

# CHAPTER

# 1



# Introduction

The Non-Motorized Plan (NMP) provides the vision for a network of facilities for non-motorized travel (walking, biking, rolling, and gliding) within the Anchorage Metropolitan Area Transportation Solutions (AMATS) Planning Area that when implemented, will help residents travel more safely and efficiently without the need of a motor vehicle in all seasons. The NMP merges planning efforts for on-street bicycle facilities, pedestrian sidewalks, and shared use pathways (for walking, biking, and other non-motorized modes) simultaneously. By addressing these topics together, a more comprehensive framework and vision for active transportation in the AMATS Planning area is developed.

» **Bicycle Network** – This plan focuses specifically on closing gaps in the existing network, providing an on-street network and connecting the existing and planned shared use pathway network to increase the use of existing facilities.

» **Pedestrian Network** – Many roadways in Anchorage already have complete sidewalks or sidepaths this so plan identifies a series of priority corridors to provide flexibility in network implementation over time and improve the focus on safety and connectivity of the network. Detailed recommendations from the previous pedestrian plan are carried forward and supplement priority corridors. Pedestrians are also served by the shared use pathway network represented on the bicycle network maps.

» **Shared Use Pathway Network** – Shared use pathways are built to accommodate all non-motorized modes of travel and **as such are part of both the bicycle network and pedestrian network**. This plan provides connections to the existing shared use pathway network, develops off-street shared use pathway connections to link low-stress routes, and defines a primary shared use pathway network that serves both recreation and transportation purposes for all active transportation modes. This network is comprised primarily of fully developed and paved shared use pathways. The variety of shared use pathway types found in Anchorage are described in Chapter 2 of this plan and in the AMATS Design Criteria Manual. Opportunities to address the recreational shared use pathway and trails network are only described briefly in this plan as they are recommended to be addressed comprehensively in a future Recreational Trails Plan update.

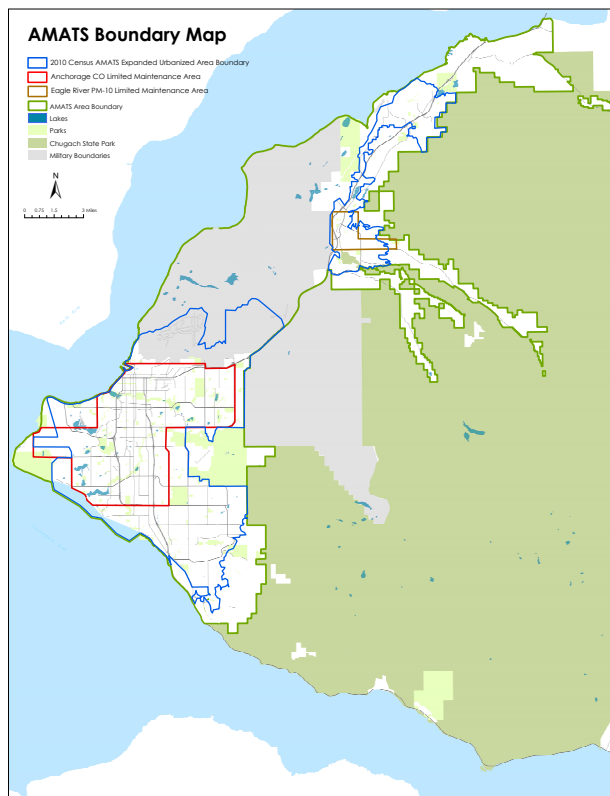
The following plan sections describe the goals and vision for the NMP; explore the current network conditions, including considerations for safety, demand, health, and equity; describe feedback provided through the public involvement process; and recommend prioritized network improvements for a more connected AMATS Planning area.

## 1.1 Plan Setting

The NMP provides guidance for pedestrian and bicycling improvements in the AMATS Metropolitan Planning Area. The planning area, depicted in Figure 1.1, covers the area west of Chugach State Park and Joint Base Elmendorf-Richardson (JBER), the plan also addresses Chugiak-Eagle River, to the northeast of JBER. Throughout the plan, maps depict three areas: the Anchorage Bowl, Chugiak-Eagle River, and a detailed Downtown map. Figure 1.2 demonstrates the sub-area focuses of both Chugiak-Eagle River and Downtown.

The Plan builds on the existing network within the AMATS area and considers the impacts of climate on facility selection, maintenance, and potential user groups.

**Figure 1.1: AMATS Boundary Map**



## 1.2 Vision and Goals

The vision for the NMP not only guides the planning process but also informs the future of the AMATS Planning area's non-motorized network. The following Vision Statement was developed with input from plan stakeholders, including the Citizen Advisory Group (CAG) and Agency Advisory Group (AAG):

***Anchorage is a world-class northern city that has an integrated network of routes accessible for people of all ages and abilities to walk, roll or glide safely on shared use pathways and streets.***

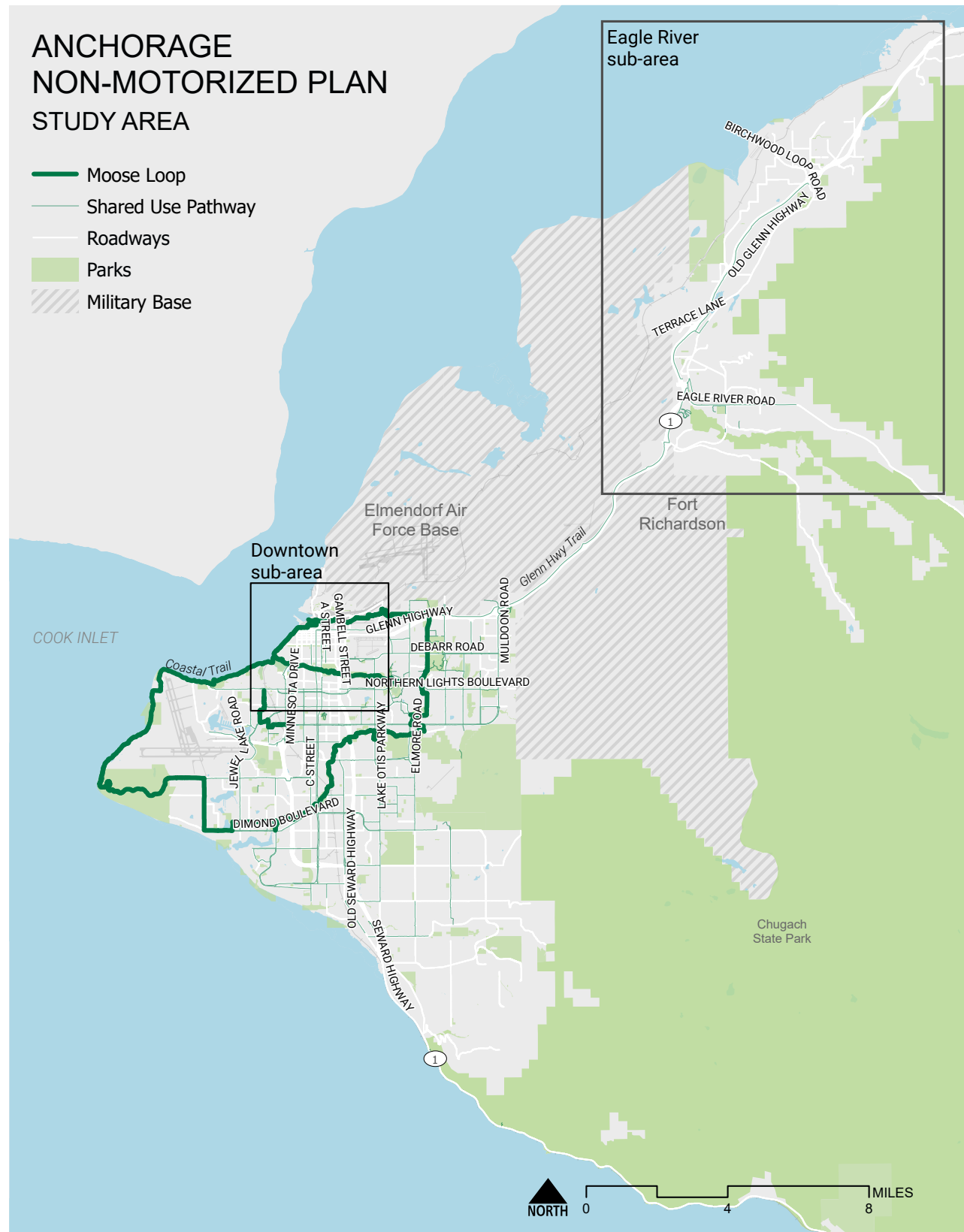
This plan also provides a vision and concept for a complete, connected and continuous non-motorized network. This network is made up of numerous facility types, including the following:

- » **Sidewalks**
- » **Enhanced shared roadway** – Yield roadway, bicycle boulevard
- » **Separated bikeway** – Buffered bicycle lane, protected bicycle lane
- » **Shared use pathway and sidepaths**
- » **Supplemental bicycle facilities** – Signed route, paved shoulder, advisory shoulder, bicycle lane

See Chapter 7 for descriptions of each of these facility types.

The spine of the network is comprised of paved trails, referred to as shared use pathways in this document, that encircle Anchorage. This spine is supplemented with sidewalks, on-street bikeways and other trail connections. This combined network provides connections between homes and destinations.

Figure 1.2: Study area and areas of focus (shown in black)





To achieve this vision, the following goals and objectives will help guide AMATS in implementing the non-motorized network and associated recommendations. **Goals** describe a desired future condition that is consistent with community ideals;

goals are general and do not have specific dates by which they should be achieved. **Objectives** are specific statements related to a goal that is expressed in measurable terms and may be used to track progress towards plan implementation.

**Table 1.1: Plan Goals and Objectives**

<b>GOAL 1: INCREASE THE USE OF NON-MOTORIZED SYSTEM</b>		
<b>OBJECTIVES</b>	I	Increase the number of pedestrians and bicyclists using the non-motorized network.
	II	Increase the miles of protected non-motorized facilities including sidewalks, shared use pathways, and trails.
	III	Provide safe opportunities for walking and bicycling by expanding facilities in areas that are deficient.
	IV	Allocate more funding for non-motorized facilities.
	V	Reduce car use on roadways by providing incentives for non-motorized transportation and infrastructure changes that disincentivize single-person car use.
	VI	Provide support facilities and amenities (e.g., bicycle parking, showers, changing rooms) to enhance the non-motorized network and encourage its use as a practical transportation system.
<b>GOAL 2: PROMOTE AND IMPROVE HEALTH AND QUALITY OF LIFE</b>		
<b>OBJECTIVES</b>	I	Improve health through increased everyday activity such as walking, bicycling, skiing and hiking.
	II	Improve livability by providing safer, connected and accessible sidewalks, shared use pathways, bicycle facilities, and trails for all community members.
	III	Promote active transportation as a community health priority through partnerships with public health agencies.
	IV	Improve environmental health through the use of green infrastructure, such as bioswales, planters, and pervious pavers.
<b>GOAL 3 : IMPROVE SAFETY AND SECURITY</b>		
<b>OBJECTIVES</b>	I	Prioritize bicycle and pedestrian safety in planning and design of roadways and trails.
	II	Improve the non-motorized network to be safe and convenient for people of all ages and abilities.
	III	Aim to reach zero injuries and deaths for non-motorized users on streets and shared use pathways.
	IV	Improve safety and the perception of safety for all modes.
	V	Minimize user conflicts between non-motorized users and vehicles through education, signage and design.
	VI	Identify areas in the network where there are gaps to prioritize these areas of need.
	VII	Improve lighting for non-motorized facilities, routes, and crossings.
<b>GOAL 4: OPTIMIZE MAINTENANCE FOR ALL SEASONS</b>		
	I	Expand and enhance maintenance in all seasons on all facilities, both on roadways and on shared use pathways.
	II	Prioritize winter maintenance on the most traveled routes.
	III	Educate the public on maintenance priorities and their responsibilities.

<b>GOAL 4 (continued): OPTIMIZE MAINTENANCE FOR ALL SEASONS</b>		
	IV	Prioritize winter maintenance to improve access to public transportation facilities.
	V	Prioritize winter maintenance on a citywide network of routes for people of all ages and abilities.
<b>GOAL 5 : CONNECT COMMUNITIES THROUGH ALL MODES TO ALL DESTINATIONS</b>		
<b>OBJECTIVES</b>	I	Prioritize making links in the network where there are opportunities to connect to other modes such as public transit.
	II	Provide safer bicycle and pedestrian connections to destinations, such as schools; parks and playgrounds; shopping and employment centers; public facilities; and natural and recreational areas.
	III	Provide an efficient (direct), all season system that connects people to their destinations.
<b>GOAL 6 : MEASURE NON-MOTORIZED USE AND ASSETS</b>		
<b>OBJECTIVES</b>	I	Partner with health organizations to develop a set of health metrics to assess overall community health.
	II	Partner with economic development organizations to develop metrics for tracking economic benefits of active transportation through walking, bicycling and hiking.
	III	Track and measure the number of miles traveled on network to provide performance metrics for maintaining and funding expanded facilities.
	IV	Establish and monitor annual counts on routes.
	V	Install network of counters on identified and prioritized routes.
	VI	Use temporary counters before and after projects to assess if improvements lead to increased use.
	VII	Update and maintain inventory database of existing non-motorized facilities.
<b>GOAL 7 : BUILD COMMUNITY THROUGH EDUCATION AND INVOLVEMENT</b>		
<b>OBJECTIVES</b>	I	Encourage a culture of respect for walking and bicycling to reduce negative attitudes towards non-motorized users.
	II	Build community support for walking and bicycling through education outreach.
	III	Educate the public on how non-motorized facilities are an economic and health investment in the community and the city.
	IV	Increase the awareness of multiple users types.
	V	Expand programs to teach children how to walk and bike to school safely.
	VI	Define uses to help facilitate user compatibility of shared facilities.
	VII	Educate users on rules and conduct for shared-use paths or single use facilities for all seasons.
	VIII	Encourage mutual respect between user groups and between non-motorized and motorized users on shared facilities.
	IX	Encourage enthusiasm and excitement about the network and system of non-motorized use through outreach, events, and community activities.
	X	Hire a Vision Zero Coordinator. (See summary of Anchorage's Vision Zero Action Plan in Chapter 2.)



