extend Hemmer Road south and connect this with a road leading from Pathways High School. This would allow much of the traffic to be routed to an intersection with traffic signals. This project needs to remain in the plan and funds should be approved to begin this project.
Do Not support a creation of bike land on Comsat Rd. which is off the Talkeetna spur road. Hundreds of trees will be cut down which will change the whole area. As a resident of Comsat and property owner, I do not want to see this happen. The borough usually does not consider environmental impacts. The

bike land will cause a commercialization of an area that is RESIDENTIAL. There are also socioeconomic impacts crazy as that sounds. Think things out.
This light backs up during peak travel times. at a minimum, adjust the light sequencing to account for this or come up with a method to eliminate this light and all others between here and the center of Wasilla. An alternative would be a highway route that bypasses the center of Wasilla.
W. Donna Marie needs to be paved or S. Viewport Way needs it's own paved extension to KGB. S. Viewport Way and W. Overview Dr are already paved and it's ridiculous to have to drive off pavement onto a wash-boarded dirt road and then back onto pavement.
Need a right turn lane here. Also, consider raising the speed limit on Clapp. Why isn't it 45mph?
Crossing the 3 bears traffic turning to/from KGB as a pedestrian or bike on the paved path is a death trap...or a long wait.
I would think extending this road and adding a controlled intersection at E Seldon Rd would take some of the pressure off the Seldon/Bogard intersection, as well as, Tait Dr. Location: Seward Meridian Parkway Extension
I am often backed up as far as N Chandelle Ct when heading west in the evening waiting to get through the four-way stop at Seldon and Bogard. I personally take Cottonwood Loop to E Alder to get around the bottleneck. I am sure it is not your intent to channel traffic this way, but it is a common occurrence.
Please fix this substandard section of road. It does not hold up under the traffic. There are no shoulders and the edges are crumbling in places so the road is slightly narrowed and dangerous for bike and foot traffic. This should be a priority ahead of channel more traffic onto this section.
This road in deteriorating under the increased traffic. Please complete the Seldon Extension Project.
The Nelson Road Bridge over Wasilla Creek has multiple structural deficiencies, does not meet the 100 yr. flood standards and should be replaced.
When the Trunk Road roundabout is blocked or shut down by the Troopers there is no access to the Hospital. There needs to be a secondary access road established to the Parks or Glenn Highway.
Palmer Fishhook needs either an 8-foot shoulder or separated pathway for pedestrians and bikers. There has been a large increase in ped and bike traffic along this highway as the residential development continues and people seek to recreate at the Government Peak Rec Area and Hatcher Pass. The improvement would benefit residents and tourism as well.
Felton Street needs to be extended from the Palmer HS Pool down to Palmer-Wasilla Highway to continue building out the local road network. This connection will help pull a substantial amount of traffic off of the Glenn Highway releaving congestion through Palmer .
Arctic Blvd needs a right turn lane at the Glenn Highway intersection to reduce traffic congestion that now backs up into the Alaska Way intersection.
Wasilla Fishhook from Seldon to Palmer Fishhook needs 8-foot shoulders. At a minimum, ADOT&PF should add additional shoulder fill to eliminate the sharp drop offs from the paved edge to ditch. You can see from tire tracks that drivers are going off the edge being pulled into the ditch.
This intersection is extremely congested and definitely needs to be re-designed. I live in the Cottonwood Loop subdivision and avoid having to go through here. A temporary solution could be to remove the stop signs for traffic travelling east and west, but keep the blinking yellow 'caution' light. Traffic flow from the south is much lower and tends to turn right. Location: Bogard Seldon Intersection.
This intersection is very dangerous during peak travel times and is a blind-spot for Bogard traffic in both directions. Location: Bogard Engstrom Intersection
This is not a current map. The new Bogard extension is not showing. A roundabout at Oscar/New Bogard/Palmer-Moose would be very helpful for traffic going in and out of this subdivision. Traffic traveling on new Bogard moves way too fast! Thank you Palmer PD for helping slow it down.
This road is below standard and the lack of shoulders is a hazard to the kids and adults who walk or bike on this stretch of road. The hill at snow goose should be cut down. The visibility at the intersection towards the swamp is appalling. Location: Palmer Fishhook Road
My concern is that once again the Borough has put out a temporary fix that it will leave in place on Seldon Road.
Safety First. Please consider North and South bound turn lanes for Cubby's Marketplace, Tesoro and Fire Department. *Widen Parks Highway thru this area

