

Chapter

5

MTP 2040

LINK - CONNECT - MOVE

Looking to
the Future

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

Chapter

5

Demographics

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

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

The 2040 MTP relies on data from a travel demand model that uses the base year of 2013 and a future year of 2040. The base year

2013 was the most recent year for which the model data has been validated. Population, household, and employment information is displayed in Table 5-1, Table 5-2, and Table 5-3 respectively.

Table 5-1 Regional Population

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

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

Table 5-2 Regional Households

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

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

Table 5-3 Regional Employment

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

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



Travel Model

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

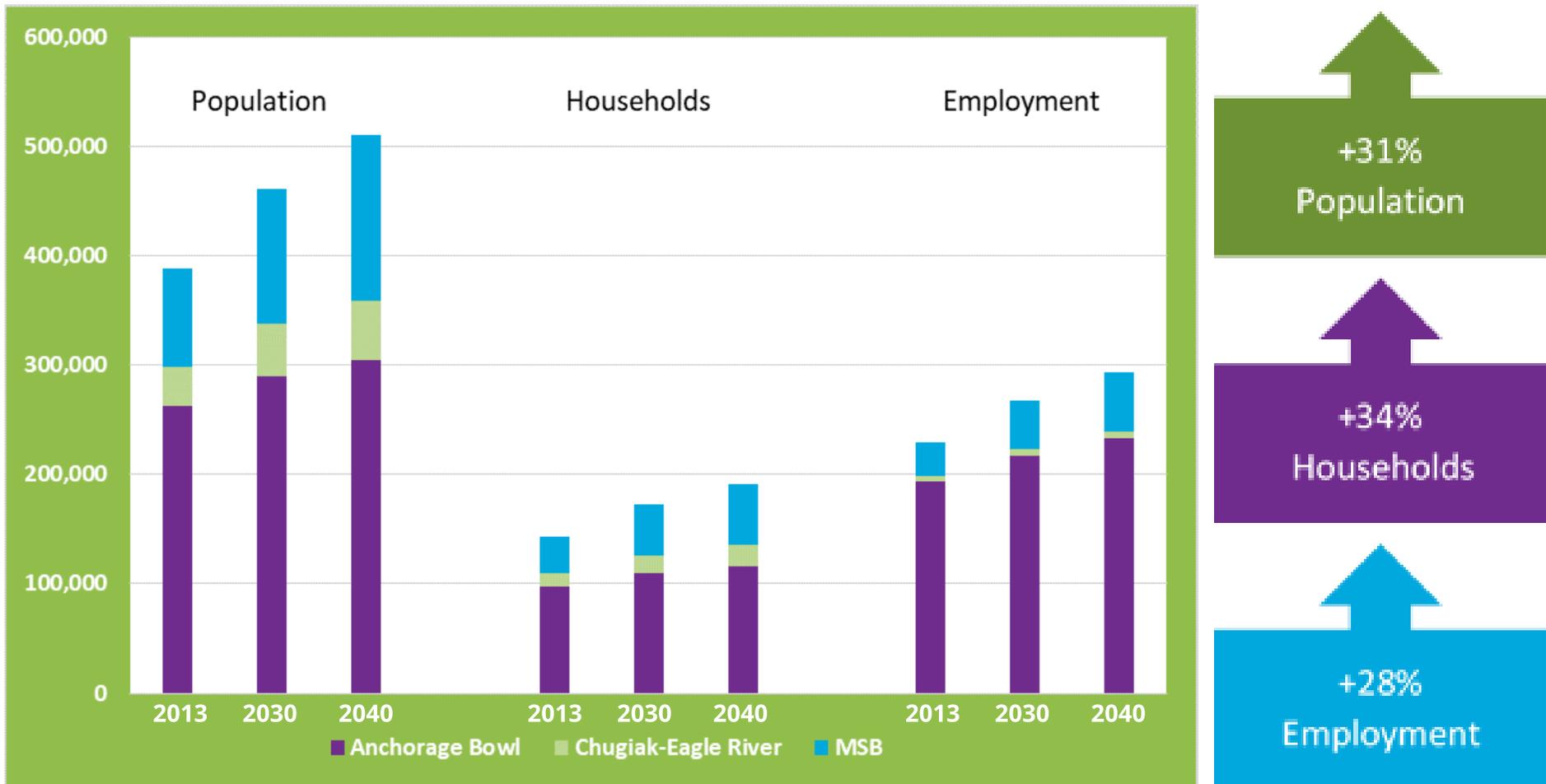
the latest 2040 land use distribution. It meets or exceeds federal guidelines for predicting future travel.