## CHAPTER

# 2





# Existing Conditions

The AMATS NMP aims to build on past and current efforts to improve active transportation throughout the area. To better understand these efforts as well as identify network opportunities, a detailed existing conditions assessment was completed. The information presented in the following chapter represents an overview of these efforts as well as a detailed analysis of the existing network, safety, land use, and demographic conditions.

The results of this analysis will form the basis for recommendations presented in Chapters 4, 5 and 6.

## 2.1 Existing Plan Review

The NMP provides an update to previous non-motorized transportation planning efforts and complements previous and ongoing area plans and comprehensive plans. The NMP builds off of these previous plans, and its recommendations consolidates those found in previous plans. The NMP will supersede the existing Anchorage Bicycle Plan and Anchorage Pedestrian Plan when approved by the AMATS Policy Committee. It will not supersede the 1996 Areawide Trails plan. The Trails Plan update will include a broad overview of trails that will be amended with finer details in 2022, when trail GIS data has been updated and expanded to include new and planned facilities.

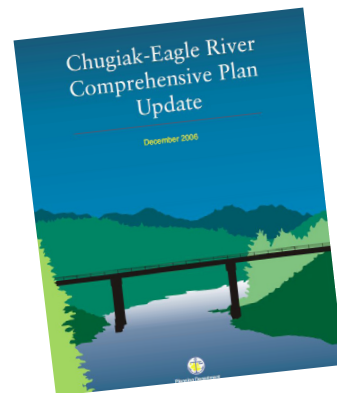
To understand the history of non-motorized planning in the AMATS Planning area and improvements in transit, a review of previous plans was completed. The most relevant plans are summarized below. Key themes include a strong desire to increase the number of safe, connected, and accessible bicycling and walking facilities; recommendations for education and encouragement activities; and actions to reduce the perceived barriers to walking and bicycling for transportation.

### ANCHORAGE TRAILS PLAN (1997)

The Trails Plan seeks to establish a shared use pathway network that encourages active transportation and also supports multiple recreational user types. Safety, reducing user conflicts, and improved maintenance were identified by the public as key concerns for the shared use pathways network. The Plan is integrated into the Anchorage Bowl Comprehensive Development and Long-Range Transportation Plans, Chugiak-Eagle River Comprehensive and Transportation Plans, the Turnagain Arm Comprehensive Plan, and the Girdwood Area Plan. The Plan focuses on infrastructure, education, encouragement, and consideration for seasonal needs.

### ANCHORAGE BOWL PARK, NATURAL RESOURCE, AND RECREATION FACILITY PLAN (2006)

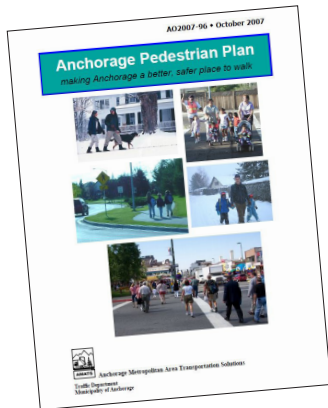
This Plan serves as the Parks and Open Space element of the Anchorage 2020 Comprehensive Plan as well as the primary long-range recreation plan for the planning area. Connectivity among recreational areas, including parks, is a primary focus of the Plan, with key recommendations including development of shared use pathways and trails connecting recreational facilities and implementation of pedestrian improvements and bicycle facilities to and from parks. The Plan summarizes the benefits of quality recreational facilities, and sets a goal for 12.6 miles of shared use pathways and trails per 10,000 population. The Plan found that approximately 50% of Anchorage residents strongly value bicycling on paved shared use pathways, hiking and walking on city trails, and desire to access the city end-to-end via active transportation facilities.



### CHUGIAK-EAGLE RIVER COMPREHENSIVE PLAN (2006)

This Plan offers an assessment of the anticipated growth in the area and establishes goals and strategies to best coordinate the intentions and aspirations of the community. Shared use pathways, trails, and pedestrian improvements, increased coordination with other infrastructure projects, and improved education and encouragement programs are included in the recommendations for the area comprehensive plan. In addition to a continuous

shared use pathway network serving both utilitarian and recreational trips, the Plan promotes the development of a complete network that maximizes safety, reduces reliance on motor vehicles, and improves connections to neighborhoods and transit.

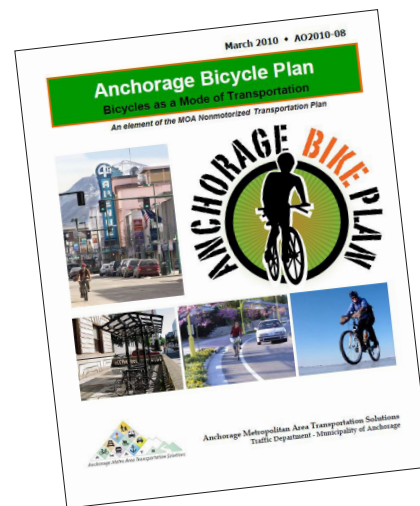


### ANCHORAGE PEDESTRIAN PLAN (2007)

Completed in 2007, this Plan represents the most recent comprehensive pedestrian planning effort for the Planning area. It provides a 20-year framework for improvements to the pedestrian network with the intended goal of increasing pedestrian mode share. The Plan aims to address the needs of all people, and considers facilities adjacent to streets, connections among subdivisions and schools, intersection and crossing improvements, and signage. The Plan acknowledges the impact of development patterns on the pedestrian environment and encourages improving practice to promote pedestrian travel. At the time of the plan, fewer than 13% of roadways within the Anchorage Bowl had sidewalks. This calculation does not include sidepaths. The recommendations for this Plan delineate specific improvements by subarea.

### ANCHORAGE DOWNTOWN PLAN (2007)

The Downtown Plan provides direction and design standards for growing the Downtown area into a vibrant, walkable, mixed-use economic and cultural urban center. A primary goal of the plan is to develop an easily-navigable network of streets that promotes access to Downtown via multiple modes, with pedestrian and transit prioritized for travel within Downtown. Wayfinding, improved management of public right-of-way, lighting, and maintenance are key supporting recommendations for this plan. Further, the plan encourages development of a continuous, safe, and universal access for pedestrian pathways. Street conversions, speed and volume management, and improved crossings are recommended to remove pedestrian barriers throughout Downtown.



### ANCHORAGE BICYCLE PLAN (2010)

Completed in 2010, the Bicycle Plan focuses on providing facilities for transportation purposes and aims to create a connected, comfortable, and safe network that is well-integrated with other modes. Connectivity, safety, and -improved education and encouragement are key focus areas of the Plan. Using a range of data inputs, the Plan recommends over 500 miles of bicycle facilities, including existing infrastructure, but recognizes the financial limitations to implementing the network. To this end, a limited, core network is prioritized



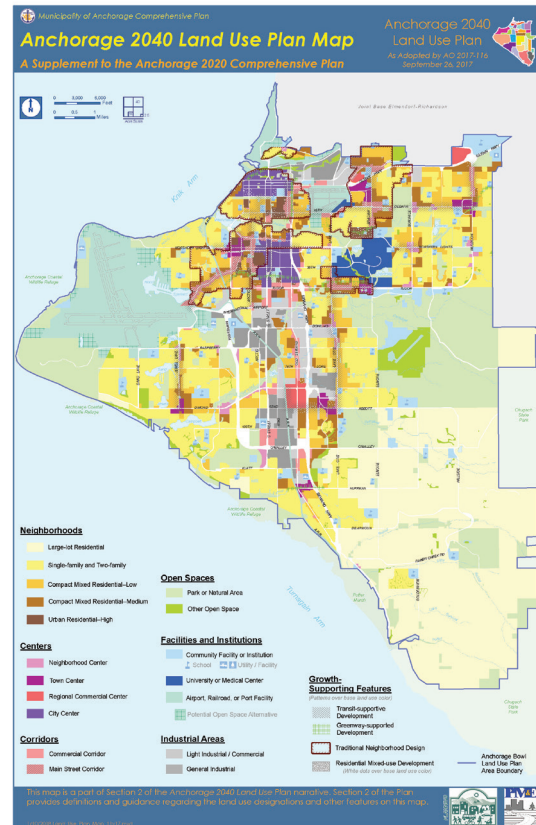
for implementation. The Plan also recognizes the important role that education, encouragement, bicycle parking, support facilities, and wayfinding play in promoting a well-used network.

## ANCHORAGE TALKS TRANSIT CHOICES, OUTREACH, AND FUTURE ALTERNATIVES (2016)

Ahead of the launch of the new People Mover in 2017, this visioning exercise assessed the potential demand for transit in the planning area, identified planning area needs and demographics, analyzed trends and peer cities, identified key questions for transit network development, and presented concept alternatives for a new transit system in Anchorage. Current residential density, community need, activity center location, and transit commute rates were considered to determine potential demand. The analysis of transit service outlined different types of transit networks, frequency considerations, existing ridership, and existing cost of operations. The resulting recommendations provide high level network concepts and operations approaches, as opposed to specific routing decisions.

## ANCHORAGE 2040 LAND USE PLAN (2017)

The Anchorage 2040 Land Use Plan was adopted in September 2017 and builds on the framework established by the Anchorage 2020 Comprehensive Plan. It adopted neighborhood, district, and facility plans; and updated analyses regarding population and building needs in the next 25 years. The Plan provides a land use map, which demonstrates where anticipated growth can occur within the city and future land use designations to accommodate growth. Specifically, it aims to maintain a focus on more compact development around mixed-use centers, and the plan identifies corridors where



Greenway-Supported Development (GSD) and Transit-Supportive Development (TSD) should be focused. For example, Lake Otis Parkway is identified for TSD, and Ingra Street as a (GSD). The Plan also includes strategies for realizing the future land uses identified in the plan, including policies and recommended design standards. The NMP includes the projects found in the MTP2040; however, the NMP is not meant to supersede the MTP. The MTP still serves as the overarching planning document for AMATS, and the NMP is meant to augment it with additional design guidance.

## ANCHORAGE VISION ZERO PLAN (2018)

The Anchorage Vision Zero Action Plan was adopted in 2018 and is a three-year guiding document that outlines a strategy to eliminate all traffic fatalities and severe injuries on Anchorage's roadways. A summary of the report and its findings and strategies is provided on later in this chapter.



The Climate Action Plan calls for two overarching actions: complete an annual green house gas inventory to track progress towards climate goals and develop a framework for selecting monitoring and sharing relevant performance indicators. The Climate Action Plan includes 4 objectives and associated actions related to land use and transportation. Actions supportive of non-motorized transportation include alignment of transportation, land use regulations (Title 21); adoption of a Complete Streets Policy; implementation of the NMP; enhanced agency collaboration and increasing GIS capacity to provide data driven support for long range planning initiative that support implementation of the Climate Action Plan.





## 2.2 Peer City Review

Anchorage faces a unique set of challenges in implementing and increasing use of non-motorized networks. For example, seasonal changes and winter maintenance are potential concerns. To better understand practices in other winter cities and develop recommendations best-suited for Anchorage's climate, the project team reviewed existing practices, policies, and infrastructure in five North American cities that share some similar qualities with Anchorage. The selected cities include:

- » Madison, Wisconsin
- » Minneapolis, Minnesota
- » Montreal, Quebec
- » Salt Lake City, Utah
- » Calgary, Alberta

Each of these locations is considered a winter city, experiencing significant snowfall, short winter days, and many days below freezing. These conditions provide challenges for non-motorized travel, network development, and especially maintenance. However, several of the cities on this list also have high percentages of people who travel by foot and bicycle (known as pedestrian and bicyclist mode share) despite these conditions (see Table 2.1).

**Table 2.1: Peer City Statistics**

CITY	POPULATION	ANNUAL SNOWFALL	DAYS BELOW FREEZING	BICYCLE MODE SHARE	PEDESTRIAN MODE SHARE	FULL-TIME DEDICATED STAFF	NACTO* MEMBERSHIP	BICYCLE FRIENDLY COMMUNITY STATUS
Anchorage, AK	298,192	75.5"	192	1.5%	3%	1.0 FTE	No	Silver
Madison, WI	252,557	43"	155	6%	8%	1.0 FTE	Affiliate	Platinum
Minneapolis, MN	413,645	45.3"	153	5%	5%	2.0 FTE	Member	Gold
Salt Lake City, UT	193,776	61"	123	4.7%	17%	2.0 FTE	Affiliate	Silver
Calgary, AB	1,139,220	51"	194	2%	--	1.0 FTE	No	N/A
Montreal, QC	1,704,694	82.5"	148	2.5%	5%	No dedicated staff**	International	N/A

\*National Association of City Transportation Officials

\*\*While there is no dedicated staff in Montreal, all staff have some responsibility for bicycle and pedestrian planning.

Topics assessed fall into five key areas, including:

- » Study Area Setting: Includes consideration of climate, population, existing mode share for walking and bicycling, and agency staff support for non-motorized transportation.
- » Funding Strategies: Review of funding sources currently used by each jurisdiction and recognition of any innovative funding strategies that Anchorage should consider adopting.
- » Maintenance: Considerations for both summer and winter maintenance, including snow clearing policies, maintenance responsibility, and priority for access.
- » Policies + Programs: Includes consideration of education and encouragement programs, such as Safe Routes to School, as well as Vision Zero policies, bicycle parking programs, and Open Streets events.
- » Shared use pathways: Who are shared use pathways designed for and how are user conflicts addressed?

The best practices and key takeaways for Anchorage helped guide the development of this plan in accordance with the Vision (See Section 1.2).

The review of peer cities suggests that Anchorage can benefit from improving and formalizing policies related to active transportation, including trail user conflicts and procedures for maintenance and snow clearing. The key takeaways for each category are outlined in the Peer Review Key Takeaway summary as follows.

## PEER REVIEW KEY TAKEAWAYS

### Setting

- » Develop full-time agency position dedicated to active transportation issues.
- » Adopt the National Association of City Transportation Officials (NACTO) design guidelines; join NACTO to benefit from member city technical support services.
- » Identify actionable items to achieve Bicycle-Friendly Community Gold rating.