*Median Two Way Left Turn lane possible *Reduce Speed 45 mph With the Senior Center, Church, JR/SR High School, Grocery Store, Talkeetna Spur Road to Talkeetna, Hardware Store, Fire Station, Fuel Station/Truck Stop, Sandwich Shop, future bike/ped path and other businesses present and future in the area, local residents and visitors alike would be safer when traveling to and from these destinations.
The Glenn Hwy from the Bonnie Lake Road to the Puritan Creek pullout is extremely dangerous and should have been improved and realigned 10 years ago. Sharp curves, lack of shoulders, numerous rock falls, winter glaciering, poor visibility for moose crossing all add up to one of the most dangerous stretches of roadway in the State especially for the amount of traffic this roadway currently handles.
I would love to see a bike path extended at least to SMP, to hopefully meet one extended to that intersection on SMP.
With the new buildings going up here, Seward-Meridian Parkway will be more and more congested. For those of us who live in the neighborhood across Seward-Meridian, this poses a daily danger at high traffic times of the day.
In response to residents opposed to a Com Sat bike path - I agree that tree loss would be severe and bike use not high enough to warrant the scale of a bike path on the entire length of Com Sat Rd.. A compromise might be a bike path on first mile of Com Sat which would provide access to Tka Lakes park, Alascom housing neighborhood, and Chrisitansen Lake Rd. Bike path should be on Christiansen Lake Rd to access the Christiansen Lake park and access to the Old Lake Rd.trail systems etc
SERIOUS Concern for first responders etc-Borough maps show this road as open ingress/egress to the Gateway neighborhood south of college property. Mat-Su College has continued to block this road with large boulders to prohibit its use. Duchess and S Georgeson are the only roads to enter/exit this neighborhood-one MUST use the roundabout by the hospital regardless of direction. 2 years ago AST closed off roundabout for an investigation. Trooper said that I had to go up to PWH and come back down. I explained that I still needed to use the roundabout to get to my neighborhood. He said no because of this map, and many others apparently, show this road as open. Not true-the roundabout is the ONLY ingress/egress to the hospital. Solution-have the college remove boulders and open their gates to thru traffic, or put in a left turn lane on SB Trunk at Duchess. (Some cars are already crossing median on Trunk where there is no crossing-very dangerous!). Road was not built in accordance to plan!
The Smith Road - Maud road area is dangerous for individuals & families when going on walks & runs. The road is not wide enough for traffic and there is no pedestrian path. The borough should consider widening the road or at a least adding paved pedestrian paths.
Upgrade and paving of Burma Road, from Ayshire Blvd. to S. Big Lake Road, should be added to the mid-range project list. When the Knik Arm Crossing is completed, this will become a major transportation corridor from Anchorage to points north of Big Lake.
Please consider improved crossings for bikes/peds along the Old Glenn Hwy at Mat River Park, Valley Way, Clark Wolverine, Virginia, Smith Road, Maud Road
Greenstreet access to Bogard is just as dangerous as Engstrom; both roads coming onto Bogard have poor visibility when trying to turn Left onto Bogard.
Caribou is a main collector for lots of houses; in the morning and evening during peak traffic there are at lease 5-6 cars in line waiting to make a turn onto Bogard Rd. at a time. It gets dangerous when people start racing out and cut others off to make the turn; as well as there is not a turn lane to come off of Bogard onto Caribou - in the evening there are cars maneuvering and using the shoulders to go around the car waiting to turn-
The turn in and out of Matanuska Lakes is dangerous and needs a turn going both directions.
Needs a turn lane for traffic headed south on the Glenn and turning west onto the new Bogard.
Need larger parking area for Butte trailhead and/or roadside parking.
This 4 way stop gets traffic backed up in the evenings all the way to N Lazy Eight Ct and on some occasions all the way to N Cottonwood Loop/Departure Ct. Please Put in a Roundabout! Location: Bogard Seldon Intersection
The light was a great fast fix for the congestion here in the mornings before school starts and when

school ends to keep traffic somewhat flowing. I feel a round about would be in the best interest to keep the traffic flow moving - and Please look at opening up Seward Merdian - once that is open it will elevate some of the congestion/hazard on Tait
The access to/from the Baseball Fields is very dangerous. There is no turn lane to get off of KGB and there is no light/sign forcing to turn Right; The ball fields are busy every day of the week - Monday - Friday after work hours (rush time) till 9PM
Foothills is a main collector street for many homes; new subdivisions being added and congestion happens at the Foothills/KGB intersection. Also the Mail boxes right at the end of the road here - causes a bit of congestion/safety when you have multiple cars lined up stopping to get their mail. There are no turn lanes, no lights, etc.
Seldon Road - Beverly Lake Road to Pittman Road needs to be completed. Currently significant amounts of traffic are being routed through a subdivision.
There needs to be a bypass around Wasilla.
If the visitors center is built here, there will be a lot of large, slow vehicle traffic turning in and out of the site. Long and large turn lanes will be needed in each direction and possibly a light during summer months. Location: Between Mile 36 and 37 of the Glenn Highway.
Very dangerous intersection with blind spots and too much traffic for current infrastructure. Location: Bogard/Engstrom Intersection.
Need two lanes that go north thru the intersection and a new turn only lane to head east on Arctic.
Needs three lanes at intersection. One to turn north on Glenn, one to go straight onto the new Bogard, and to turn south onto the Glenn.
This intersection needs a traffic signal and crosswalks. Arctic is becoming more difficult to cross, particularly during school and business "rush hours". Also with the nearby skateboard park and youth center (the Yak) there are many kids running around this area and across traffic, particularly during after school hours.
Glenn needs a turn lane, both north and south for Marsh Road.
Glenn needs a turn lane, both north and south for this subdivision road.
I regularly see near misses at this intersection. The offset of the two intersections entering the Glenn really adds to the confusion of traffic flow.
This section of the Glenn Hwy is horrific. I travel this road for work on a regular basis and feel that I put my life in jeopardy with each trip. Steep cliffs, no shoulder, lack of or poor guard rails, falling rocks and debris on roadway, curves, single lane, lack of pullovers and heavy semi truck use. Then summer brings large amounts of RV's not familiar with the road conditions, such as rocks in the road way, tired and distracted and surely scared due to conditions. Please fix this major traffic corridor before someone get hurt. Location: Various locations on the Glenn Highway east of Sutton.
This section of road is unsafe for our children. There are four schools in this small area; Larson, Teeland, Mat-Su Career Tech, Fronteris with no bike trails on Seldon, not a school cross walk to be found or crossing guard, school zones without flashing lights or reduced speed limits. Kids and families in the area walk and ride bikes on the roadway shoulder due to NO BIKE TRAILS. Its crazy when our kids can't cross the street safely due to the large amount of increased traffic. Please add a bike trail along Seldon and crosswalks and school zones at all school road entrances now!
Seldon grid lock!! Add a round about or 4 way light to keep up with increased traffic. Bike trails, cross walks, safe passage for ATV's and children frequenting the store and Millers is seriously needed. Location: Bogard/Seldon Intersection.
AK DOT erosion study indicated parts of S Old Glenn and S Knik River Rd are at risk due to erosion. MSB needs to obtain more ROW along the narrow stretches for emergency repair and travel.
There's a lot of traffic that flows from previous roundabouts. This steady flow causes massive backups
There is a lot of road noise effecting the Bald Eagles in the subdivision off of Walhalla Street, above this section of the Old Glenn Highway, right in front of my house. A berm or fence along this roadway would stop the noise from disturbing the Bald Eagles. I live off Walhalla Street and I can tell you I have personally witnessed the stress these Bald Eagles are suffering. The look on their majestic faces and clenched beaks tells me they're suffering. I also believe they're developing Irritable Bowel Syndrome (IBS) due to the stress of high automotive noise levels. How do I know? Because I've seen a few of them clench up in mid flight and poop like dinosaurs. I'm no doctor but that screams IBS to me and no symbol of American hope and freedom should suffer that fate. Let's come up with a solution please,