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

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

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

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



Land Use Forecast

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

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

Comprehensive Plan Guidance

The locations of future household and employment growth in the region are based on the Anchorage 2020: Anchorage Bowl Comprehensive Plan (adopted February 2001), the Anchorage 2040 Land Use Plan for the Anchorage Bowl (adopted September 2017), and the Chugiak-Eagle River Comprehensive Plan Update (adopted December 2006). These comprehensive plan elements provide a vision and long-term goals for the development of the region's communities. Elements such as the density of future development and the location of employment centers and mixed use areas are described in these plans. Figure 5-2 shows the land-use plan map for the Anchorage Bowl. An intent of this plan is to create a city in which there are more opportunities to live a lifestyle that is less

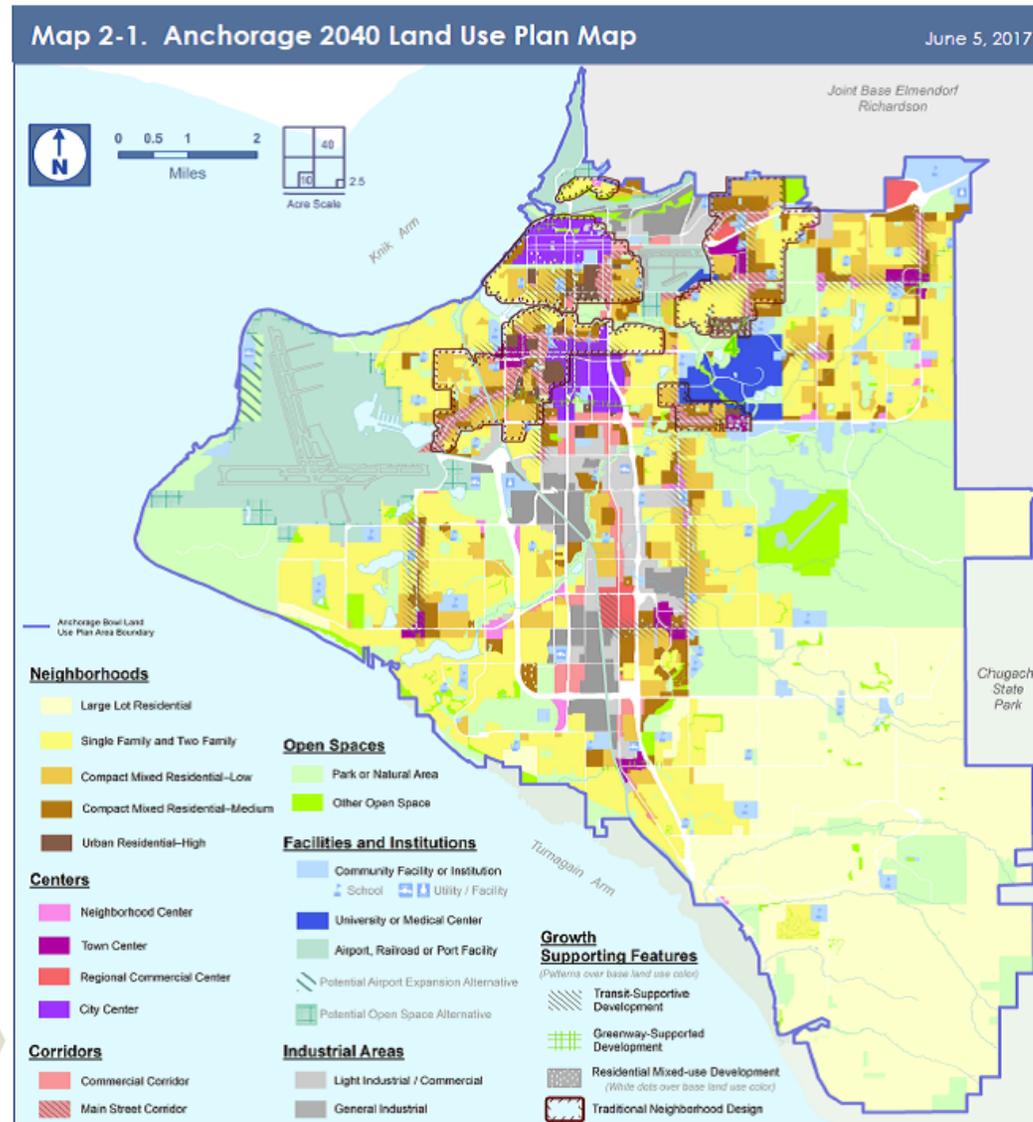
dependent on automobiles. This goal is accomplished by selectively increasing housing densities, consolidating employment, and encouraging mixed-use development to improve walkability within the Anchorage Bowl and to promote public transportation use. Housing and employment density increases are specifically called for along transit-supportive development corridors, within town centers, and in the redevelopment areas near major employment centers.