### Funding

- » Explore funding partnerships for projects and programs, such as partnering with health insurance agencies, corporate environmental foundations, or other community grant opportunities.
- » Pursue funding specific to programs, such as Safe Routes to School.

### Maintenance

- » Prioritize clearing of routes that provide access to transit.
- » Develop and share information publicly regarding sidewalk and shared use pathway snow clearing and removal practices.
- » Adopt policies that prioritize snow clearing and removal on active transportation facilities.

### City Policies and Programs

- » Develop and adopt bicycle parking requirements that consider winter conditions and access.
- » Provide dedicated funding for Safe Routes to Schools programs.
- » Implement safety education programs, such as bicycle light and helmet giveaways during Bike Month or other community events.
- » Bike share programs are popular in other winter climate cities; assess the feasibility of bike share programs that function year-round to understand the needs and impacts of an Anchorage program.
- » Activate public spaces through programs such as Open Streets, Play Streets, or parklet pilot programs.

### Shared Use Pathways

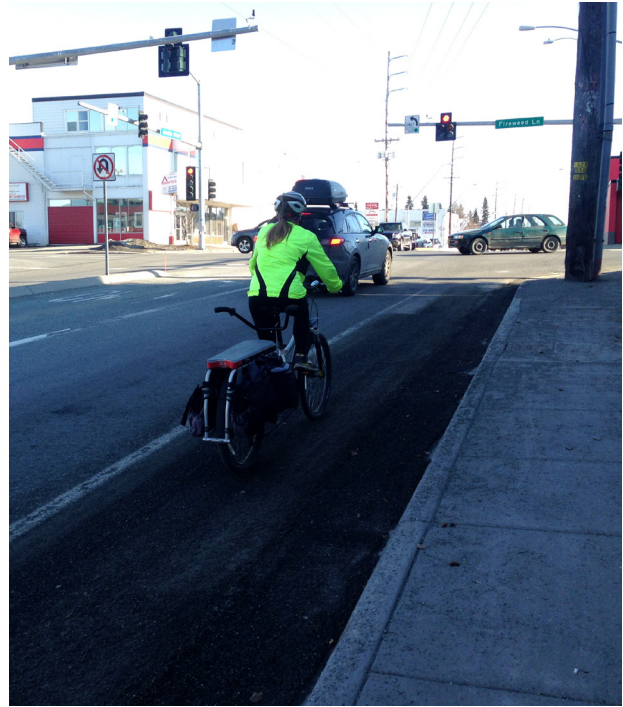
- » Develop policies and guidelines regarding shared use pathway conflicts that are sensitive to seasonality.
- » Adopt shared use pathway design guidelines to improve the year-round utility of shared use pathways within Anchorage.
- » Prioritize connections to activity centers and integration with other modes.
- » Improve roadway crossing options when connecting the shared use pathways network.



**Existing shared roadway**



**Existing bicycle lane**



**Existing Shared Use Pathway**



## 2.3 Network Analysis

To better understand the current service provided by the existing active transportation network, the following section explores a series of analyses that evaluate the existing network quality, collision history, and factors that can inform recommendations for an improved network that meets the needs of AMATS residents.

### EXISTING NETWORK

The AMATS planning area is home to a robust network of shared use pathways, bicycle pathways, and sidewalks. A series of paved shared use pathways and unpaved trails provide opportunities for utilitarian and recreational active travel—walking, biking, ski touring, cross country skiing, fat-tire bicycling and equestrian activities. Existing connections to the pedestrian, bicycle, and other non-motorized modal networks extend the coverage of the network throughout the planning area.

#### Shared Use Pathways

A series of primary paved shared use pathways create a spine network, including the Tony Knowles Coastal Trail, Chester Creek Trail, Campbell Creek Trail, and Glenn Highway Trail. These shared use pathways accommodate a variety of uses and attract users from across the region. This plan addresses two types of secondary paved shared use pathways. The first type, sometimes referred to as sidepaths, are typically located along major arterials, and provide for transportation and utility-focused trips and include limited connections to the primary network. The second type, spur shared use pathways, are connections of longer shared use pathways to streets, parks or other access points. These spur shared use pathways are integral

in contributing to a comfortable and continuous infrastructure network.

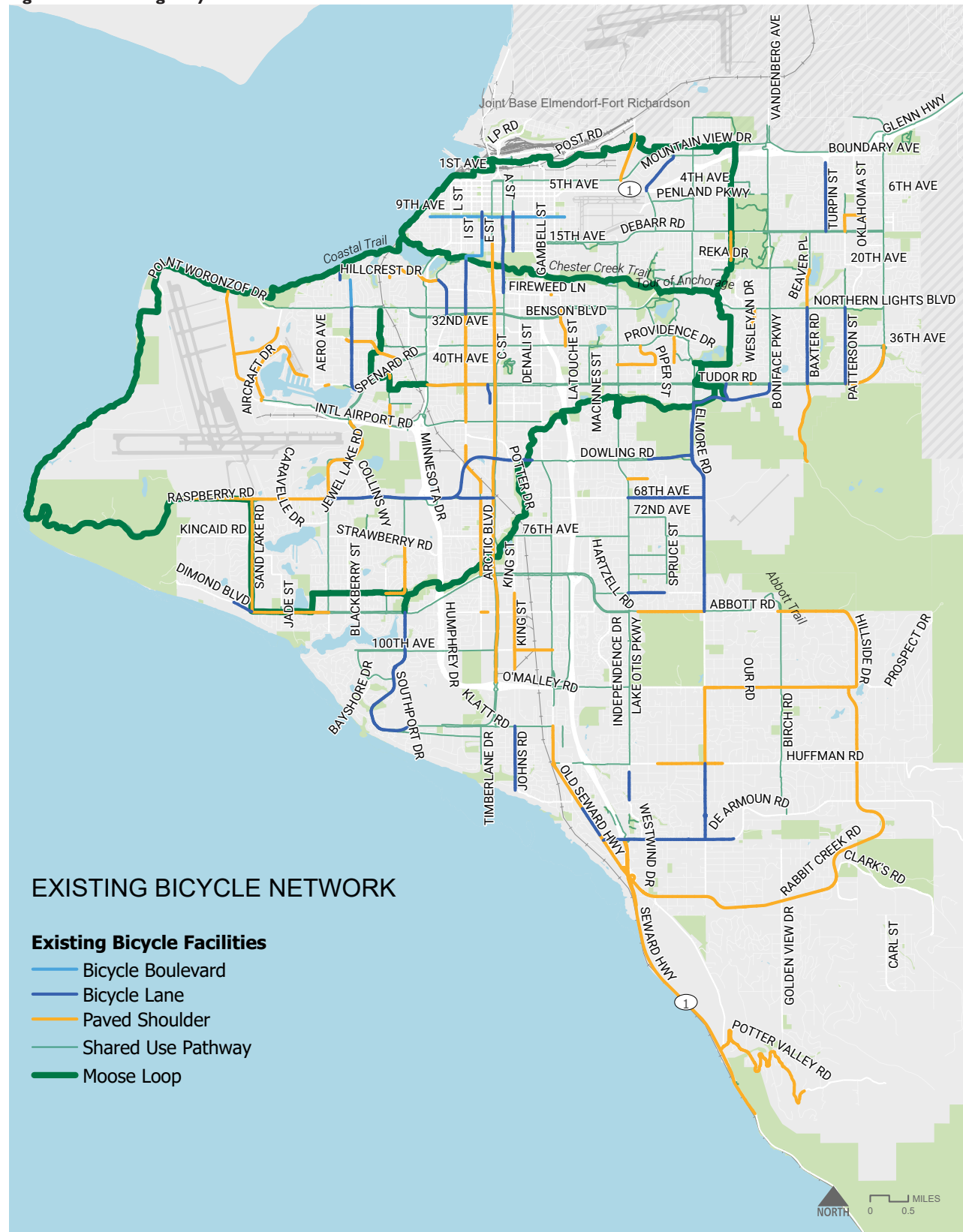
It is important to note that some of the existing shared use pathways marked in these maps do not meet American Association of State Highway and Transportation Officials (AASHTO) standards for sidepaths due to narrow widths and lack of either a five-foot offset or a barrier from the roadway. Due to a lack of detailed data on where pathways do not meet the standards, further study may be required to identify locations where sidepaths are suitable facilities.

Other, unpaved trails provide recreational opportunities across the region; however, these trails are not included in this plan. This plan focuses on paved shared use pathways and utilitarian trips (bicycling for transportation purposes, as opposed to recreational bicycling); a forthcoming recreational trails plan will provide the opportunity to improve and expand the soft-surface, recreational trails in the region. The shared use pathway network accommodates pedestrian and bicycle travel, and it is supplemented with sidewalks for pedestrians and bicycle lanes, bicycle boulevards, and paved shoulder bikeways for bicyclists.

When considering winter maintenance procedures, the network for active transportation in winter months is more limited. The MOA Parks and Recreation Department and the Nordic Skiing Association maintain a select number of ski trails and sidewalks throughout Anchorage. From October through May, Street Maintenance provides snow plowing, snow removal, ice prevention, and de-icing on municipal-maintained streets and sidewalks.



**Figure 2.1: Existing Bicycle Network**



## On-Street Bicycle Facilities

Bicycle lanes and boulevards are limited in length and coverage across the city, but often provide direct connections to the existing shared use pathway network. Paved shoulder bikeways help extend the coverage of the shared use pathway and bicycle lane networks. It is important to note, however, that the municipality's maintenance group has not been directed to, nor funded to prioritize bicycle lanes over shoulders, and thus all of these facilities currently serve as snow storage during the winter and as vehicle breakdown lanes.

### Existing Bicycle Facilities

- Bicycle Boulevard
- Bicycle Lane
- Paved Shoulder
- Shared Use Pathway

#### EXISTING BICYCLE FACILITIES

##### BICYCLE LANES

**25.7** MILES

##### BIKEWAY (PAVED SHOULDER)

**70.7** MILES

##### SHARED USE PATHWAYS

**180** MILES

**Figure 2.2: Existing Bicycle Network | Chugiak-Eagle**



**Figure 2.3: Existing Bicycle Network | Downtown**

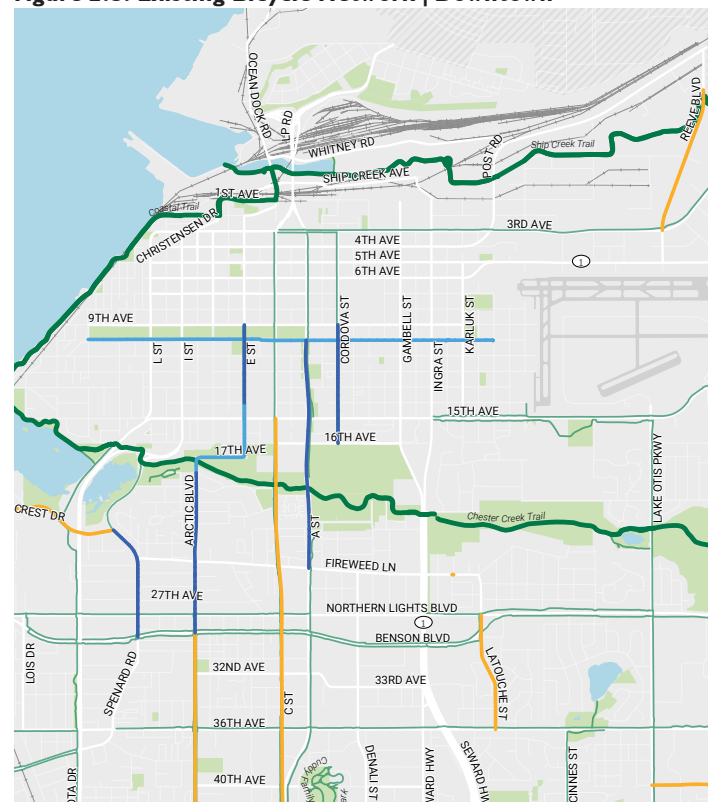
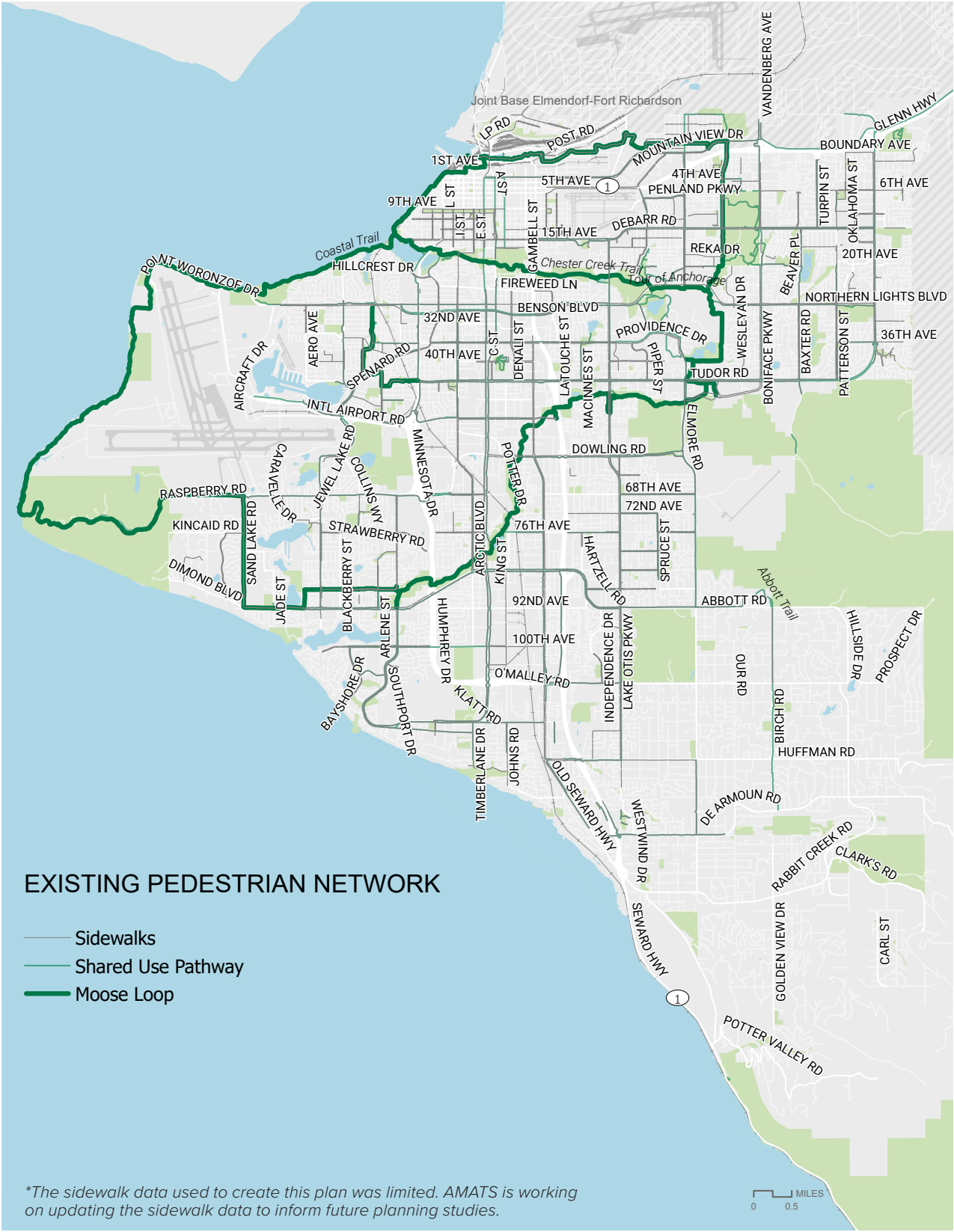