these Bald Eagles deserve to live peacefully, because this is America.
Add bike path between roundabout and Colony Middle School.
This is a very dangerous intersection(s). This should be addressed immediately. Sight distance is a problem. The offset intersection is problematic. Walkers and cyclists cross here. Please act before a deadly accident occurs. Location: Bogard/Engstrom/Green Fores Street Intersection.
Adding a bike path to Bogard Road between the Trunk Rd roundabout and the Seldon intersection is a project that should be on the short term list. This is a high density population area and having a bike path for residents is long overdue. Adding a bike path makes sense for safety, health and quality of life for the Valley community.
Great location for a mini roundabout.
A roundabout would be very helpful in this spot to keep traffic flowing and prevent the stop and go lines of cars that build up here during busy parts of the day.
Dangerous intersection. Align Green Forest with Engstrom. Keep with the roundabout concept along Bogard - No signalized intersections or flashing lights as a "quick fix".
This first traffic signal is a disaster during peak times. Please continue with a Wasilla bypass.
This first traffic signal is a disaster during peak times. Please continue with a Wasilla bypass.
Build the bridge.
Use one signal and line up Midtown and Golden Hills. Bight the bullet and buy the needed ROW while also using the frontage road that is there.
Do not allow driveway access along the arterial sections of Bogard. We do not need another P-W.
Stop allowing subdivisions like this without the developer doing a traffic impact analysis and force them to take responsibility for the traffic they create. Zoning in the core area is needed!
This is the silliest intersection in the Valley. What was DOT thinking when they did this? Align Midtown Dr and Golden Hills and use one signal. Take advantage of the frontage road you already have. You have to buy some ROW. So what? Do it right.
The borough needs zoning regulations.
This section of the Glenn is terrible. I didn't see it on any of the plans for improvement. Hopefully it's there...
A right turn lane is needed on KGB for Clapp St turns. South bound drivers are dangerously swerving around slowing, turning autos and into oncoming traffic.
This is a blind, narrow, and dangerous corner. Please consider restricting the vegetation to allow for better visibility. It also needs widening. Residents in this area fear for our lives, as well as those of our children and pets as we get out to walk and bicycle.
Since people notoriously travel 5 to 10 miles over a posted speed limit, please keep the 35 MPR speed limit and continue to monitor and ticket. Kudos to Wasilla Police Department for their efforts in this area.
This intersection continues to get worse, as more and more new houses are constructed. The free-flow of traffic on Bogard leaves no gaps, making a left turn very difficult during prime commuting hours. It is an interesting way to start off your day with an adrenaline rush as you try to beat the west bound traffic coming over the hill which is just enough to obscure traffic and merge into the east bound lane. I know there are problems with land acquisition, but we have to figure something out to relieve the stress on this intersection. It is only a matter of time before a horrid accident occurs here. Location: Bogard Engstrom Intersection.
This road would be greatly improved by a sidewalk separated from the road by a median for added safety. The current road is narrow, with no shoulder other than an ATV trail. Vehicles traveling along Foothills have low visibility due to the rolling terrain and often travel at excessive speeds, putting pedestrians and cyclists at high risk. A sidewalk would allow residents to safely walk to their mailboxes, nearby a drive-thru restaurant and stores, as well as safer access to the walk/bike path along KGB. In doing so, it would help to reduce automobile traffic while helping to make Wasilla a more walkable community.
Please complete this project to connect Seward Meridian through to these schools. There is too much traffic coming into these schools from the single intersection.
Please change this intersection to allow a better flow of traffic off of Engstrom on to Bogard. A left turn off of Engstrom is dangerous, and it also gets very backed up encouraging dangerous behavior. This will only get worse as many new houses are being built near Wolf Lake. Additionally another outlet of traffic, either to Trunk Road or Wasilla Fishhook should be built to provide access to these

neighborhoods. Thanks.
A connection from this road to Wasilla Fishhook would relieve a lot of congestion on Engstrom.
There needs to be another access out of these subdivisions aside from Engstrom and Pamela (which isn't central enough to be used as often). Engstrom's road conditions are suffering from the amount of traffic all of the new-builds are creating. And the traffic is terrible for pedestrians and bikers. A bike path would solve the pedestrian safety problem, I suppose.
This intersection should be top priority. There are times I've waited over 10 min. just to be able to make a left turn. Location: Bogard Engstrom Intersection.
Please put in a round-a-bout. The backup is driving me crazy. Location: Seldon - Bogard Intersection.
Lake Street needs to be paved for dust control!!! The extensive traffic created by Carter Park and the Lake Lucille Boat Launch causes extensive dust, which is difficult for the City to adequately control within this primarily residential area. There are health concerns for the residents and users of these facilities.
I would like to iterate once again for the need for public transportation! We spend so much on road improvements and all the safety concerns. It would sure be reduced by having an efficient and robust public transportation system. Instead of the borough spending so much on "Share a Ride, make the infrastructure and develop and real working transit system, starting from feeder routes to the commuter busses. Also it is about time that the people that own the AK RR TELL them that we need to have track time also. Between the borough and AKRR, we have not gotten any support to make a system work. Wait a minute....who owns these entities?
FCP Goal 3) states: "**Site future schools at least 1/4 mile away from major roads**, in order to avoid creation of school speed zones and to allow children to walk to school" Some schools (ie: Shaw elementary) were specifically planned that no children should walk to school and all children must ride a bus. LRTP page 47, Figure 11, shows how the existing roadway system can perform in 2035. Figure 11, shows **Tex-Al Drive** as connecting Wasilla Fishhook Road to Palmer Fishhook Road, but Tex Al does not connect the two. The LRTP should be revised to show the gap, and revise the LOS grid as necessary. The LRTP notes the MSB Comprehensive Plan Page 10, should include a section that **acknowledges the FCP and any other Assembly approved community comprehensive plans,** as these plans maybe different than the over all MSB plan. FHCC request the FCP Transportation Goal 2) Strategy to **Extend New Hope Street** be included in the LRTP Roadway Recommendations, as this connection is level and more easily built than the Tex Al Drive connection. LRTP page 33 and 34 shows the existing separated paths. FCP on Page 28, Goal 1) bullitt points 3 and 5, ask for additional road side trails. Please include proposed **separated road side trails/bike paths** in the LRTP, especially along Wasilla-Fishhook and Palmer-Fishhook Roads. We understand that a separated path along Wasilla Fishhook will be difficult to do bejimcause of easement issues but the FFCC would like it stated in the LRTP plan.
Hello. My name is jim Kichak and I have lived and worked in the Palmer area for the past thirty-one years. About two years ago I started thinking about what improvements might be made to area- wide mass transit. I thought of Alaska Railroad service trucks that have special train –type wheels that allow these trucks to operate on roads as other vehicles do, but then these vehicles (trucks) also have a separate set of train wheels that can be lowered which allows these vehicles to also ride on train tracks. Perhaps you have also seen these vehicles. I then did some checking via the internet to discover that vehicles that are basically buses with this