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

Employment growth is expected to still be located predominantly in the Anchorage

Bowl, where more than 70 percent of regional employment is expected to occur. The largest amount of employment growth is expected to occur in Midtown, Downtown, and the U-Med district. This growth will continue to cause high demand on the arterial streets into and out of these employment centers.

Figure 5-2 Anchorage 2040 Land Use Plan Map



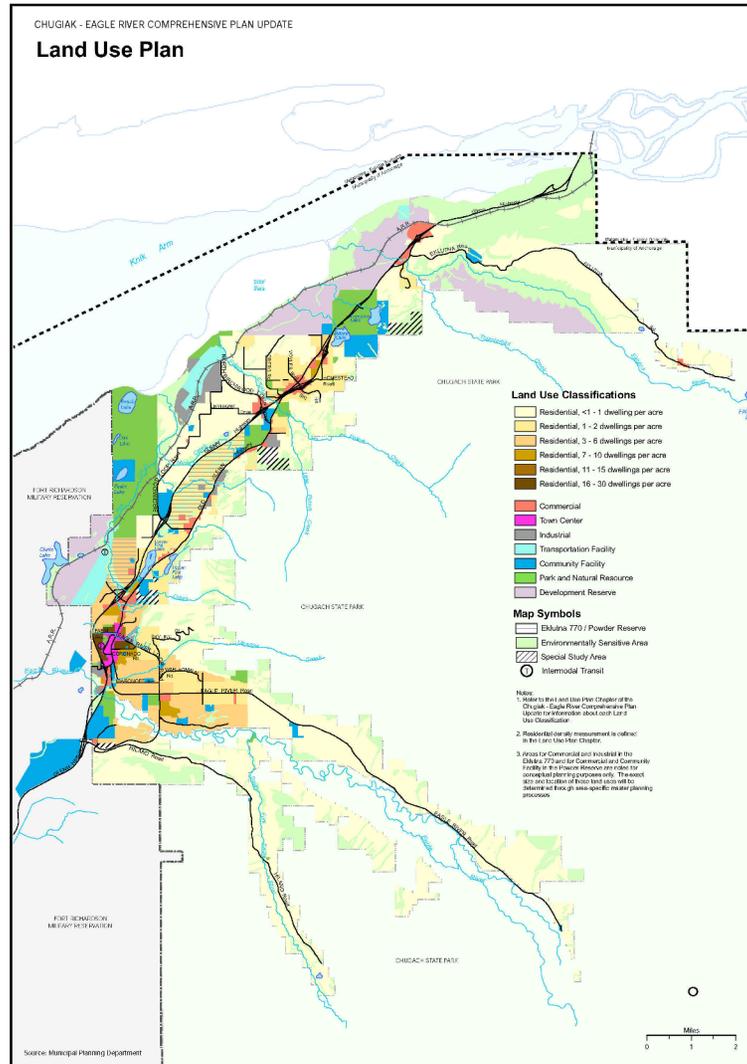
Source: 2040 LUP

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

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

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

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



Source: Chugiak-Eagle River Comprehensive Plan Update

Future Transportation Trends

It is important to understand trends to plan for the future. The following section summarizes a number of issues related to transportation planning that will influence transportation in Anchorage over the next 20 years. The demographic trends in this section are based on national data and need to be considered for the AMATS area for future planning.

