

Transportation Plan

June 2024



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City of Homer

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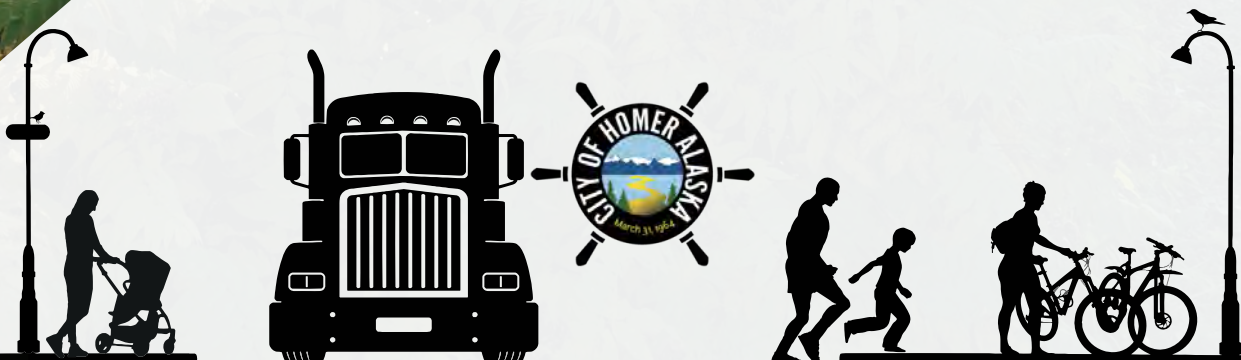


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Introduction



The City of Homer is the largest city on the southern Kenai Peninsula and serves as a central hub for goods and services for nearby communities. Within the city limits, Homer has a population of about 5,719; however, an estimated 12,200 individuals reside within a 15-mile radius of Homer. With the arrival of seasonal residents and visitors during tourist season, the community experiences significant increases in vehicular traffic.

This **Homer Transportation Plan** presents the goals and objectives for the Homer transportation network and describes policies, actions, and projects

that will help to achieve those goals over the next 20 years. The Transportation Plan falls under the umbrella of the Homer Comprehensive Plan which looks at land use and development throughout the City and provides a broad overview on the interaction between land use and transportation. This Transportation Plan will provide additional detail regarding the transportation network and will support the City’s land use and development goals. *Table 1* presents previous City of Homer plans that relate to the transportation plan and *Table 2* presents pending and ongoing projects.