same ability (called dual-mode vehicles) were experimented with in Hokkaido, Japan for several years. You can read about this (experiment?) on line. This experiment ended in 2008 for unspecified reasons.

My vision for improve mass-transit capabilities in the Mat-Su would include a fleet of such dual-purpose vehicles. These vehicles would basically be buses that could travel specified routes throughout the Valley traveling on borough roads as other vehicles do. But at specified locations these dual-purpose vehicles would then engage the train rails to ferry passengers via existing rails to various off-ramps throughout the existing rail system in Anchorage.

These vehicles could then drop-off their passengers along many specific bus routes throughout Anchorage. This would be a morning service that would operate in reverse in the afternoons—picking-up many of these same passengers and retuning them to the Valley in the afternoon (or early evening).

This type of mass-transit would be much less costly than a separate commuter rail service, not to mention the cost reduction of constant resurfacing of the Glenn Highway from studded tire damage.

Whatever problems ended the Hokkaido Dual-Purpose project may not plague efforts in Alaska.. Improved technology and all-wheel drive dual-purpose vehicles may enable such vehicles (maybe even zero emission electric powered vehicles) to be a success in our particular environment.

I'm fairly confident that someone such as Elon Musk (Tesla Motors, Space-X) or similar engineering expertise could solve whatever technical problems may exist with such a proposition.

Thank you for the opportunity to share my vision with you.

1. P.1, Legal Requirements, last sentence. "This LRTP must also be consistent with the transportation sections of adopted Community Comprehensive Plans. This is a very weak statement. Was this done? Did someone actually read the transportation sections of all adopted community (and city) comprehensive plans and ensure consistency with the draft LRTP 2035? Compare the draft 2035 statement with the section 1.4 in the 2007 LRTP, which goes into much greater detail on the relationship between the LRTP and the MSB and city/community comprehensive plans including an assurance that states, " The transportation element of the community plans have been considered and incorporated in the development of this Borough-wide transportation plan." Someone must ensure this has occurred before the final draft goes to the Assembly for approval. The argument that there has to be a cut-off time for community plans to be considered in this 2035 LRTP is largely invalid, as we're still incorporating comments to the first public draft. The cut-off time for consideration of city/community comprehensive plans should be just prior to the final draft going to the MSB Assembly. This is a valid concern, because the question of whether the recently adopted City of Houston's Comprehensive Plan, with an extensive transportation element, has been considered has been asked twice without any firm assurance that it was considered.

2. P. 37, Organizing Development to Improve Travel. The statement is made that "Throughout the LRTP update process, many people expressed an interest in having more, higher density mixed use areas in MSB." This statement needs to be quantified with justifying documentation. How many people is many people? How was this desire for higher density development expressed? Is this statement justified with any degree of statistical reliability? I doubt the statement's validity amongst all current MSB residents.

3. P. 41, RSAs. Check the AS 29.25.210 (b) (1) cite for how MSB may acquire area-wide road powers. I think this may be incorrect.

4. P. 35, Other Modes of Transportation. The LRTP is supposed to address all modes of transportation, not just auto/truck, transit and non-motorized alternative means. Air, Rail and Marine/Waterborne transportation are only mentioned briefly in passing and are afforded only a short paragraph or three each, all lumped together on one page (P.35) in the main body of LRTP 2035. There is a lot of good and important information on these modes of transportation hidden in Appendix A. Brevity can be a good thing, but the best interests of potential LRTP 2035 readers/users would be better met if the Air, Rail and Marine/Waterborne information in Appendix A is brought forward and used to expand these sections in the main body of the plan. Most readers/users are likely to not consume this information otherwise.

Pg. 28 – Summaries of major ideas – trails…to all inclusive

Pg. 62 – A regional trail map "active users" kind of unclear for specific users

Pg. 36 – Parking issues – Parking at the edge of the road. I found to be a bigger problem is you actually have pull out – too much snow.

Pg. 42 – RSAs – Arterials service the whole boroughs and the RSAs service certain areas. Make it sound like everything is going smoothly – when there are problems. More rural areas don't have the money and the ones in the core area do have the money.

Wrong site on page 41 Toad Service Areas, paragraph 1, last line AS 29.25.210(b)(1)

Pg. 1 last sentence – very weak than the 2007 plan (the statement in 2007 was a definitive statement) would like a definitive statement like that in this plan. The LRTP needs to meet with the Comprehensive Plans.

Pg. 11 – Strategy: Create Transit Supportive Development – Line 2: "The MSB should pursue transit-supportive land uses within a quarter (1/4)-mile radius o either side of the identified mainline…" How would you do that and what do you mean by that?