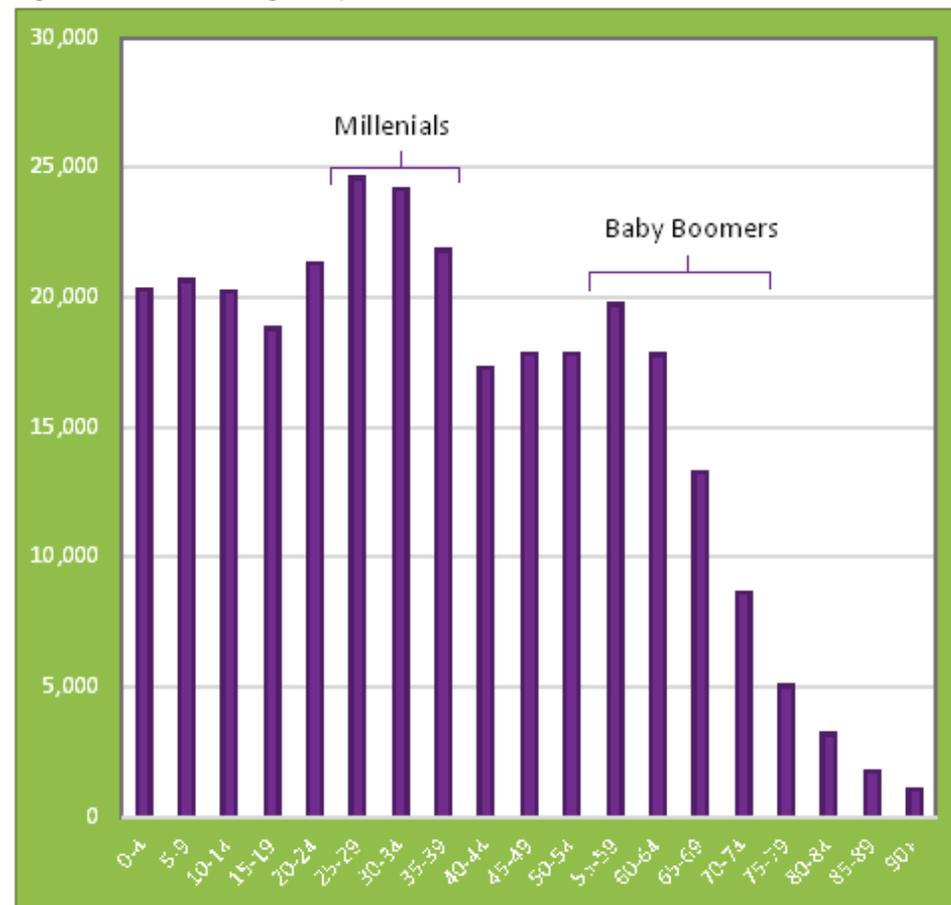
Changing Demographics

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

report, age plays a significant role in patterns of vehicle use and as the

population ages, less driving is anticipated. Similarly, the millennial generation brings

Figure 5-4. Anchorage Population Distribution, 2018



Source: Alaska Department of Labor & Workforce Development

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

Other demographic trends include:

- Population is growing, which will tend to increase vehicle miles traveled (even as the VMT per capita appears to be declining).
- Increasing diversity of the population, with Hispanic and Asian/Pacific Islander populations increasing the fastest. According to the TRB report, this trend may

increase VMT, the age of the auto fleet, and public transit use.

- A growing and aging work force. This trend is predicted to increase work-related VMT overall but decrease the VMT per capita and increase carpooling.
- According to the report, the rate of new households forming has declined since 2006, creating more single households and multi-generational households. This trend is predicted to decrease per capita VMT and auto ownership, and increase carpooling and transit use.

Autonomous Vehicle Technology

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

- Potential to reduce lane widths (possibly adding lanes or pathways in

the same road space by restriping)

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

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

Mobile Phones and Apps

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

ourselves on the ride. Car-sharing and ride-sharing apps allow us to locate the nearest rental or request a ride at our doorstep, providing an alternative to private vehicle ownership.

Car Sharing

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



Climate Change

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

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

Commuter Rail

Commuter rail continues to receive community support, but currently lacks

funding. Land use plans for the Anchorage Bowl and Eagle River support a long-term vision in which regional rail service between the Anchorage Bowl, Chugiak-Eagle River, and the Matanuska-Susitna Borough could connect with local public transit service and interact with transit-oriented development in mixed-use Centers and Corridors. AMATS and its planning partners will continue to monitor the future feasibility of commuter rail service.