Figure 2.4: Existing Pedestrian Network\*



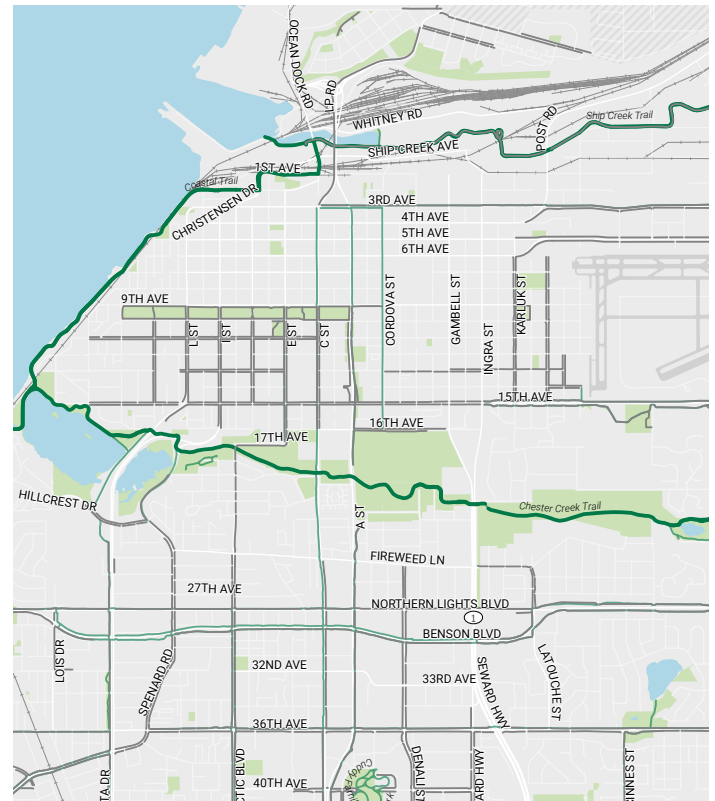
## Sidewalks

The sidewalk network presented in the Existing Pedestrian Network map (Figure 2.4) depicts only a portion of the existing sidewalk network available for pedestrians. The sidewalks included in these figures are those currently maintained by the Municipality of Anchorage and Alaska Department of Transportation & Public Facilities (ADOT&PF). Sidewalk data was unavailable for roadways maintained by other entities at the time of plan development. Sidewalks and/or sidepaths are available along many of the major arterials throughout the municipality and help provide connections to the existing shared use pathway network, destinations such as employment centers and shopping areas, and provide access into neighborhoods across Anchorage. In order to better understand the opportunities and challenges associated with the existing pedestrian network, a more comprehensive review that includes all sidewalk and sidepath segments as well as details regarding width, quality, and separation from roadway could help AMATS assess needed improvements. Further, incorporating detailed information regarding winter maintenance could assist the Municipality and AMATS in planning for a year-round network that accommodates all modes.

## Shared Use Pathways

Pedestrians are also served by the network of shared use pathways discussed earlier in this chapter. Though this plan often discusses shared use pathways in context of the bicycle network to avoid repetition, it is important to remember that they serve all types of users in all seasons.

**Figure 2.5: Existing Pedestrian Network | Downtown\***



*\*The sidewalk data used to create this plan was limited. AMATS is working on updating the sidewalk data to inform future planning studies.*

**Figure 2.6: Roadway Ownership Map**

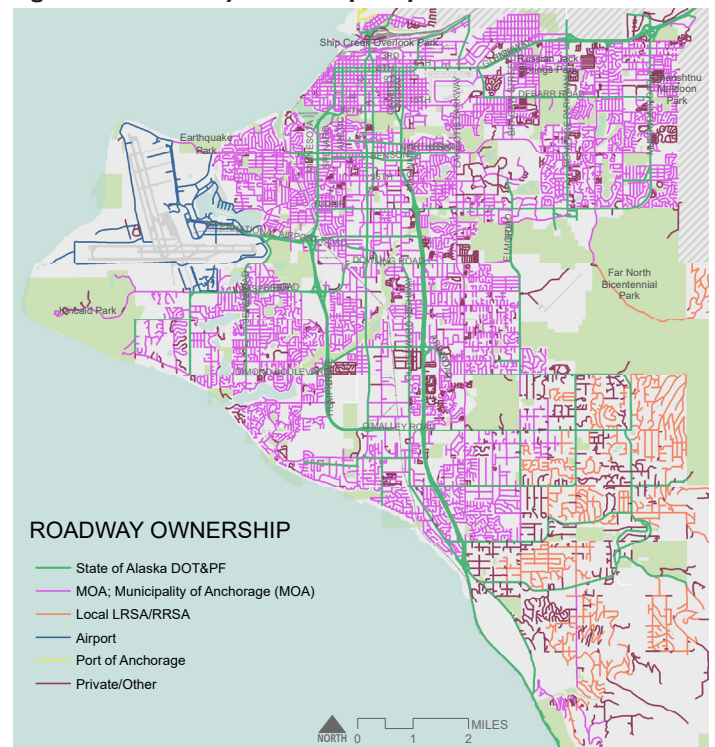
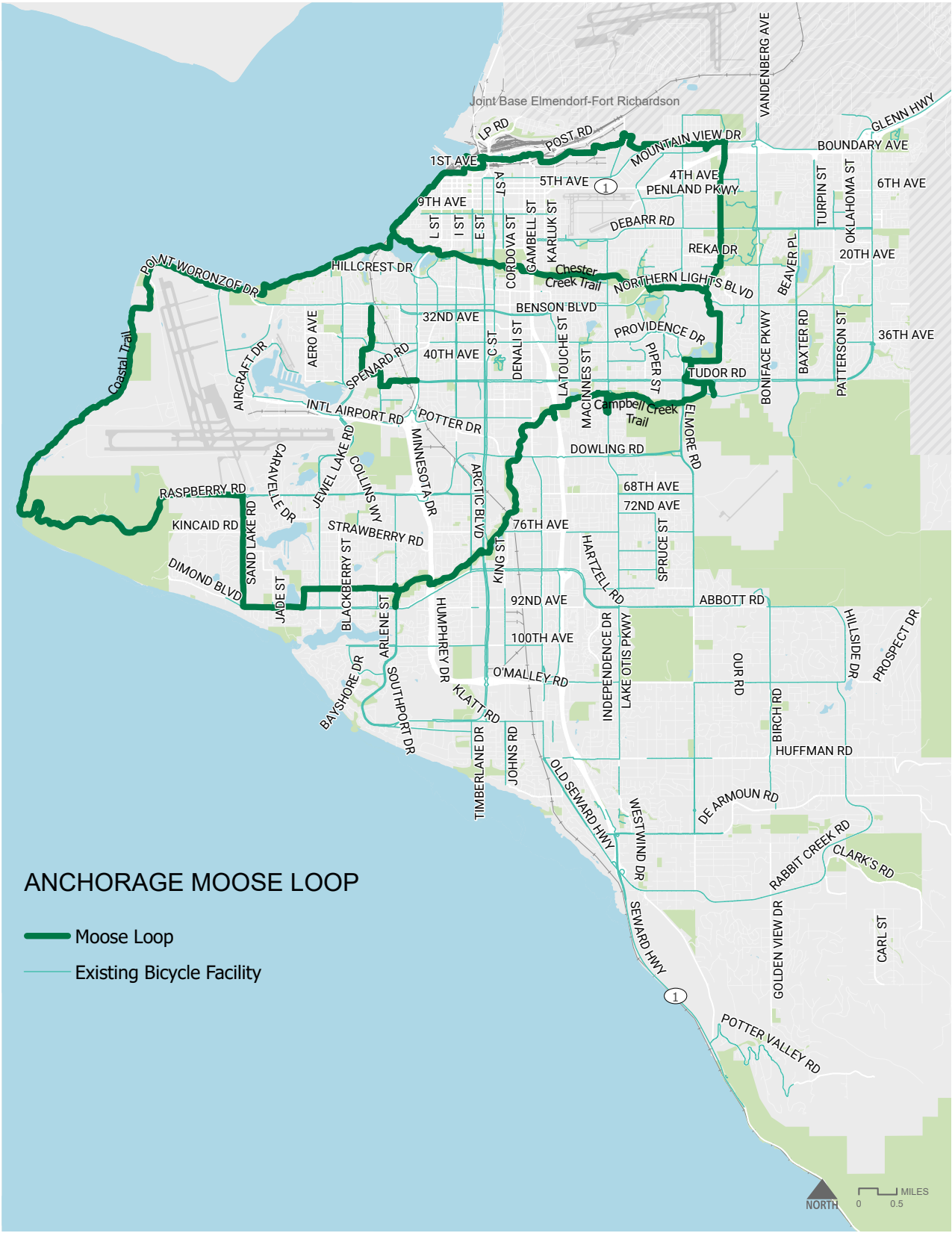


Figure 2.7: The Moose Loop trail route



## RECREATIONAL LOOP

The Moose Loop is a 32-mile trail loop that follows Anchorage's four main shared use paths: the Lanie Fleischer Chester Creek Trail, the Tony Knowles Coastal Trail, the Campbell Creek Trail, and the Ship Creek Trail. Naming this collective spine "Moose Loop" establishes a unique, memorable brand that can be used to foster economic vitality and celebrates Anchorage's Alaskan culture and way of life.

The Moose Loop was developed by a large group of stakeholders and the broader Anchorage community as unifying branding effort. A team of volunteers from the Anchorage Trails Initiative, part of AEDC's Live.Work.Play effort, analyzed connectivity routes for the Moose Loop and settled on an "official" route. Participants included representatives from Anchorage Economic Development Corporation, Anchorage Park Foundation, Bike Anchorage, Alaska Trails, Visit Anchorage, health care, engineering, and transportation professionals, and new bicycle users, among others.

When viewed on a map, the loop forms the shape of a moose (see map on facing page). The Moose Loop consists of four paved trails and several short on-road connections, and it connects dozens of parks with restaurants, shops, schools and attractions throughout the city. For more about the Moose Loop, visit, [anchorageparkfoundation.org/moose-loop-trail/](https://anchorageparkfoundation.org/moose-loop-trail/).



## VISION ZERO ANALYSIS

Vision Zero is “a strategy to eliminate all traffic fatalities and severe injuries while increasing safe, healthy, and equitable transportation for everyone” (MOA Vision Zero). The Anchorage Vision Zero Action Plan, which was finalized in 2018, is its most recent annual review of fatal and severe injury traffic crash trends. A summary of this report is provided here as analysis of the current state of traffic crashes in the AMATS planning area. This analysis, along with the Highway Safety Improvement Program's 2018 Priority Pedestrian Corridors study form the basis of this plans method to identify high conflict corridors .

**Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.**

(<https://visionzeronetwork.org/about/what-is-vision-zero/>)

### 17,610 people experienced crashes in the past 4 years.

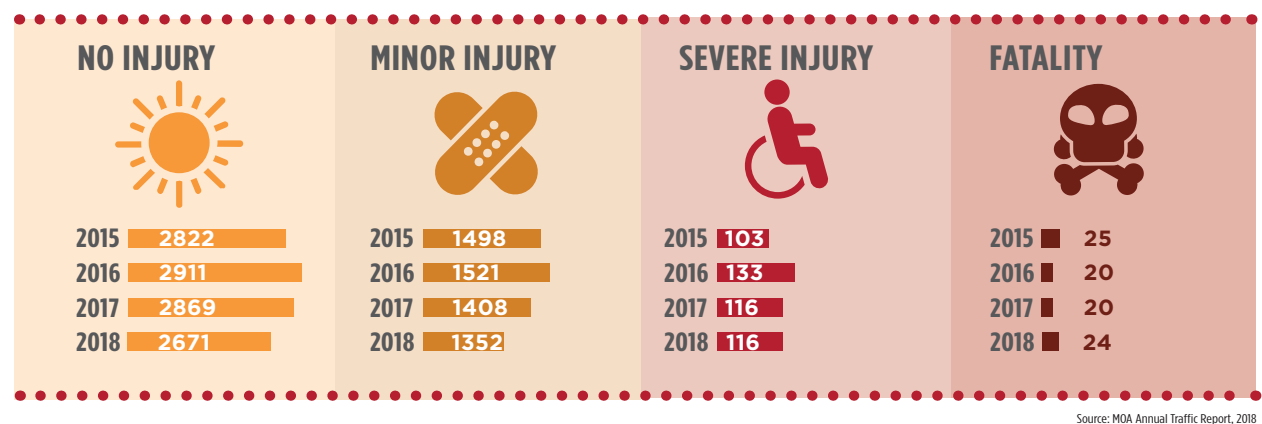


Figure 2.8: 4-Year Crash Summary Statistics, reproduced from the 2018 Anchorage Vision Zero Action

**An active community is a healthy community. Safe streets promote activity.**



**Getting enough physical activity could prevent 1 in 10 premature deaths.**



**1 in 15**  
HEART DISEASE



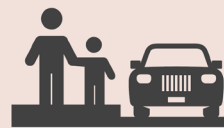
**1 in 8**  
COLORECTAL CANCER



**1 in 12**  
DIABETES



**1 in 8**  
BREAST CANCER



PEOPLE WHO LIVE IN NEIGHBORHOODS WITH SIDEWALKS ON MOST STREETS ARE

**47%**

MORE LIKELY TO BE ACTIVE AT LEAST 39 MINUTES A DAY.