Pg. 14 Strategy: Expand Vanpools Program – What needs to be done to change why they cannot start and end within the MSB? Would like more information

Pg. 15 Strategy: Develop Park and Ride Facilities – Are we using density information in conjunction with suggested information or are these sites from CC suggestions? Do we encourage or do we need to have legislation?

Pg. 16 Bike to work and school day Initiatives – not everyone can do this and it is not safe with some of the distances. Is there legislation that requires that when a road is put in a bike trail is also? Looks as though the borough is building them when they can; it needs to be done in subdivision law.

How do we incorporate the ability to add crosswalks and road use for school/new school construction?

Is there funding for safe routes to school? See page 55 – Table 3. Recurring Programs.

1. Assure that the 2017 transportation element of the 2017 City's Comprehensive Plan has been considered and incorporated in the 2035 LRTP, suggest using language as adopted in the 2007 LRTP section 1.4; and
2. Continue to support MSB and south-central Alaska economic development by continuing to support the completion of the Port MacKenzie rail extension; and
3. After funding is secured to complete the Port MacKenzie rail extension, in cooperation with AK DOT&PF, conduct an engineering reconnaissance study to identify the most suitable transportation corridor and then construct a Port to Parks freight highway, built to federal highway standards; and
4. Consider alternate crossings over the Little Susitna River in addition the single Little Susitna

Parks Highway Bridge. Multiple crossings of the Little Susitna River would provide alternative routs to enhance public safety and promote connectivity, particularly if the sole crossing is blocked due to natural or man-made causes; and

5. Revisit the LRTP periodically to review the Knik Arm Crossing Project. The City continues to support this project. The Knik Arm Bridge will have significant future impacts on traffic volumes experiences by the City and MSB. Remove the assumption that the Knik Arm Crossing will not be built by 2035. (MSB 2035 LRTP, Chapter 6, Roadway Recommendations).

Attachment C: Public Involvement Plan

Matanuska-Susitna Borough
Long Range Transportation Plan

Community Participation Plan – Update

Prepared for:
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December 2015

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Figures and Tables

Acronyms List	
ADOT&PF	Alaska Department of Transportation & Public Facilities
CPP	Community Participation Plan
LRTP	Long Range Transportation Plan
MSB	Matanuska-Susitna Borough
RSA	Road Service Area
TAB	Transportation Advisory Board
TAC	Technical Advisory Committee

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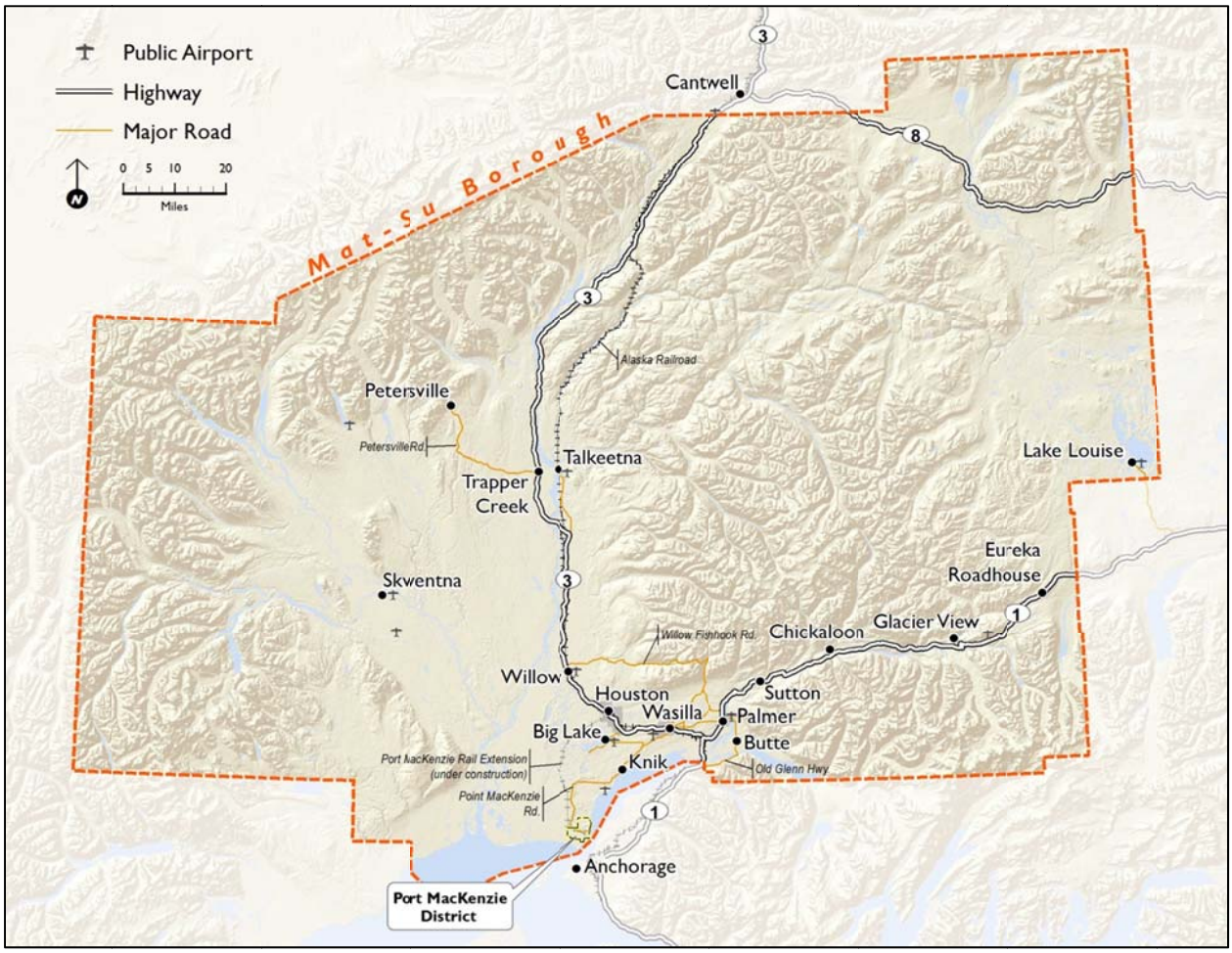
OVERVIEW

The purpose of the MSB 2035 LRTP Update is to set policy direction, address system-level needs for all modes of transportation, communicate issues, and prioritize solutions. The LRTP guides area and community transportation planning processes, which identify and prioritize local solutions and identify resources required to implement those solutions.