Our Future

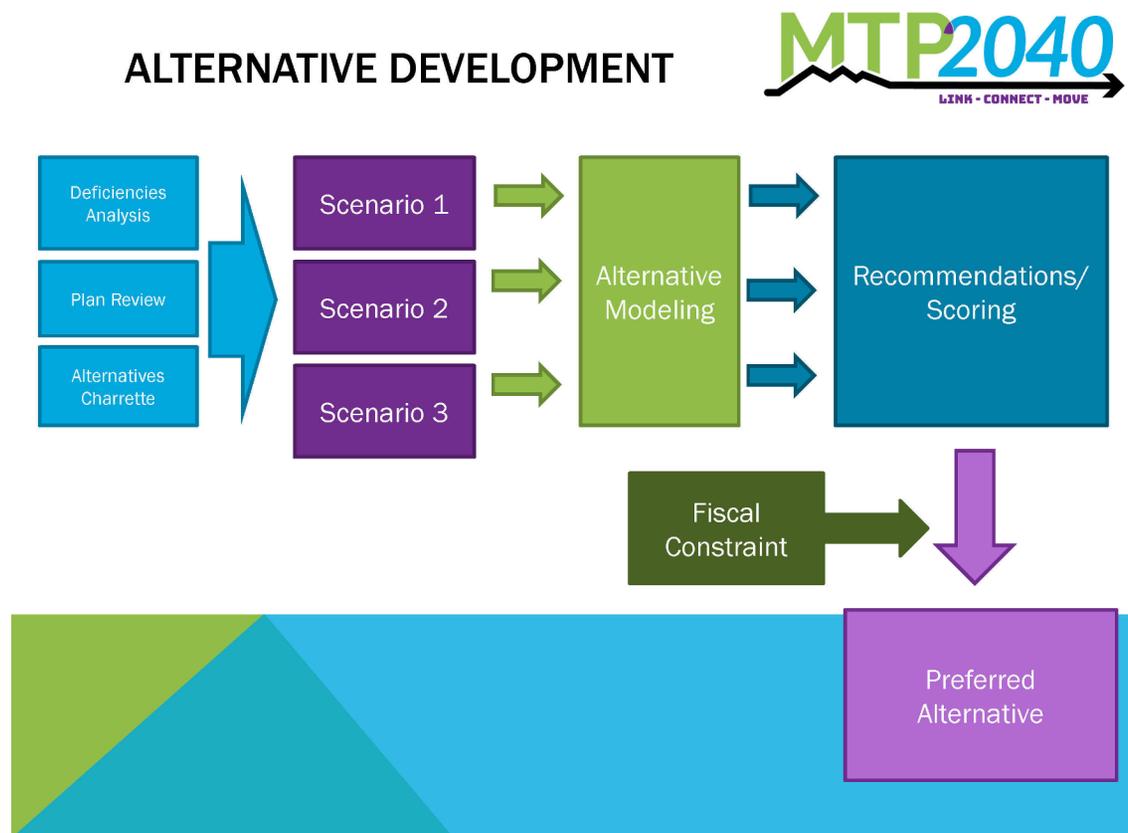
AMATS has considered these trends and others in the development of this MTP. For example, changing demographics and future land use were incorporated into the travel model used in the plan development. AMATS also considered how these changing trends might influence the plan's recommendations.



Alternative Development

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

Figure 5-5 Overview of Alternative Development Process



Deficiencies Analysis

The alternatives development process began with a deficiencies analysis to understand current transportation system performance and project future transportation needs based on adopted land-use forecasts. The deficiency analysis compares existing travel conditions with those of a future year. In order to understand future transportation system performance, a future baseline network

was created. This network reflects current conditions plus all projects with dedicated funding that are currently under construction or will be built in the near future (i.e., are committed). Two future year networks (2030 and 2040; roadway and transit) were developed by coding all “Existing plus Committed” projects (see Table 5-4) on the 2013 network.

Existing plus committed (E+C) projects include projects constructed since 2013

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

Table 5-4 List of Existing Plus Committed Projects

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

Table 5-4 List of Existing Plus Committed Projects cont.