Sources: 2017 AK BRESS  
2017-2018 AK SWSSS  
American Association of Retired Persons  
Centers for Disease Control and Prevention

Figure 2.9: Summary health statistics related to active lifestyles, reproduced from the 2018 Anchorage Vision Zero

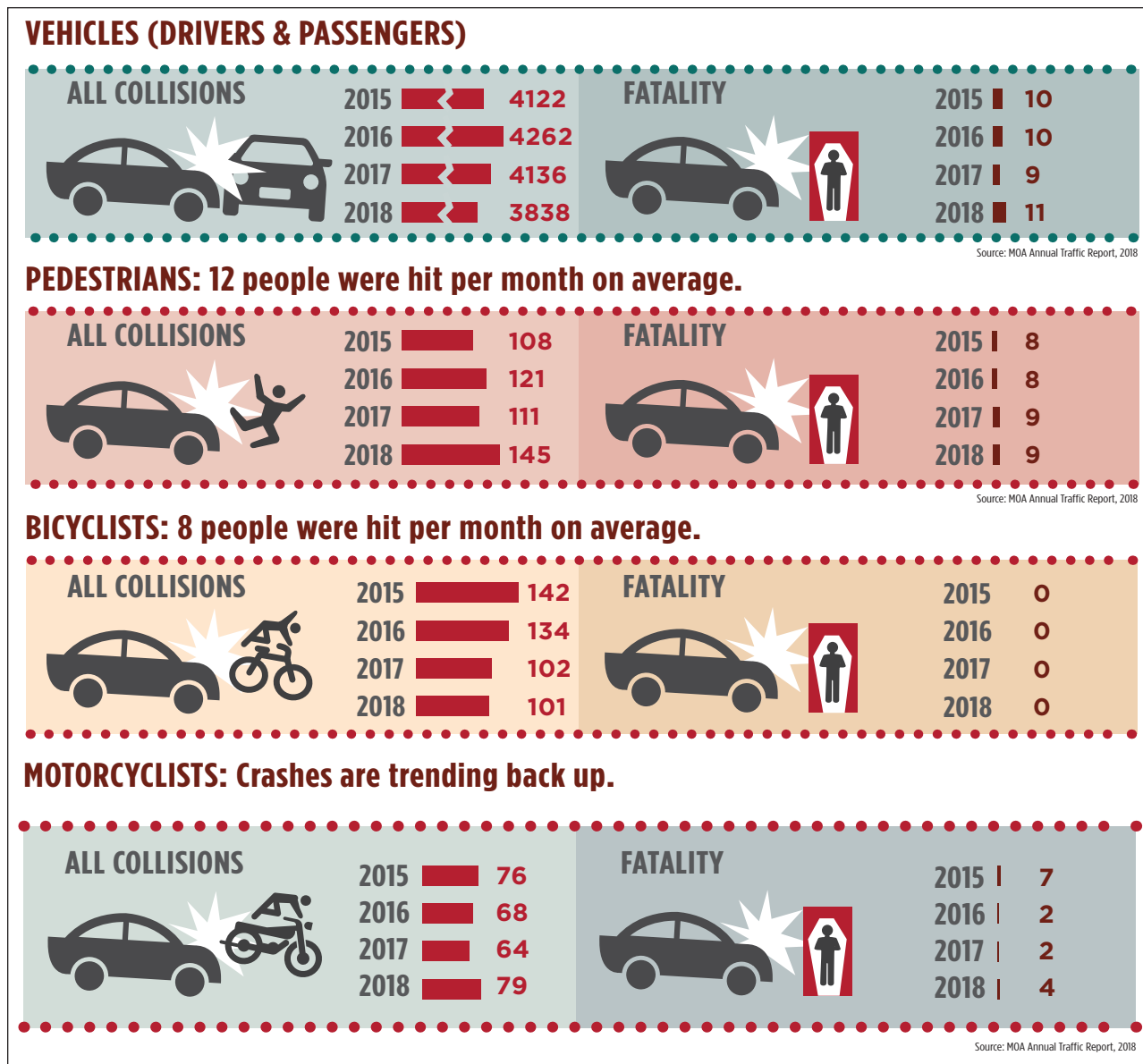


Figure 2.10: 2018 Crash statistics by mode, reproduced from the 2018 Anchorage Vision Zero

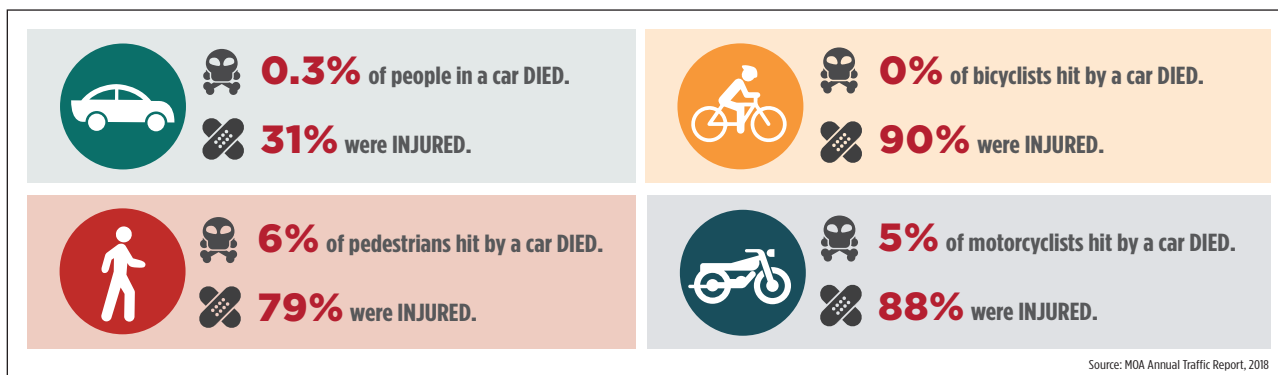


Figure 2.11: Most vulnerable road users, reproduced from the 2018 Anchorage Vision Zero

## High Injury Network

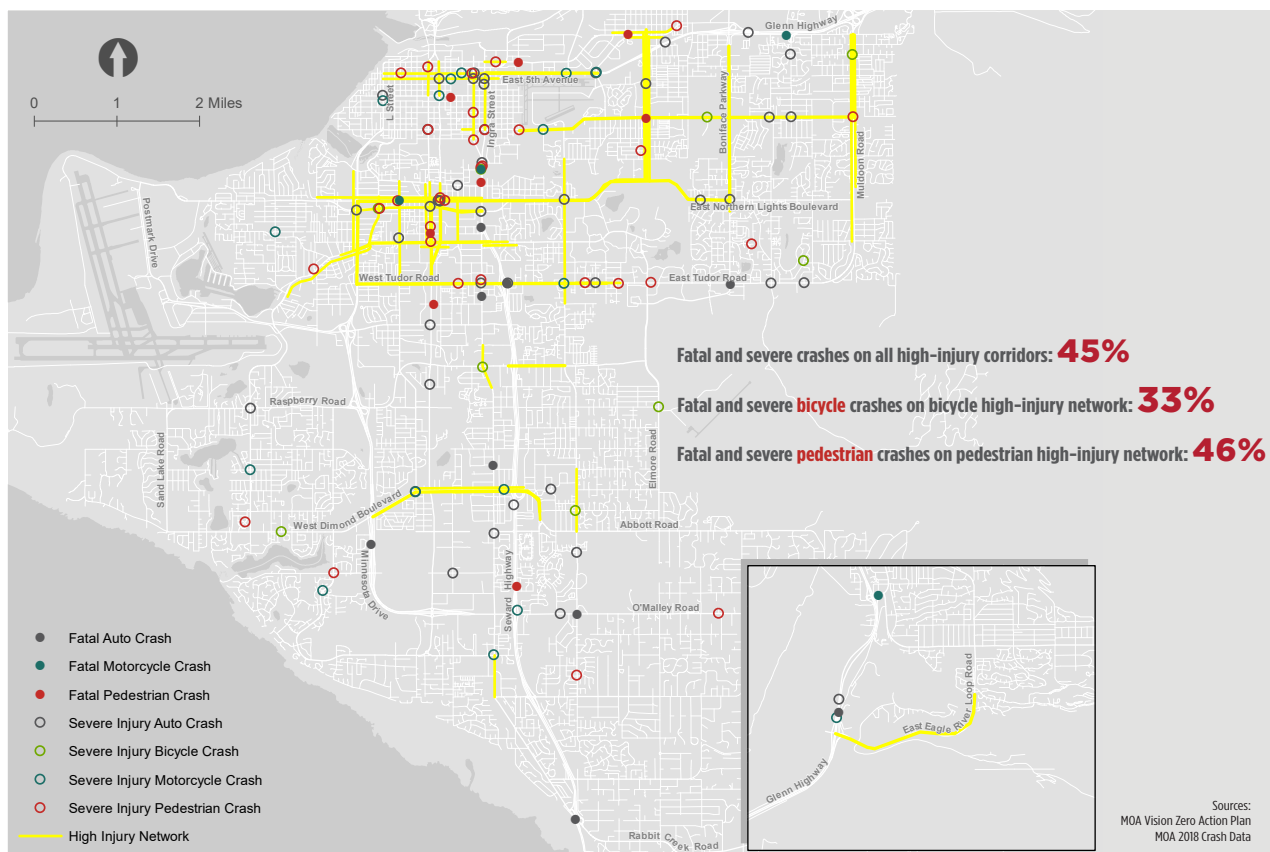


Figure 2.12: High Injury Network map, reproduced from the 2018 Anchorage Vision Zero Action



Figure 2.13: Costs associated with collisions, reproduced from the 2018 Anchorage Vision Zero Action

## Vision Zero Action Items

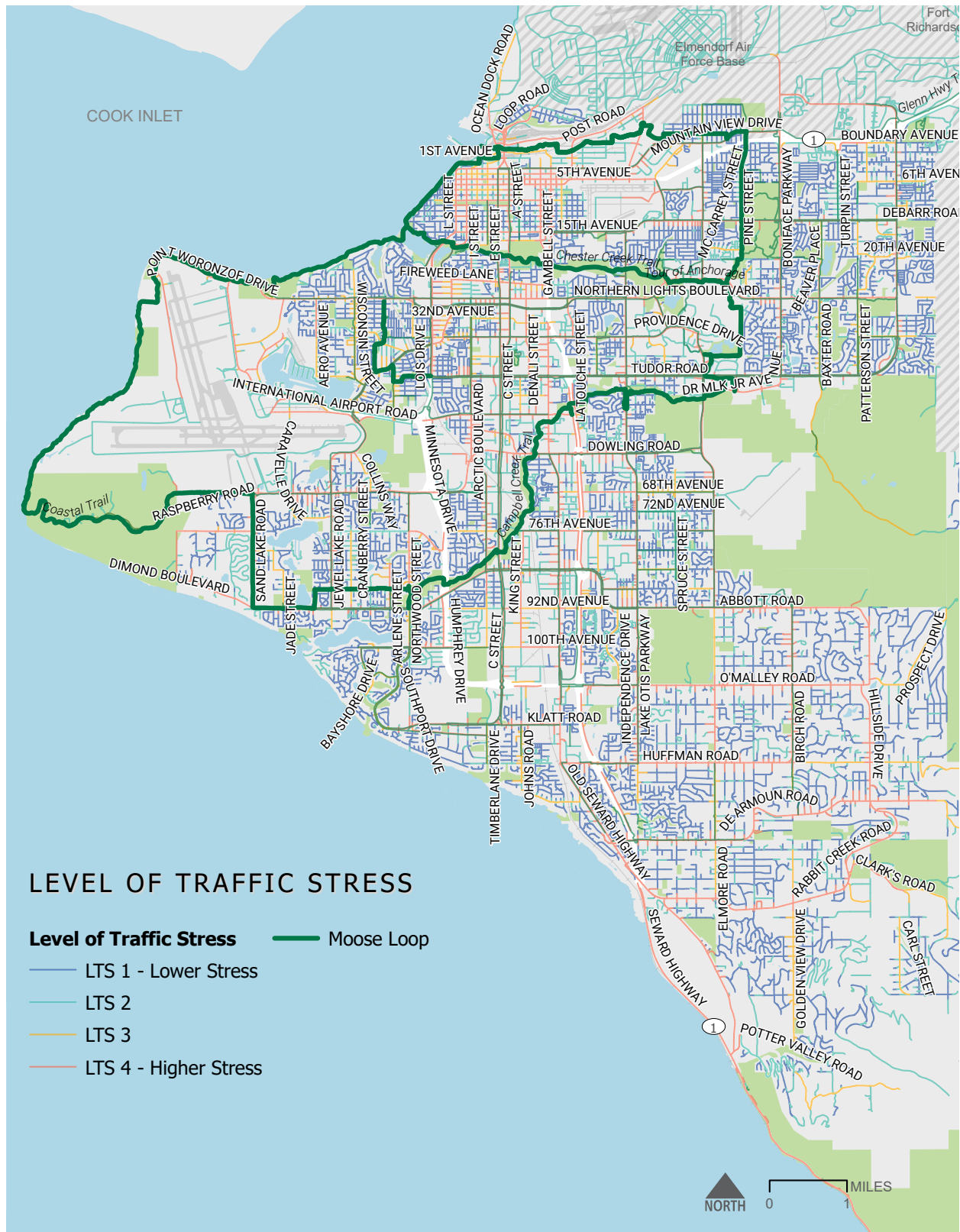
The Vision Zero Action Plan outlines a series of Action Items to work towards eliminating traffic-related injuries and deaths. Many of these Action Items directly relate to the NMP's goals, and are highlighted below. For the full list, go to: [www.muni.org/Departments/OCPD/Planning/AMATS/Documents/Vision\\_Zero/2018/2%20Anchorage\\_VZ\\_Report\\_ACTION\\_PLAN\\_122618.pdf](http://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/Vision_Zero/2018/2%20Anchorage_VZ_Report_ACTION_PLAN_122618.pdf).