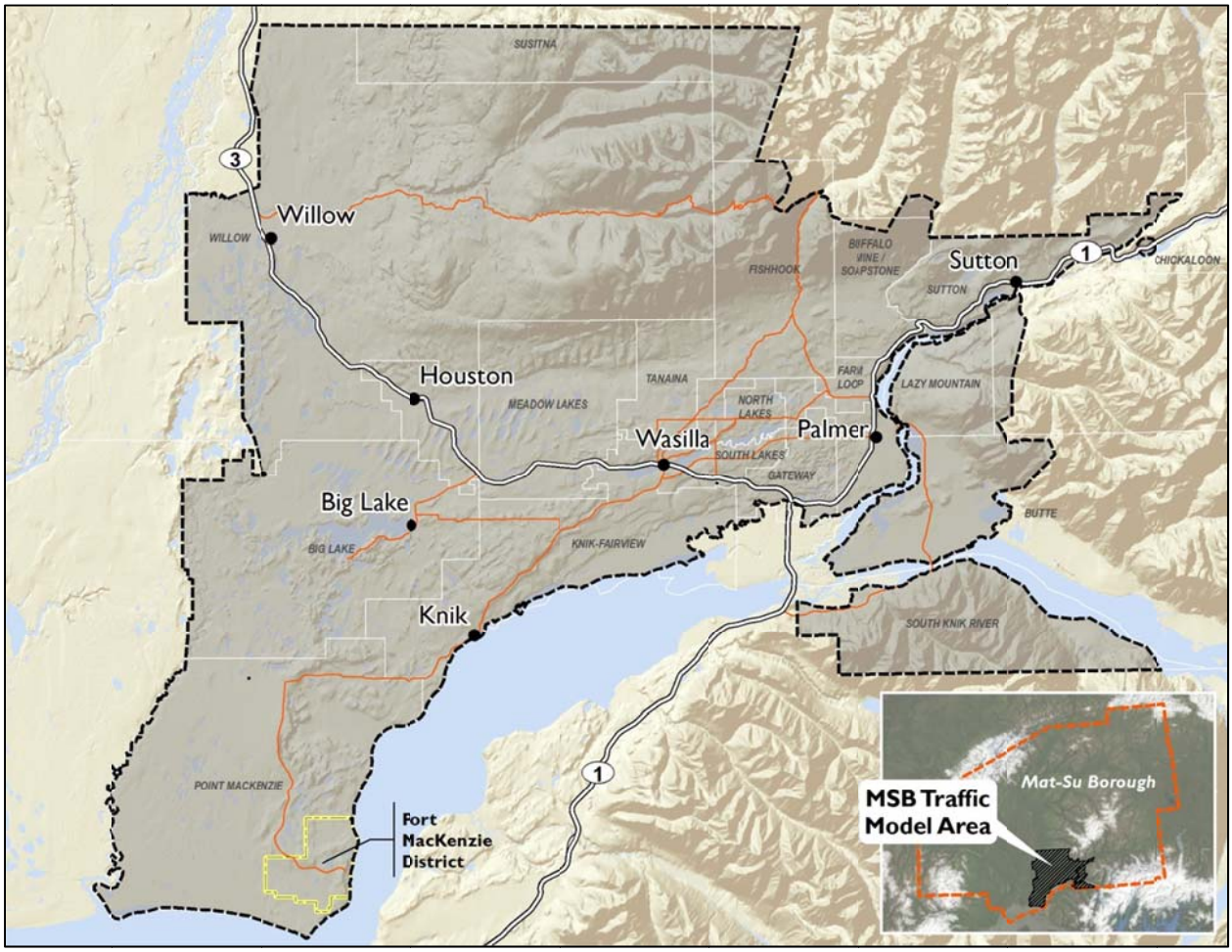
The intent of the Matanuska-Susitna Borough (MSB) 2035 Long Range Transportation Plan (LRTP) Update is for the MSB, in partnership with the Alaska Department of Transportation & Public Facilities (ADOT&PF), to identify transportation improvements that will increase access and mobility, reduce congestion, improve safety, and foster commerce in and around the MSB. The LRTP Study Area includes the entire MSB (see Figure 1) and will address all modes of travel. The last LRTP for the MSB was completed in 2007 and made project recommendations through 2025. This LRTP Update will guide future transportation improvements over the next 20 years to 2035.

Figure 1: MSB LRTP Study Area



The MSB continues to be the fastest-growing area in Alaska. New residential and commercial developments in the community are the primary drivers of the continued population growth. The result of this growth is an increase in roadway traffic, congestion, and safety conflicts. Community participation is a critical element in planning the necessary transportation improvements to address these issues. Most of this growth and development is occurring in the MSB Core Area, along Knik Goose Bay Road, and in the Big Lake/Meadow Lakes areas. As a result, for traffic modeling purposes, the LRTP will concentrate on the areas identified in Figure 2.

Figure 2: MSB LRTP Traffic Modeling Area



The MSB LRTP stakeholders include MSB residents, MSB officials, local neighborhood groups, businesses, Road Service Areas, the aviation community, local governments and boards, ADOT&PF, the Alaska Railroad, the transportation industry, Native Corporations, Village Councils, Native organizations, and other concerned individuals. The MSB 2035 LRTP Update's Community Participation Plan (CPP) provides guidance for outreach activities with these various stakeholder groups and identifies how and when community involvement tools will be used. Through community outreach activities, MSB residents and stakeholders will be involved in the planning process and will be informed of potential

transportation improvement projects. Community views and values will be reflected back to the project team for inclusion in the LRTP. The community participation process will help balance the results of analysis with public input to formulate recommendations and solutions.