Project Name	From	To	Description	Status
36th Ave - Arctic Boulevard to C Street 5-Lane Conversion	Arctic Boulevard	C Street	2 lanes in each direction	Complete
O'Malley Road Reconstruction	Seward Highway	Lake Otis Parkway	2 lanes in each direction	Complete
Seward Highway	Dimond Boulevard	Dowling Road	3 lanes in each direction	Complete
100th Avenue Extension	Minnesota Drive	C Street	1 lane in each direction w/center turn lane	Complete
Glenn Hwy/Muldoon Road Interchange			A diverging diamond interchange with 2 lanes in each direction	Complete
Jewel Lake Road	88th Avenue	Strawberry Road	1 lane in each direction w/center turn lane	Complete
Abbott Road	Lake Otis Parkway	Jupiter Drive	1 lane in each direction w/center turn lane	Complete
Abbott Road	Jupiter Drive	Birch Road	1 lane in each direction w/center turn lane	Complete
Glenn Highway - Southbound Lane	Hiland Road	Artillery Road	Adding 1 lane to the southbound direction	Underway
Klatt Road/Johns			Roundabout	Complete
Bogard Road East Extension	N49 Ave	Arabian Street	1 lane in each direction	Complete
Fern Street Connection to Edlund	Fern Street	Edlund Road	1 lane in each direction	Complete
Seldon Road/Lucille Street roundsbout			Roundabout	Complete



Table 5-4 List of Existing Plus Committed Projects cont.

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

Level of Service

Level-of-service (LOS), a measure of congestion as described on page 4//14 is calculated by dividing the capacity of the road segment by the volume of forecast for that roadway segment by the model. In the AMATS model, capacity is based on number of lanes for road segments without signalized intersections, and a combination of number of lanes and intersection characteristics for signalized intersections. The results of the LOS calculations in the figures below use the intersection capacity for roads with signalized intersections, which tends to be lower than the mid-link capacity due to signal timing. Level-of-service is coded into six letter categories A through F according to ranges of the volume to capacity.

Peak period level-of-service is relatively good on most of the facilities in 2013 in the Anchorage Bowl (see Figure 5-6). Key congested facilities during the peak period include: Tudor Road\Muldoon Road, East Northern Lights Boulevard near the

University of Alaska Anchorage, sections of Seward Highway north of Tudor to downtown Anchorage, Minnesota Drive between Tudor and Northern Lights Boulevard, West 15th Street between A Street and C Street in downtown, 5th Avenue east of downtown to Glenn Highway, and Glenn Highway east of Muldoon Road.

As expected by 2040, congestion worsens on many of these facilities (see Figure 5-7). Level of service deteriorates on the Glenn Highway east of downtown Anchorage, Tudor Road\Muldoon Road, and Northern

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

Lights Boulevard; many locations that were LOS C or D in 2013 show up as LOS D, E, and F in 2040. Congestion can also be observed on Bragaw Street between Northern Lights Boulevard and DeBarr Road and sections of the Glenn Highway.