**Table 2.2: Vision Zero Action Items related to the NMP's Goals**

ACTION ITEM	CATEGORY	LEAD AGENCY	RELATED NMP GOAL
Identify Vision Zero coordinator (full- or part-time position) within MOA lead agency to be committed to Vision Zero and establish plans and processes to institutionalize Vision Zero within the MOA.	Process and Collaboration	Director of Community & Economic Development	2, 3, and 7
Create a multi-agency Vision Zero Task Force that meets regularly to review traffic crash data, equity, transportation system performance, funding, and action plan progress	Process and Collaboration	MOA Lead Agency	2, 3, 6, and 7
When developing the Capital Improvement Program (CIP) and AMATS Transportation Improvement Program (TIP), prioritize transportation improvement projects that: <ul style="list-style-type: none"> <li>» Are on a Vision Zero high injury network,</li> <li>» Have a documented vulnerable user safety concern identified by data, or</li> <li>» Provide a comparable alternative route to the high injury network for vulnerable users.</li> </ul>	Build Safer Streets for Everyone	MOA Departments, AMATS	1, 2, 3, 5, and 6
Hold one Vision Zero demonstration project—ideally to coincide with another crowd-drawing community event	Promote a Culture of Safety	PM&E, Traffic Engineering, Vision Zero Coordinator	1, 2, 3, 5, and 6
Create a Vision Zero concerns map.	Promote a Culture of Safety	Vision Zero Coordinator, GIS	1, 2, 3, 5, and 6
Develop and implement a plan for more consistent and efficient data gathering, analysis, and reporting.	Improve Data Collection, Analysis and Accessibility	MOA Lead Agency with MOA Traffic, ADOT&PF, APD, AK Trauma Registry	6 and 7
Work with APD to improve data collection on speed, impairment and distraction (behavior) for all crashes	Improve Data Collection, Analysis and Accessibility	MOA Lead Agency with APD	6 and 7



**Figure 2.14: Level of Traffic Stress**



## LEVEL OF TRAFFIC STRESS

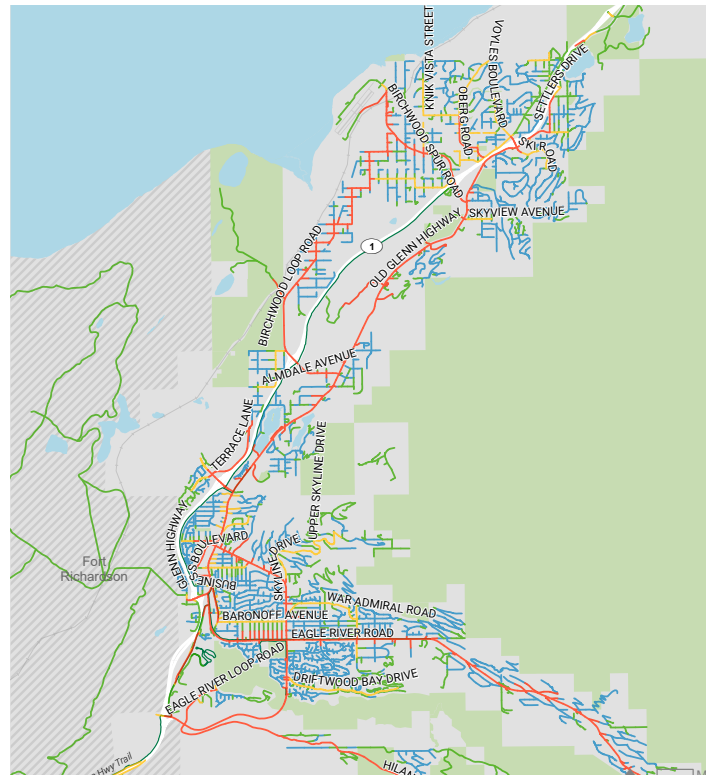
Specific to bicycle travel, the Level of Traffic Stress (LTS) analysis provides further insight into the current conditions impacting travel throughout the network. The framework can be used to describe the benefits of bicycle infrastructure and demonstrate that some roadways need more intervention than others to provide a truly comfortable experience. Adapted from the 2012 Mineta Transportation Institution Report 11-19: Low-Stress Bicycling and Network Connectivity, the analysis considers the impacts of posted speed limit, street width, and the presence and character of bicycle lanes. The combination of these criteria separates the bicycle network into one of four scores, described as follows.

In general, separated facilities provide more comfortable travel, while roadways without designated facilities, high speeds, and a greater number of travel lanes will be less comfortable.

Neighborhood roadways provide relatively low stress routes for many residents. Higher stress roadways, however, create barriers for travel between these neighborhoods and other low stress areas. When the paved shared use pathway network and roadways designated as bicycle facilities are evaluated together, the level of traffic stress is greatly improved. With sidepaths running alongside many arterials on at least one side of the roadway, these shared use pathways provide lower stress routes for roadways that would otherwise serve as network barriers. In this evaluation, shared use pathways were not included in the LTS analysis, only the roadways themselves. However, the shared use paths are shown on the maps.

For sidepaths, it is important to note that while they run alongside major roadways and cross minor roadways and driveways, bicyclists along these shared use pathways may be impacted by turning movements across the pathway alignment. An important consideration for sidepath design is the safety of bicyclists at roadway and driveway crossings with high numbers of turning movements.

**Figure 2.15: Level of Traffic Stress | Chugiak-Eagle River**



**Figure 2.16: Level of Traffic Stress | Downtown**

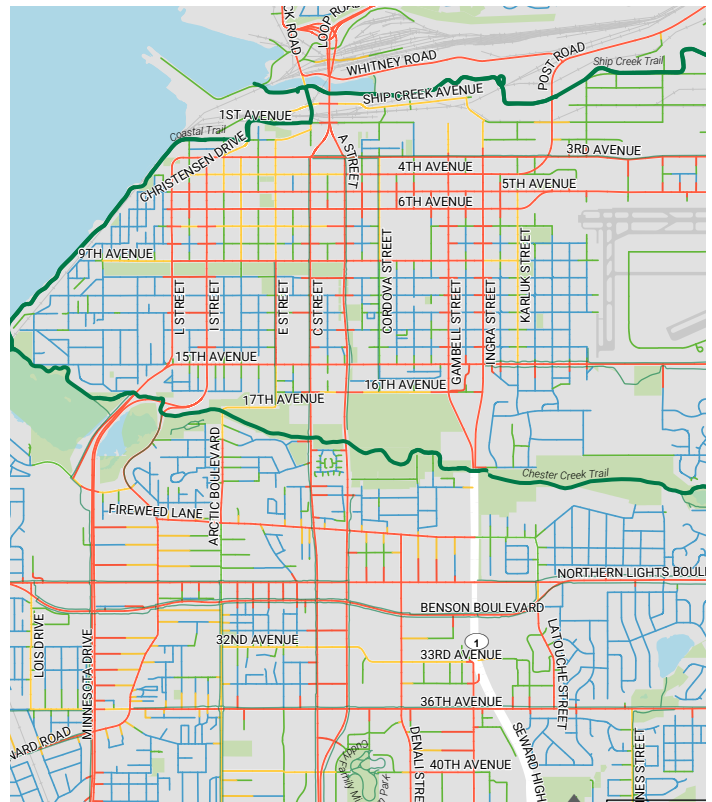
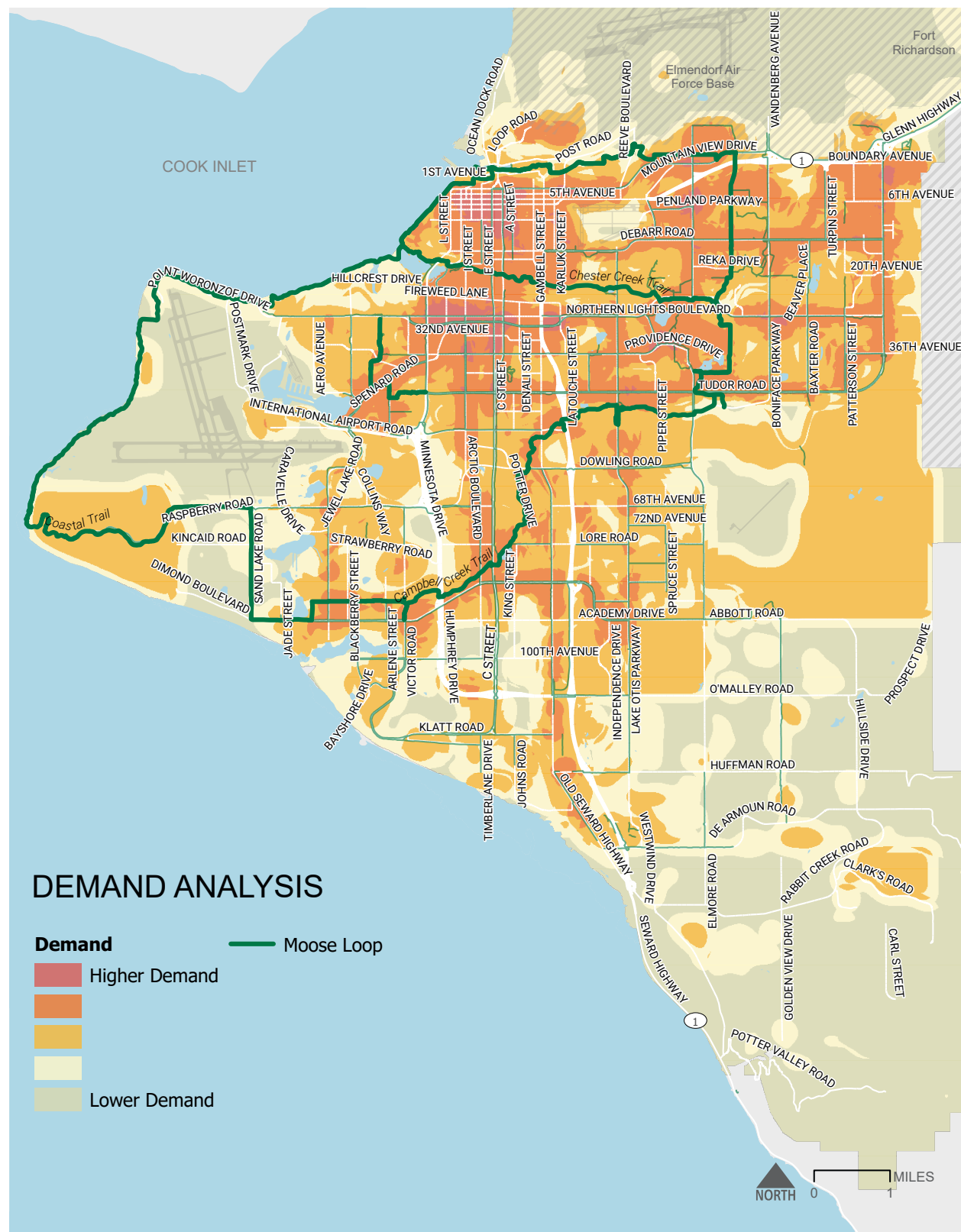


Figure 2.17: Demand Analysis



## DEMAND ANALYSIS

Understanding the potential demand for active transportation facilities can help identify where proposed improvements may have the most impact in a community. Potential demand for walking and bicycling is assessed through evaluation of where people live, work, play, shop, access transit, and go to school. These locations represent trip generators (where a trip begins) and trip attractors (where a trip ends); areas with a higher density of these locations will represent an area of greater potential demand. For this analysis, each category was first assessed on its own; the results were then combined to highlight areas with high potential demand. The composite demand analysis is shown in Figures 2.17 and 2.18.

In general, higher demand is found along major roadways throughout the AMATS Planning area. Other areas, such as Downtown or near Arctic Boulevard, Northern Lights Boulevard, and Benson Boulevard, also show high potential demand. In Chugiak-Eagle River, higher relative demand is found in the vicinity of Old Glenn Highway and Eagle River Road.

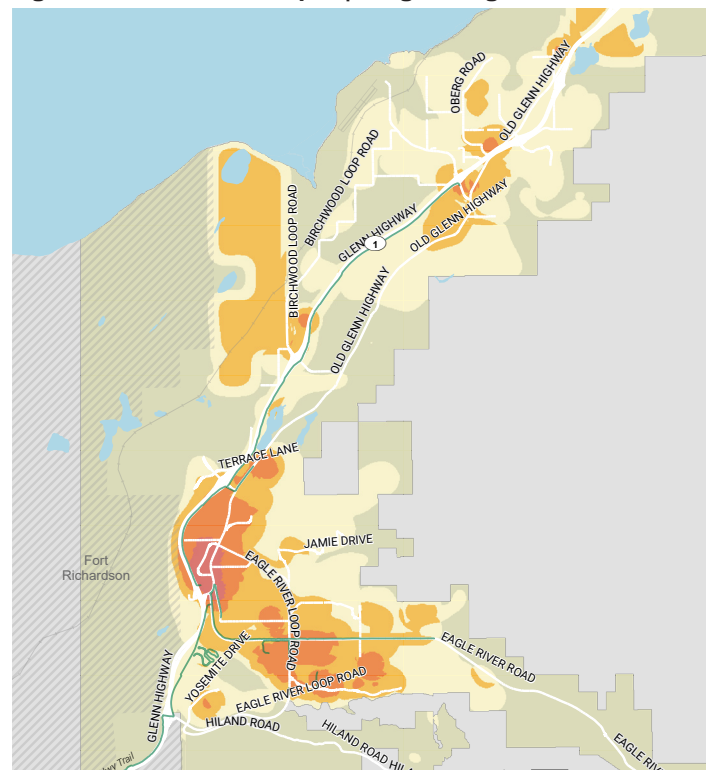
When analyzed separately, where people work, shop, and access transit are distributed similarly, with greater concentration seen along major roadway corridors. However, where people go to school, live, and play are distributed with greater density away from major roadway corridors.