Community involvement will inform participants about the transportation challenges to be addressed, the results of the analyses, and the trade-offs of potential short- and long-term solutions. The inclusion of public comments and opinions in development of technical solutions can help solve problems and respond to the expressed needs and concerns of the community. The public process will invite and encourage contribution to the technical and general planning work, and share with the public how input affected the outcomes.

COMMUNITY PARTICIPATION GOALS

Information sharing and soliciting input is the intent of any public process. The participation tools discussed in the following sections are designed to meet the following MSB 2035 LRTP Update community participation goals:

- Communicate the project's planning and development intent;
- Involve a wide spectrum of stakeholders; and,
- Facilitate communication and understanding among all project participants.

COMMUNITY PARTICIPATION PLAN[1]

It is important to be inclusive of all stakeholders and to conduct successful community outreach to achieve balance and ensure the information gathered is representative of the community at-large; each stakeholder brings a different perspective and level of understanding of the project's goals, project context, and perception of the LRTP update. Because of the number and diversity of stakeholders, the community participation plan, by design, will bring a wide spectrum of voices, interests, and input to the process; will ensure that those affected by the project are heard; and will provide an opportunity for their concerns to be considered in the in the development of the LRTP. It is important for the public and stakeholders to understand that this project is an exploration of potentially feasible transportation improvements and potential future work, and not a design project or the creation of an environmental impact statement.

The MSB 2035 LRTP Update process includes a variety of public participation tools to inform the public, gather public input, and involve key decision-makers in the planning process. Tools to meet the different outreach needs include public meetings, targeted workshops, a project website, and online open houses. Presentations will be given to the MSB Transportation Advisory Board (TAB); MSB Aviation

[1] This plan was updated in December 2015 to incorporate community participation activities associated with Task 5: Alternative Land Use. Some of the meetings identified in this CPP have already occurred in 2014 as part of the initial efforts to identify roadway needs.

Advisory Board; City Councils of Houston, Palmer, and Wasilla; the MSB Planning Commission; and the MSB Assembly.

Community meetings will be used to gather public input from the Glenn Highway, Upper Susitna, and Core Area residents of the MSB. Stakeholder comments, recommendations, concerns, and goals will be documented for inclusion in the LRTP. Community participation activities will help foster:

- Clarification and understanding of the LRTP's purpose;
- Engagement of the public, MSB advisory boards and committees, community councils, and local and state agencies; and
- Understanding of the project goals among local and state agencies.

Community Participation Tools

The following community participation tools will be used to relay project information to stakeholders and to solicit their input, as well as to document the exchange of information:

Public Meetings

The LRTP's open house style public meetings will provide a forum to discuss the project and solicit comments or feedback from the public. These meetings will introduce the project to the community, seek input on transportation needs, discuss potential solutions, and solicit public input. The first round of meetings will be held in Sutton, Big Lake, and Wasilla (to gather input from a wide representation of MSB residents (see Implementation Schedule for details).

Upon availability of the Draft LRTP (all modes of transportation), another public meeting will be held. One meeting will be held in Wasilla and will include a higher level of advertisement than the initial public meetings, both for the actual meeting and for its associated online public meeting. Each set of meetings will be held within a 45-day public comment period and have a concurrent 45-day online open house established as an additional means of obtaining public comment. Other meeting locations will be identified at a later time.

Residents participating in or attending public meetings should expect to receive project information and the opportunity to comment on the development of the MSB 2035 LRTP Update. Meetings will be organized and held at community centers or other appropriate venues to accommodate parties interested in or affected by the update. Public meetings are typically 2 to 3 hours and allow for information sharing in addition to comment submittal and one-on-one interaction with the public and agencies to foster a sense of community input throughout the MSB 2035 LRTP Update process.

Meetings will include handouts, display posters, a presentation, and a facilitated question-and-answer session. A note taker will also be present to capture key issues or concerns for inclusion in the planning process.

Website

A project website provides easy-to-understand project updates and allows the public to submit comments. All work products and the final MSB 2035 LRTP Update will be posted on the project website, and the website will be updated by the MSB as needed. The website is accessible at http://www.msblrtp2035.com/.

Alternative Land Use Workshop

HDR will organize and facilitate one 3-hour workshop with community representatives. The goal of the Alternative Land Use workshop is to educate attendees about alternative modes of transportation, provide information regarding the context of future transportation decisions such as demographic changes and funding, and the relationship of transportation to land use and connectivity. This workshop will also allow attendees to provide input in the alternatives developed.

The workshop is anticipated to have a maximum attendance of 45 people including representatives from the MSB Transportation Advisory Board (TAB). Email invitations will be sent to the people who were invited to the afternoon Road Service Area/Business Workshop (which was held in July 2014) plus the Planning Commission, the Platting Board, and representatives from each incorporated city in the MSB. Meeting invitations will be sent by MSB via email as well as one reminder email.

Alternative Land Use On-line Open House & MSB Alternative Land Use Presentation

The Online Open House is a web-based tool that takes an in-person public meeting and transfers it to an online forum accessible 24 hours a day to any stakeholder with internet access. An online open house has the same general format as a public open house, with the opportunity to be "live" the entire 45-day public comment period associated with the meetings. The online open house allows users to view PowerPoint presentations and make comments that can be added to the public record. The meeting materials will be based on those used in the Alternative Land Use Workshop.

Benefits of an online open house include an increased diversity of the project's audience and the complete removal of time and travel barriers—enabling potential participants to attend a meeting virtually where, when, and for however long they choose. With the growing popularity of web-based information sharing and social media, this tool capitalizes on the trend of using the internet as a primary source of communication and fact finding.

To ensure the greatest possible community participation, online open houses will be available on the web concurrent with the MSB 2035 LRTP Update public meetings, and will remain available on the website for 45 days. Online open house visitors will have access to the same meeting materials used at the public meetings. Meeting advertisements for the online open house will consist of four newspaper advertisements that will be placed in the Mat-Su Valley Frontiersman, a radio PSA, an announcement on the MSB website, an announcement on the MSB Facebook page, and an email sent to the project mailing list.