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

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

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

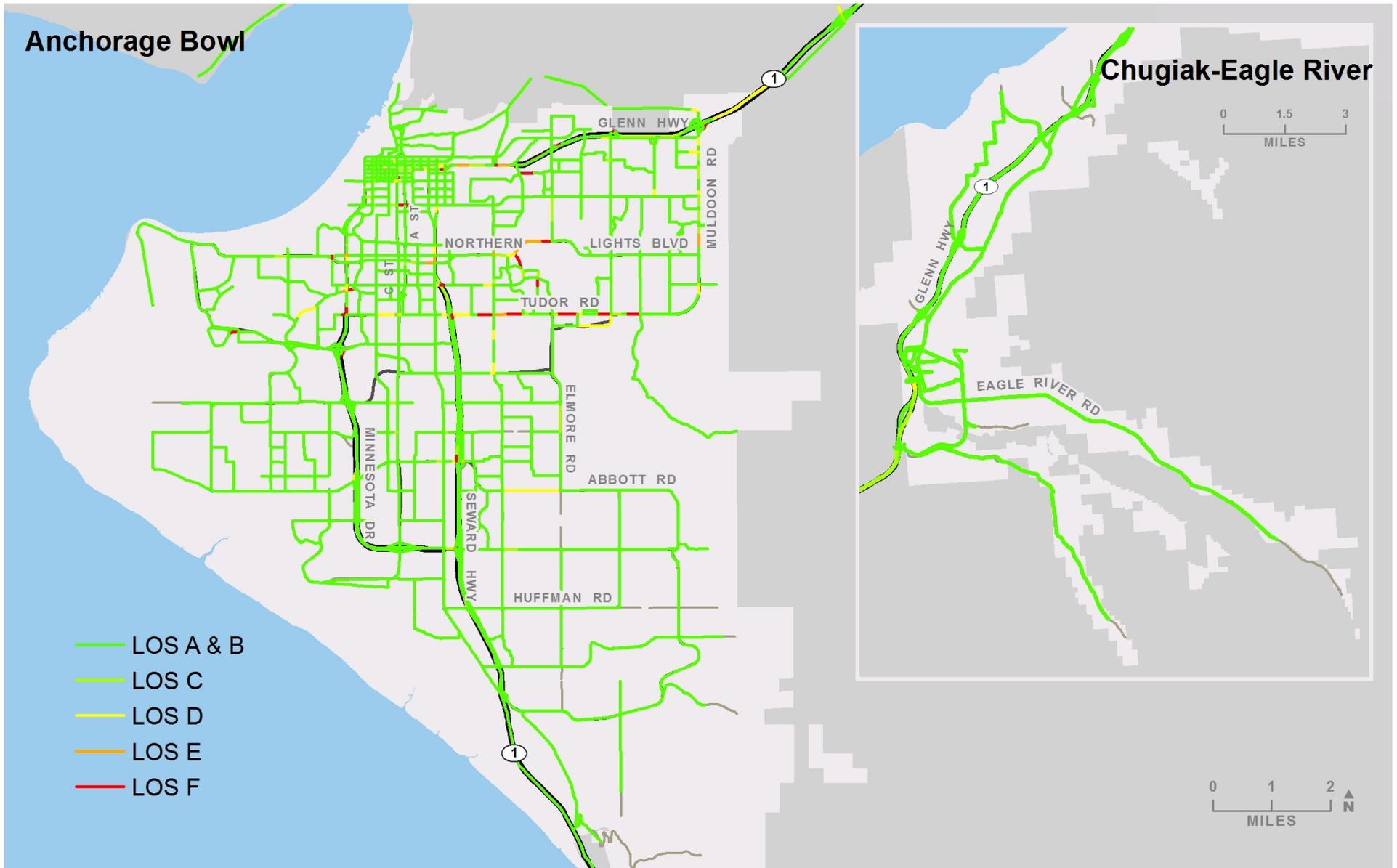
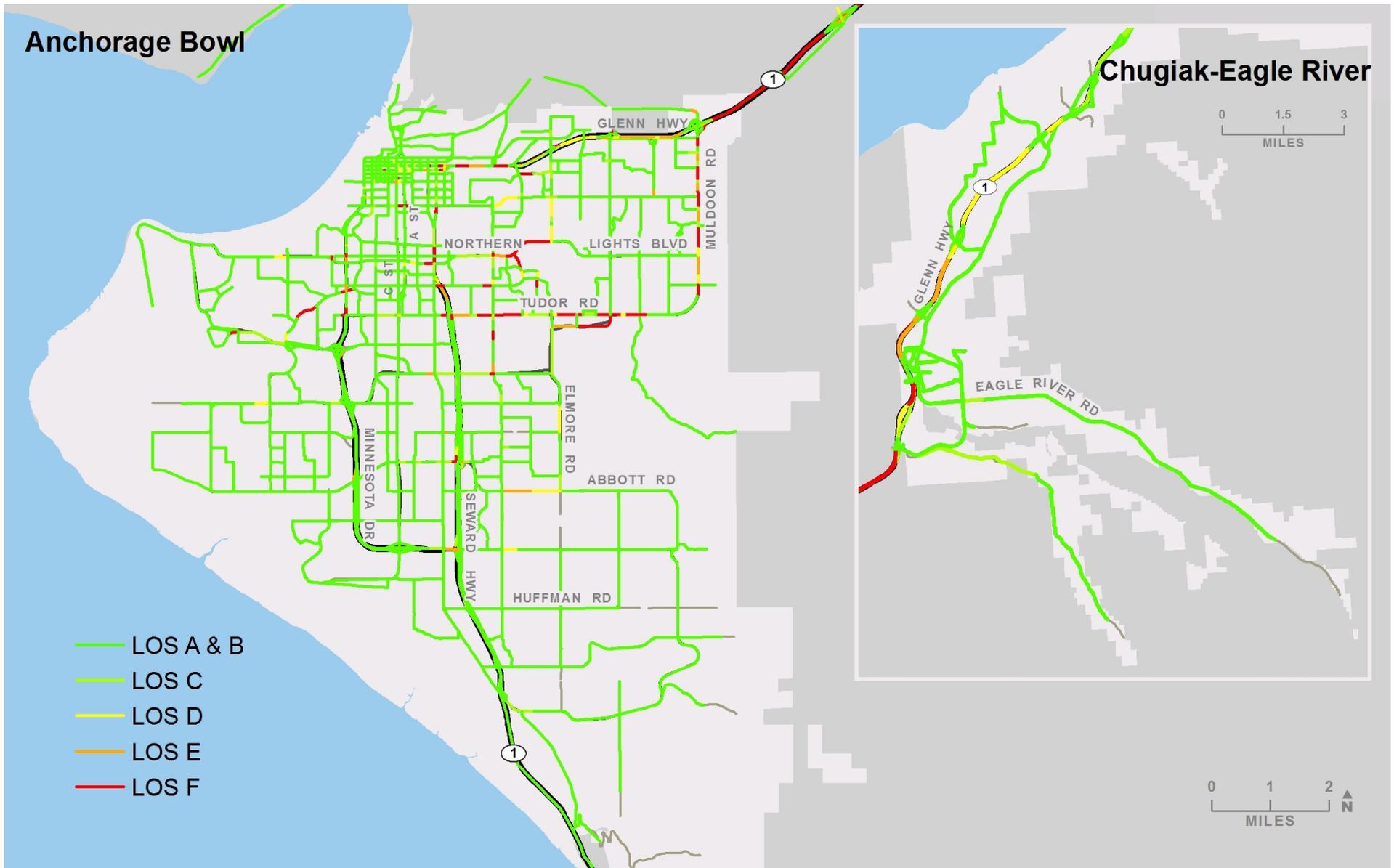