Building on the LTS analysis highlighted in Section 2.3, the accompanying maps consider the relationship of higher stress corridors and areas of high demand. Shown in Figures 2.17 and 2.18, the areas with highest demand generally coincide with higher stress roadways. These findings also need to be considered in relation to future population growth. The 2040 Land Use Plan included a growth analysis that depicts where growth will be accommodated with Transit Supportive Development (TSD) and Greenway Supportive Development (GSD) over the next 20 years. TSDs are located on corridors where expanded transit service is happening or planned and can support compact, walkable development, including mixed

use. Over time, residents and employees in these corridors have greater choices on how to get to home and to other destinations. GSDs are locations where as development occurs, these developments have the opportunity to incorporate open space, creek corridors, and pedestrian routes that can link up to the larger greenway system. Many of these TSD and GSD corridors coincide with the major roadways that are also identified as high-demand corridors; see Chapter 4 for maps identifying these corridors.

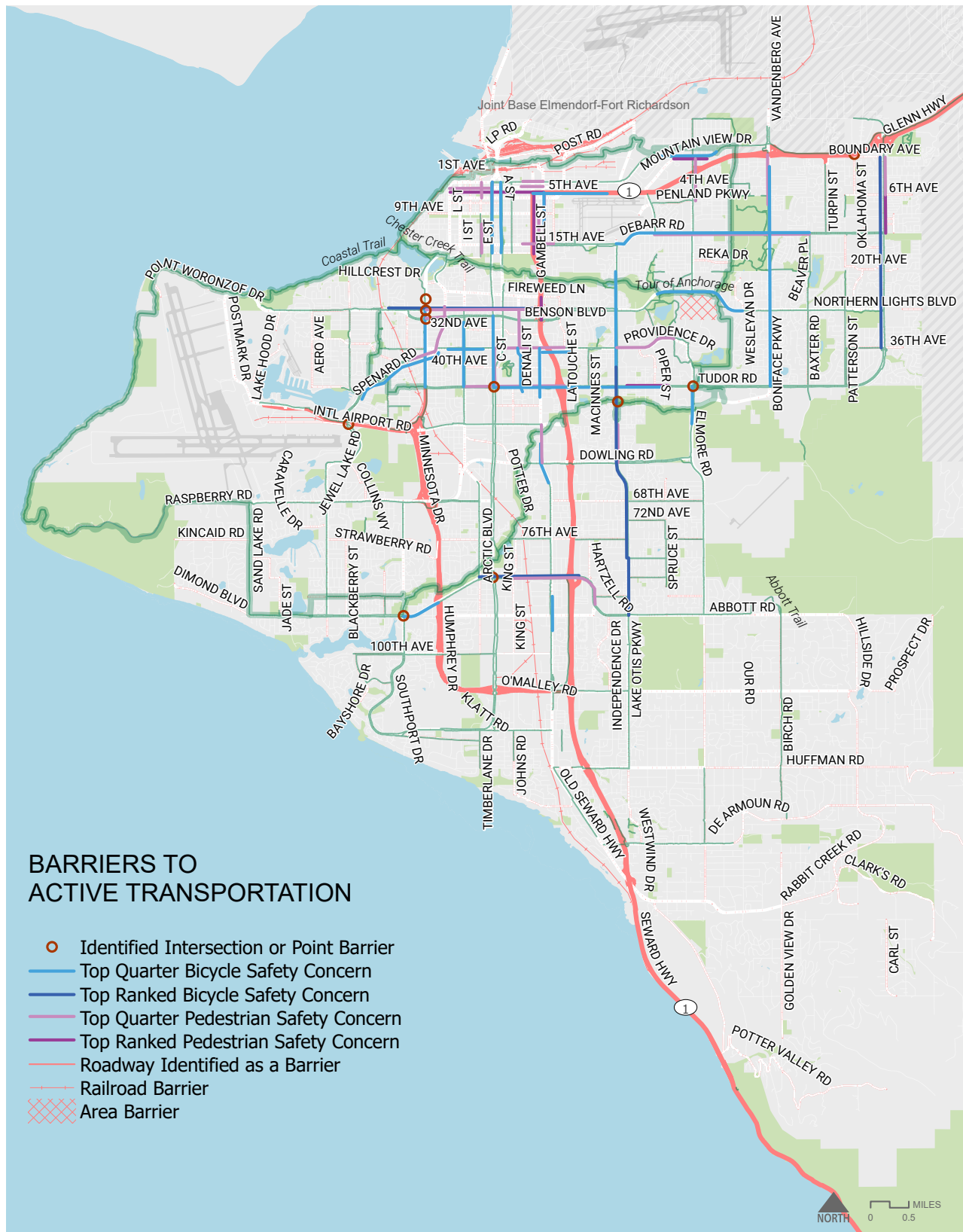
Based on these findings, it is important to consider the ways in which bicyclists and pedestrians are able to access centers of high demand in order to promote greater multimodal connectivity. Not only should low-stress facilities be considered in or near these locations, but also careful consideration of crossings is necessary during implementation.

**Figure 2.18: Demand Analysis | Chugiak-Eagle River**





**Figure 2.19: Barrier Analysis**



## BARRIER ANALYSIS

As part of the existing conditions review, roadways that act as barriers to non-motorized transportation were assessed. The barriers, shown on Figures 2.19 through 2.21 were identified through public engagement, review of the Vision Zero Plan, Alaska State Highway Safety Improvement Plan and consultation with AMATS staff. These barriers are typically multi-lane arterial roadways that have higher posted speeds and motor vehicle volumes.

While several of these corridors, such as Tudor Road, do feature sidepaths, it should be noted that gaps in the sidepath network, alignment along only one side of the roadway, and unsignalized crossings limit the utility and comfort of these facilities.

There is inconsistent connectivity in the existing non-motorized network. For instance, a shared use trail along Glenn Highway connects Anchorage to Eagle River to the north, but a similar facility does not accompany Seward Highway to the south to Girdwood.

In addition, it is also noteworthy that there are numerous small gaps in the existing network of bicycle lanes—bicycle lanes that drop out on sections of Wisconsin Street and Arctic Boulevard, for instance—that are real stressors for bicyclists and are barriers to others who would consider biking. Limited data availability precludes the accurate depiction of these short gaps in the maps on these pages.

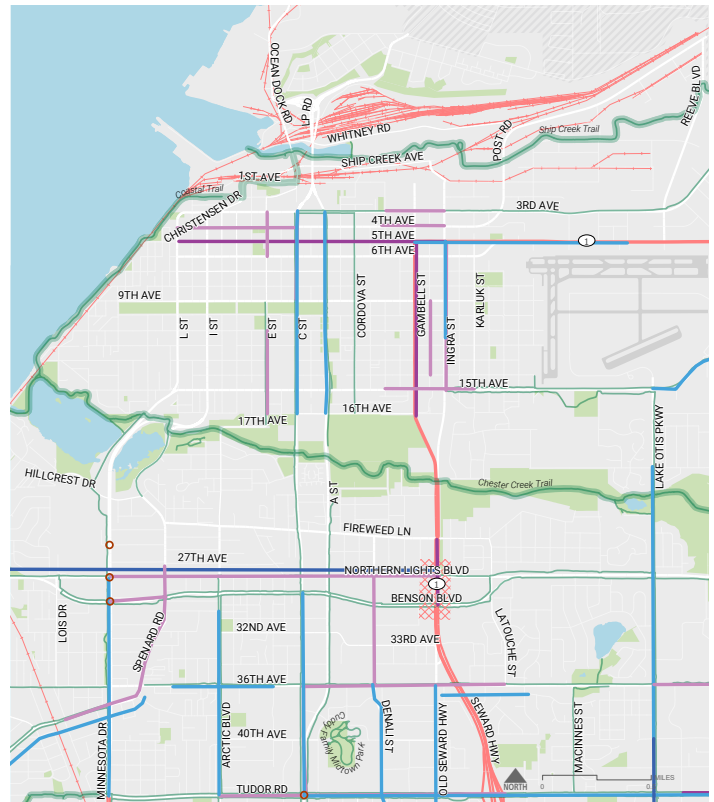
## Lighting

Proper lighting is an integral part of pedestrian and bicycle network design to ensure safe walking and riding conditions during non-daylight hours. Feedback from the public identified the lack of pedestrian- and bicycle-scaled lighting as a barrier to using the existing non-motorized facilities.

**Figure 2.20: Barrier Analysis | Chugiak-Eagle River**



**Figure 2.21: Barrier Analysis | Downtown**



## 2.4 Health and Equity

Like the built environment indicators evaluated in Section 2.3, demographic indicators help determine where network improvements are needed. In this section, both equity indicators and health outcomes are assessed.

Some people choose to walk, bicycle and take transit, but have other options for their personal mobility, such as driving. For others, walking, bicycling and transit are their only options for transportation. Those who use these modes out of necessity tend to correspond to lower-income, lower-education, and other at-risk populations described on the facing page. Making improvements for this demographic is critical, since they rely on walking, bicycling and transit to meet their daily needs.

Further, active transportation allows for physical activity to be integrated into a daily routine, thereby reducing the risk of a number of adverse health outcomes. Specifically, physical activity from active transportation is associated with reductions in overweight/obesity, high blood pressure, diabetes, heart disease asthmas, and some cancers. Communities designed to promote safe and connected active transportation are positively associated with greater levels of physical activity among residents and consequently, improved resident health.

### EQUITY

The equity analysis considers demographic factors, that when combined, indicate where there are concentrations of historically vulnerable populations. Active transportation investments in these areas could help alleviate a broader range of issues (access to jobs, education, and healthcare, for example). Further, many of these indicators are also considered social determinants of health and can provide

insight into resident needs when considered in combination with data on health outcomes described in this section. This analysis brings attention to neighborhoods or corridors that may be most in need of improvements, and provides a starting point for identifying priority areas.

The equity analysis for the AMATS NMP uses a combination of seven socioeconomic characteristics as indicators to identify vulnerable populations. The indicators include:

- » Age: Individuals under the age of 18 and over the age of 65 are assessed separately within this indicator, as these age groups may have less access to motor vehicles and may rely more on active modes of transportation.
- » Race: This indicator measures the percentage of the population that identifies as non-white.
- » Income: This indicator measures individuals of working age living at or below 200% of the Federal Poverty Level, which is a threshold set by the U.S. Census Bureau and is updated annually.
- » Educational Attainment: This indicator represents the percentage of the population over 25 years of age that does not have a high school diploma or equivalent.
- » Limited English Proficiency (LEP): This indicator measures the percentage of the population that identifies as not speaking English well or at all.
- » Access to a Vehicle: This indicator measures the percentage of households that do not have regular access to a motor vehicle.

Data for each indicator is from the American Community Survey, 2017 5-year Estimates, analyzed at the census tract level.<sup>1</sup> The rationale for each indicator is presented on the following page.

**Figure 2.22: Equity Analysis Findings**

## AGE



Age: On average, 24% of the population within the AMATS Planning area is under the age of eighteen, and 9% of the population is sixty-five or older. Youth are more highly concentrated in the north and east of the planning area and within Chugiak-Eagle River; while older adults are more highly concentrated in Bayview, Hillside, Rogers Park, Scenic Foothills, and South Addition areas.

## NON-WHITE POPULATION



Race: Approximately 38% of the population is non-white in the AMATS Planning area. The northern and central neighborhoods within the planning area have the highest concentrations of non-white populations.

## INCOME



Income: The mean concentration of households living in poverty is around 24% across all AMATS-area census tracts. The highest concentrations are found near the Mountain View, Fairview, Government Hill, Airport Heights, and Spenard areas, among other northern neighborhoods.

## EDUCATIONAL ATTAINMENT



Educational Attainment: Across all AMATS-area census tracts, a mean value of 8% of residents do not have a high school education. North and central neighborhoods exhibit the highest concentration of this population.

## LIMITED-ENGLISH PROFICIENCY (LEP)



Limited-English Proficiency (LEP): The average concentration of LEP populations is approximately 2% among AMATS-area census tracts. The highest concentrations are found in the Bayshore/Klatt, Abbott Loop, Taku/Campbell, Midtown, Spenard, Mountain View, and Government Hill areas.