Transit Workshop

The 2-hour transit workshop is intended to provide participants an opportunity to learn about the history of transit in the MSB and for transit providers to share their vision and future plans for transit by 2035. A maximum of 10 people will be invited to the workshop to be held at the MSB offices. Members of the TAC will be invited to participate. The MSB will be responsible for advertising of the meeting. The meeting will have a written summary that will discuss the concepts developed at the meeting. HDR will invite the meeting participants and will prepare a summary report to document the input received at the workshop.

Alternative Analysis/Results Workshop

One 3-hour workshop with community representatives will be organized to review the Alternatives (potential projects, policies, and programs) developed as part of the Alternative Land Use workshop. Email invitations will be sent to the invitees of the Alternative Land Use Workshop. The Results workshop will consist of a presentation, an exercise, and a question/answer period. The purpose of the exercise will be to solicit input on the alternatives and proposed evaluation. At the meeting, the alternatives will be presented along with information about how each element scored in terms of number of goals directly supported, mobility, and feasibility. The exercise will determine the Working Group score. HDR will prepare a workshop summary report to document the input received from the Alternative Analysis/Results workshop.

Community Participation Summary

A Community Participation Summary Report will be prepared that summarizes the comments and issues raised by the public and describes the outreach activities conducted throughout the MSB 2035 LRTP Update process. The summary will be updated after each round of public meetings/online open houses/workshops.

Road Service Area, Business and Community Council Workshops

HDR will organize and facilitate two 2-hour workshops with representatives from the Road Service Areas (RSAs), local businesses, and Community Councils. Participants will have the option to attend either a morning or an afternoon session. HDR will develop an initial list of invitees, including representatives from local governments, coordinate the list with the MSB, and prepare a draft Workshop format and agenda for review and approval by the Technical Advisory Committee (TAC). HDR will invite the meeting participants and will prepare a summary report to document the input received at the workshops.

Additional Community Participation Activities

HDR will provide one introductory briefing of the project to each of the following:

- MSB TAB
- MSB Aviation Advisory Board
- City Councils of Houston, Palmer, and Wasilla
- MSB Planning Commission
- MSB Assembly

Additional presentations to the TAB, Planning Commission, and Assembly will occur throughout the project as needed.

Personnel responsible for the successful implementation of this CPP are identified in Table 1, and the members of the TAC are identified in Table 2.

Table 1: MSB 2035 LRTP Update Community Participation Staff

Name	Role	Company	Phone	E-mail
Lauren Driscoll	MSB Project Manager	MSB	907-745-9855	Lauren.driscoll@matsugov.us
Jessica Smith	MSB Transportation Planner	MSB	907-861-8514	Jessica.smith@matsugov.us
Murph O'Brien	HDR Project Manager	HDR	907-644-2138	Murph.Obrien@hdrinc.com
Laurie Cummings	Deputy Project Manager	HDR	907-644-2065	Laurie.Cummings@hdrinc.com
Tom Brigham	Senior Transportation Planner	HDR	406-532-2211	Tom.Brigham@hdrinc.com
Allison Biastock	Community Participation Lead	HDR	907-644-2167	Allison.Biastock@hdrinc.com
Summer Hudson	Community Participation Support	HDR	907-644-2157	Summer.Hudson@hdrinc.com

Table 2: MSB 2035 LRTP Update Technical Advisory Committee

Name	Role	Agency
Lauren Driscoll	MSB Project Manager	MSB
Brad Sworts	MSB Transportation Planner	MSB
Allen Kemplen	ADOT&PF MSB Area Planner	ADOT&PF
David Post	ADOT&PF MSB Area Planner	ADOT&PF

Implementation Schedule

The recommended Community Participation Schedule is outlined in Table 3. This information will be updated on the website in case of changes in dates and/or venues.

Table 3: MSB 2035 LRTP Update Implementation

Target Implementation Date	Recommended Community Participation Activity	Responsible Party
June 2014	Launch MSB 2014 LRTP Update website	MSB and HDR
	TAB Meeting	
	Aviation Advisory Board Meeting	
	Finalize CPP	HDR

Target Implementation Date	Recommended Community Participation Activity	Responsible Party
July 2014	**Community Meeting #1 – Sutton** Sutton Library July 16, 2014 6:00-8:00pm	MSB and HDR
	Community Meeting #2 – Big Lake Faith Bible Fellowship Church July 17, 2014 6:00-8:00pm	
	Community Meeting #3 – Wasilla Station 61 July 23, 2014 6:00-8:00pm	
	RSA/Local Business/Community Council Workshops Station 61 Session #1 - July 23, 2014 9:30-11:30am Session #2 - July 23, 2014 1:30-3:30pm	
	TAB Meeting	
	Online Open House #1	HDR
April 2016	Alternative Land Use Workshop	MSB and HDR
April 2016	Transit Workshop	MSB and HDR
June 2016	Alternative Analysis Workshop	MSB and HDR
August 2016	TAB Meeting	MSB and HDR
August 2016	Aviation Advisory Board	MSB
September 2016	Joint MSB Planning Commission/Assembly Meeting	MSB and HDR
October 2016	Community Meeting #4 – Wasilla	MSB and HDR
	Community Meeting #5 - tbd	MSB and HDR
	Community Meeting #6 - tbd	MSB and HDR
	Online Open House #2	HDR
October 2016	Additional presentations	MSB
November 2016	MSB Planning Commission Meeting	MSB and HDR
December 2016	MSB Assembly Meeting	MSB and HDR

CONCLUSION

This CPP is a guide to community and stakeholder involvement for the MSB 2035 LRTP Update. Community and stakeholder involvement is a dynamic process. As such, flexibility will be maintained to address unanticipated items or issues. Any changes to the schedule will be posted on the website to ensure that community members and stakeholders are apprised as early as possible to accommodate their schedules.