Figure 5-7 Peak Period Level of Service, 2040 E+C



Project Identification

Next, the project team reviewed existing plans to identify potential transportation improvement projects, including those described in the 2035 MTP, the Anchorage Pedestrian Plan, the Anchorage Bicycle Plan, neighborhood plans adopted since the 2035 MTP, the AMATS Freight Mobility study, Baseline Peak Period LOS, 2013 (Figure 5-6), other AMATS studies/plans, and community council Capital Improvement Plans nominations, along with comments received as part of the 2040 MTP planning process. These improvement projects were then evaluated and scored using the initial screening criteria approved through the TAC and PC. The initial screening criteria are shown in Table 5-5. The criteria were developed to reflect MTP goals, national FHWA goals and planning factors, the MOA Vision Zero High Injury Network, the 2040 Land Use Plan, CMP network/deficiencies analysis, and the AMATS Freight Mobility study map of problems locations and freight network.



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

Table 5-5 2040 MTP Initial Screening Criteria

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

Table 5-5 2040 MTP Initial Screening Criteria cont.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Alternative 2, Include Broader

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

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

identify potential refinements to the scenarios based on public feedback.

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

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

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

trips are made by public transit, which is well below the national average of 5.1 percent (see Table 5-6).

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

Preferred Alternative

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

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

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

Source: US Census

Model Results

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

The results indicate there is very little system performance different between the alternatives. This could be that alternatives were not fiscally constrained and/or the trade-offs were not large enough to make a substantial difference. However, the results combined with public feedback from survey #2 allowed the project team to create a blending of the Focus on Moving Motor

Vehicles and Include Broader Transportation Solutions alternatives. The 5% alternative showed that policies, such as parking management, and additional funding are needed to make progress towards this alternative.

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

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

Preferred Alternative Scoring

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

PREFERRED ALTERNATIVE SCORING

Project Readiness
Timing of Need & Project Need

- Safety: MOA Vision Zero
- Congestion: 2040 MTP Deficiencies Analysis
- Freight: AMATS Freight Mobility Study
- Land Use: MOA 2040 Land Use Plan

Functional Classification
Logical Sequencing
Cost
Obstacles to construction

Table 5-8 2040 MTP Prioritization Criteria for Road Projects

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

Table 5-9 2040 MTP Prioritization Criteria for Transit Projects

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

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

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

Recommended Project List

Based on the results from traffic modeling, preferred alternative scoring, fiscal constraint analysis (see Chapter 6), input

from the AMATS Committees, and public comment, a list of recommended projects was developed and is presented in Chapter 7.