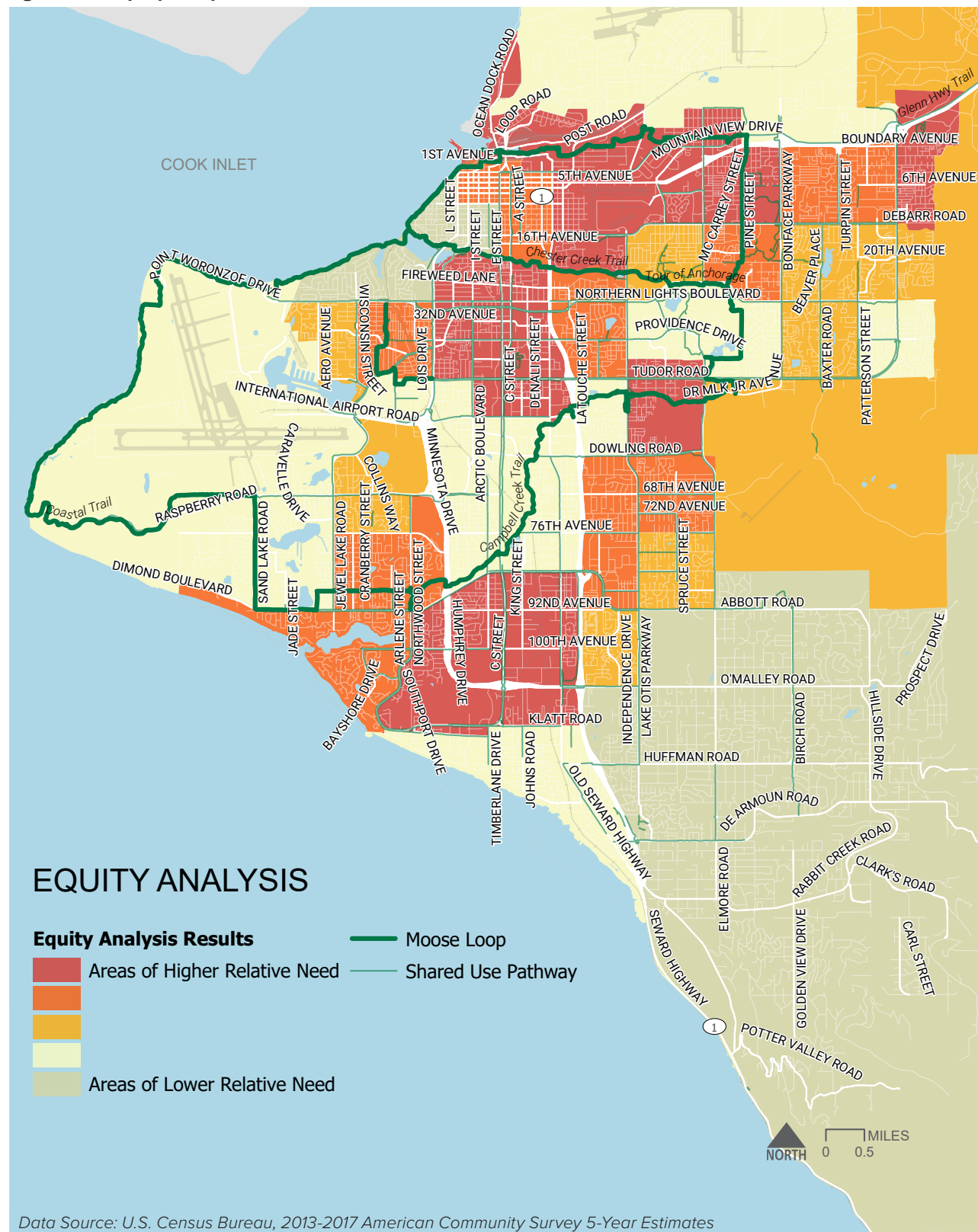
## VEHICLE ACCESS



Motor Vehicle Access: Across AMATS-area census tracts, the average rate of population without access to a motor vehicle is 6% (some areas have up to 24% of the population without access). The northern and central neighborhoods have the highest concentration of population without motor vehicle access.



**Figure 2.23: Equity Analysis**



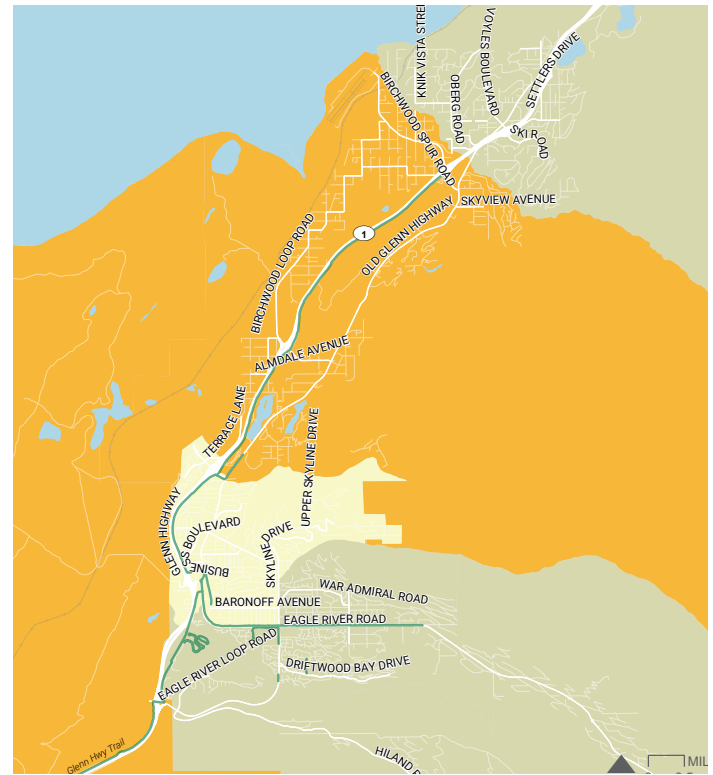
Figures 2.23, 2.24, and 2.25 display a composite map of the indicators combined. The composite value displayed is the sum of the values from each of the indicators:

- » Age
- » Race
- » Income
- » Educational Attainment
- » Limited English Proficiency (LEP)
- » Access to a Vehicle

Darker census tracts represent areas of higher relative need.<sup>1</sup> Investing in active transportation improvements in these areas has the opportunity to positively impact health and equity outcomes.

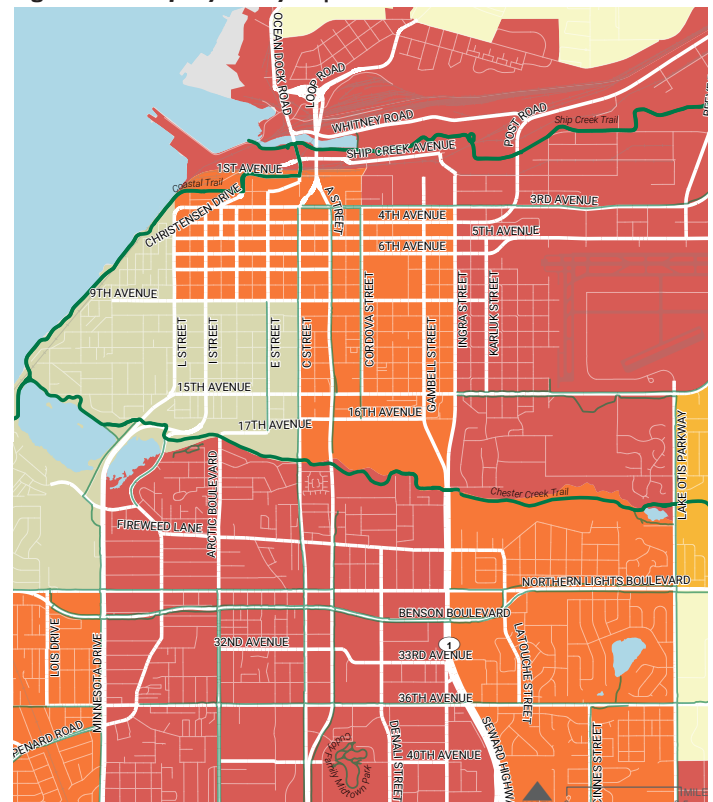
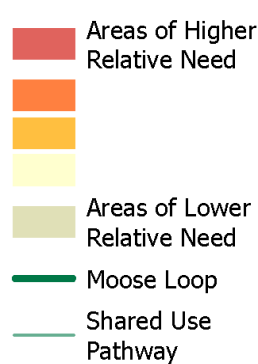
<sup>1</sup> This analysis provides a relative comparison of census block groups. Large census block groups with minimal population density can skew the results of this analysis.

**Figure 2.24: Equity Analysis | Chugiak-Eagle River**



Data Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

**Figure 2.25: Equity Analysis | Downtown**



Data Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

## HEALTH

The health analysis utilizes data available at the census tract level through the Centers for Disease Control and the 500 Cities Project.<sup>2</sup> The seven indicators of health selected correspond to the leading causes of death and disease in Alaska that can also be reduced, relieved, and/or prevented through increased walking and biking. The seven indicators described in detail are as follows:

- » Obesity Prevalence
- » Coronary Heart Disease Prevalence
- » Leisure-Time Physical Activity
- » Cancer Prevalence
- » Diabetes Prevalence
- » Poor Mental Health Prevalence
- » Asthma Prevalence

## FINDINGS

In general, census tracts with more adverse health outcomes and behaviors also have high composite equity scores. Generally in the northern and central parts of the AMATS Planning area, this means that these areas of AMATS are not only experiencing the worst health outcomes in the areas, but they also represent communities with high numbers of disadvantaged and minority populations. Recommendations from this plan explore the ways in which non-motorized improvements can help improve access to services and provide opportunity for physical activity for these residents.

**Figure 2.26: Health Indicators****OBESITY PREVALENCE**

Indicator: Obesity is associated with a number of serious chronic illnesses and is linked to three of the five leading causes of death in the AMATS Planning area (2013).<sup>3</sup>

Rationale: Walking and bicycling for transportation allows residents to incorporate physical activity in their daily routines. Evidence indicates that for every 0.62 miles walked per day, there is an associated 5% reduction in the likelihood of obesity.<sup>4</sup> Within Anchorage, the Government Hill, Mountain View, and areas of the Fairview neighborhoods exhibit the highest rates of obesity.

**CORONARY HEART DISEASE PREVALENCE**

Indicator: Coronary Heart Disease (CHD) is the second leading cause of death in Alaska and Anchorage.<sup>5,6,7</sup> While genetic factors do play a role in one's risk for CHD, a number of risk factors are highly preventable, including diabetes, overweight/obesity, and physical inactivity.<sup>8</sup>

Rationale: Increased walking and bicycling can reduce the prevalence of many of the highly-preventable CHD risk-factors; programs and policies implemented by the planning area can further support increase walking and bicycling. Government Hill, Mountain View, and Downtown neighborhoods exhibit the highest rates of CHD prevalence within the AMATS Planning area; overall, the planning area has a higher prevalence rate than the state (4.2% compared to 2.4%).<sup>9, 10</sup>

**LEISURE-TIME PHYSICAL ACTIVITY**

Indicator: Physical inactivity and sedentary lifestyles contribute to an increased incidence of obesity along with numerous related conditions, such as high blood pressure, heart disease, diabetes, congestive heart failure, stroke, and certain types of cancers.<sup>11, 12</sup>

Rationale: Active transportation is one of the easiest ways for adults to achieve the Surgeon General's recommended amount of weekly physical activity. Active transportation is more likely to occur when efficient and safe infrastructure, programs, and policies for walking and bicycling are in place. The Government Hill and Mountain View neighborhoods exhibit the highest prevalence of physical inactivity, while the AMATS Planning area as a whole has a prevalence rate of 18.5%.<sup>13,14</sup>



**Figure 2.26: Health Indicators (continued)****CANCER PREVALENCE**

Indicator: Cancer is the leading cause of mortality in Anchorage and Alaska.<sup>15,16</sup> Although the exact cause of most cancers is unknown, certain preventable risk factors have been linked with cancer, including obesity and physical inactivity.<sup>17</sup>

Rationale: Increased physical activity may reduce the risk of obesity, which in turn can have an impact on cancer rates. Cancer rates vary across the AMATS Planning area, with higher prevalence in the northwest portion of the area abutting Cook Inlet.<sup>18</sup>

**DIABETES PREVALENCE**

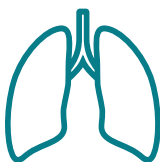
Indicator: Diabetes is the seventh leading cause of death in Alaska.<sup>25</sup> While genetic factors contribute to one's risk of developing diabetes, there are many preventable factors that can reduce a person's likelihood of developing the disease. These include: overweight/obesity, physical inactivity, high blood pressure, and abnormal cholesterol.<sup>26, 27, 28</sup>

Rationale: Improving the safety, access, and availability of active transportation infrastructure, policy, and programming can provide opportunities for increase physical activity and an associated reduced risk for diabetes. Within the AMATS Planning area, the northern area of Anchorage exhibited the highest prevalence rates.<sup>29</sup>

**POOR MENTAL HEALTH PREVALENCE**

Indicator: Individuals who report 14 or more days per month of poor mental health illuminates where individuals experience chronic and sometimes severe mental health issues. Creating more livable, healthy, and well-connected communities has a direct impact on many of the factors that can help mitigate mental illness.

Rationale: Promoting increased bicycle and pedestrian activity is directly related to improved mental health and fitness. One study found that bicycling improves self-confidence, tolerance to stress, and overall well-being; while another study indicates that 30 minutes of daily moderate intensity physical activity at least three days a week is associated with reduced anxiety, depression, and improved self-esteem.<sup>22, 23</sup> The northern area of Anchorage has the highest prevalence of poor mental health within the AMATS Planning area.<sup>24</sup> Seasonal Attention Deficit Disorder (SADD) is a contributor to depression in northern climates. Besides using artificial means to address SADD, outdoor activities such as walking, biking and exercise help alleviate the effects of SADD.

**ASTHMA PREVALENCE**

Indicator: Chronic lower respiratory disease, inclusive of asthma, is the fourth leading cause of death in Alaska and the fifth leading cause in Anchorage.<sup>19,20</sup> Air pollution is a well-established trigger for asthma.

Rationale: Improved active transportation infrastructure and access, as well as separated and non-motorized facilities have been shown to reduce the amount and exposure to air pollutants from motor vehicles. The highest prevalence rates of asthma are found in the northern portion of the Planning area.<sup>21</sup> Wood burning, second-hand smoke, and airtight housing for energy efficiency, are also contributors to asthma.

## CHAPTER 2 ENDNOTES

- 1 United States Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.
- 2 500 Cities Project, Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion <https://www.cdc.gov/500cities/index.htm>, accessed (insert date)
- 3 Centers for Disease Control and Prevention. (2017). Leading Causes of Death. Retrieved from <http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>. The Alaska Bureau of Vital Statistics. (2015). Top Five Leading Causes of Death for Anchorage. Retrieved from: [http://dhss.alaska.gov/dph/VitalStats/Documents/stats/death\\_statistics/leading\\_causes\\_census/body3.html](http://dhss.alaska.gov/dph/VitalStats/Documents/stats/death_statistics/leading_causes_census/body3.html)
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- 6 Alaska Department of Public Health. (2017). Leading Causes of Death in Alaska, 2015. Retrieved from [http://dhss.alaska.gov/dph/VitalStats/Documents/PDFs/LeadingCausesofDeath\\_2015.pdf](http://dhss.alaska.gov/dph/VitalStats/Documents/PDFs/LeadingCausesofDeath_2015.pdf).
- 7 The Alaska Bureau of Vital Statistics. (2015). Top Five Leading Causes of Death for Anchorage. Retrieved from: [http://dhss.alaska.gov/dph/VitalStats/Documents/stats/death\\_statistics/leading\\_causes\\_census/body3.html](http://dhss.alaska.gov/dph/VitalStats/Documents/stats/death_statistics/leading_causes_census/body3.html)
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