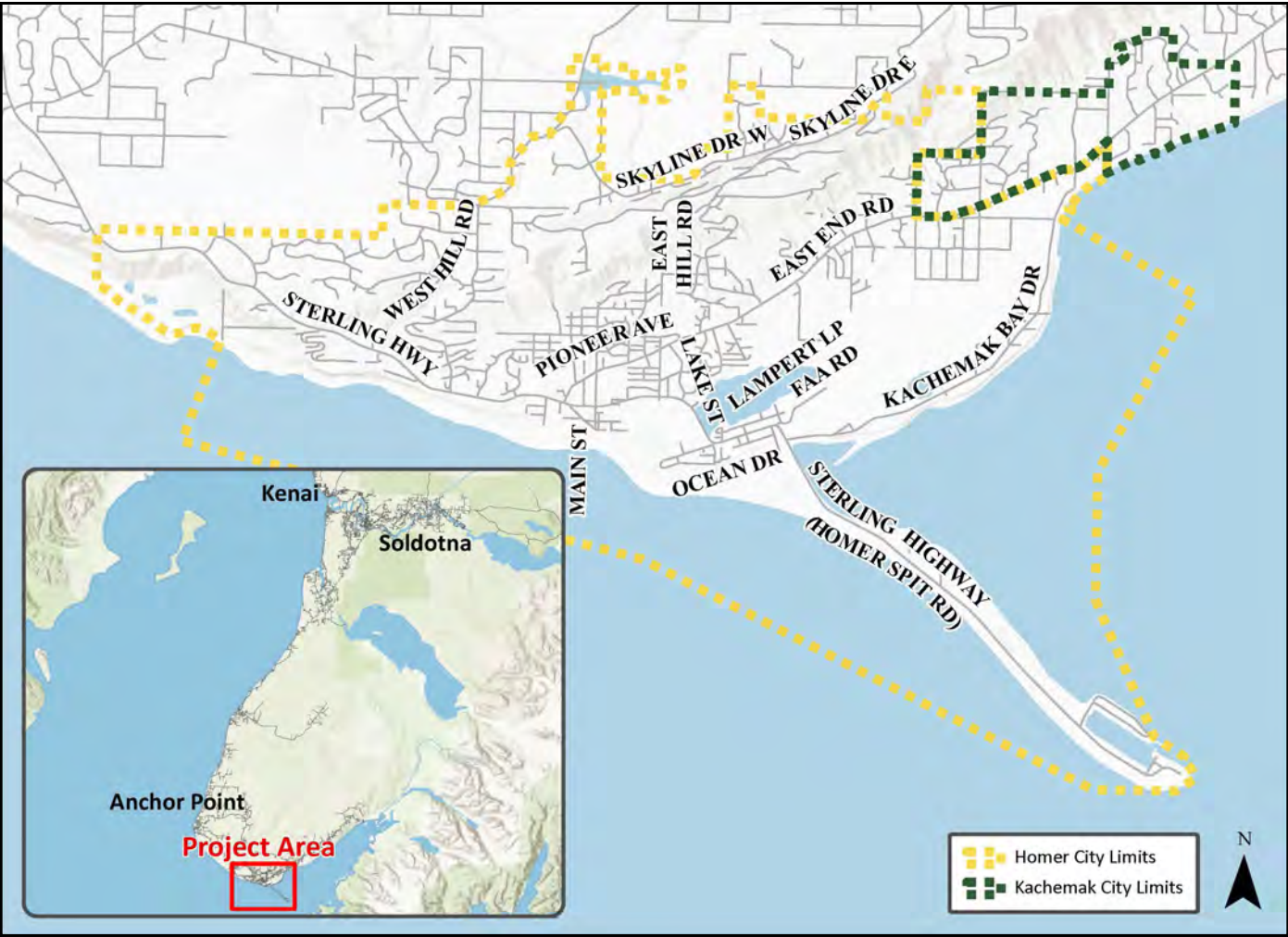


Figure 1: Homer Vicinity Map

RELATED PLANS	DESCRIPTION
City of Homer Non-Motorized Transportation and Trails Plan 2022 Implementation Plan (2022)	Guides the development of a non-motorized network in Homer.
Green Infrastructure – Storm Water Management Plan (2021)	Examines the benefits of integrating green infrastructure for stormwater mitigation.
Homer Spit Parking Study (2021)	Examines parking concerns on the Homer Spit and makes suggestions for improvements.
All-Hazard Mitigation Plan (2018)	Outlines actions taken during hazardous situations, including tsunami evacuation routes.
Homer Comprehensive Plan (2018)	Establishes goals, standards, and policies for land use and development.
Climate Action Plan (2007)	Outlines how to reduce energy usage and greenhouse gas emissions.
Homer Area Transportation Plan (2005)	Identifies needs, guides planning, and aids funding efforts for roads and trails capital improvement projects.
Homer Non-Motorized Transportation and Trail Plan (2004)	Provides a development manual for creating and integrating a non-motorized transportation and trail system over the period from 2004 to 2024.

Table 1: Past Plans

PLANS AND PROJECTS	DESCRIPTION
Homer Comprehensive Plan Update (pending)	Updates the 2018 plan, establishing goals, standards, and policies for land use and development.
Homer All Ages & Abilities Pedestrian Path Project (ongoing)	Connects the Senior Center, medical district, and Central Business District with an accessible pathway for year-round, non-motorized access.
Homer Harbor Expansion Project (ongoing)	Addresses Homer’s need for additional harbor space to moor large vessels.
Stormwater Management Projects (ongoing)	Uses green infrastructure and natural systems to improve water quality and prevent flooding/erosion. There are currently four projects in the conceptual phase.

Table 2: Pending and Ongoing Plans and Projects

The Transportation Plan includes the following key sections:

Public Involvement Summary. Describes how input from the public was solicited and incorporated into this plan.

State of the System. Describes the transportation infrastructure within the City, including state roads, City roads, and non-motorized trails, paths, and sidewalks; evaluates how the transportation network operates, including consideration of seasonal impacts, as well as the impacts of schools, hospitals, and events such as the Farmers Market on system operations; discusses the transportation needs of persons of all ages and abilities; and describes the existing evacuation routes for emergency events such as tsunamis and wildfires.

Transportation System Guidelines. Presents brief summaries of current best practices for transportation systems pertinent to the City of Homer.

Goals and Objectives. Presents the goals and objectives for the City of Homer transportation network. These goals address community desires for increased safety when using different modes of transportation and better connectivity for all users.

Recommendations. Presents policies, actions, and projects that need to be implemented to reach the City’s goals.

Funding. Describes potential sources of funding for the recommended policies, actions, and projects.

Public Involvement Summary



In the fall of 2022, as part of the Transportation Plan effort, the City of Homer and community stakeholders conducted multiple public outreach events as well as focused group discussions with target populations in mind. Outreach activities included:

- Discussion at Homer High School
- Discussion at Senior Center
- Booth at Rotary Health Fair
- Discussions with representatives from:
 - Independent Living Center
 - Local taxi companies
 - Heavy equipment and freight operators
- Presentations to City of Homer commissions and Council

In addition, comments from the public at large were solicited in four other ways:

- 1** An online mapping tool where community members could identify specific locations of interest as well as share specific concerns and offer potential solutions. Nearly 500 specific comments were made using this tool.
- 2** Comments from the Non-Motorized Transportation Symposium held by Homer Drawdown (a community effort focused on local efforts to mitigate climate change) on October 1, 2022, were added to the online mapping tool.
- 3** An online survey, which asked specific questions about how individuals travel, their concerns while traveling, and what travel options they preferred. This survey was also available in print. Nearly 300 people responded to this survey.
- 4** A public open house focused on identifying goals and objectives for the Transportation Plan.



Figure 2: Transportation Plan Open House (November 9, 2022)

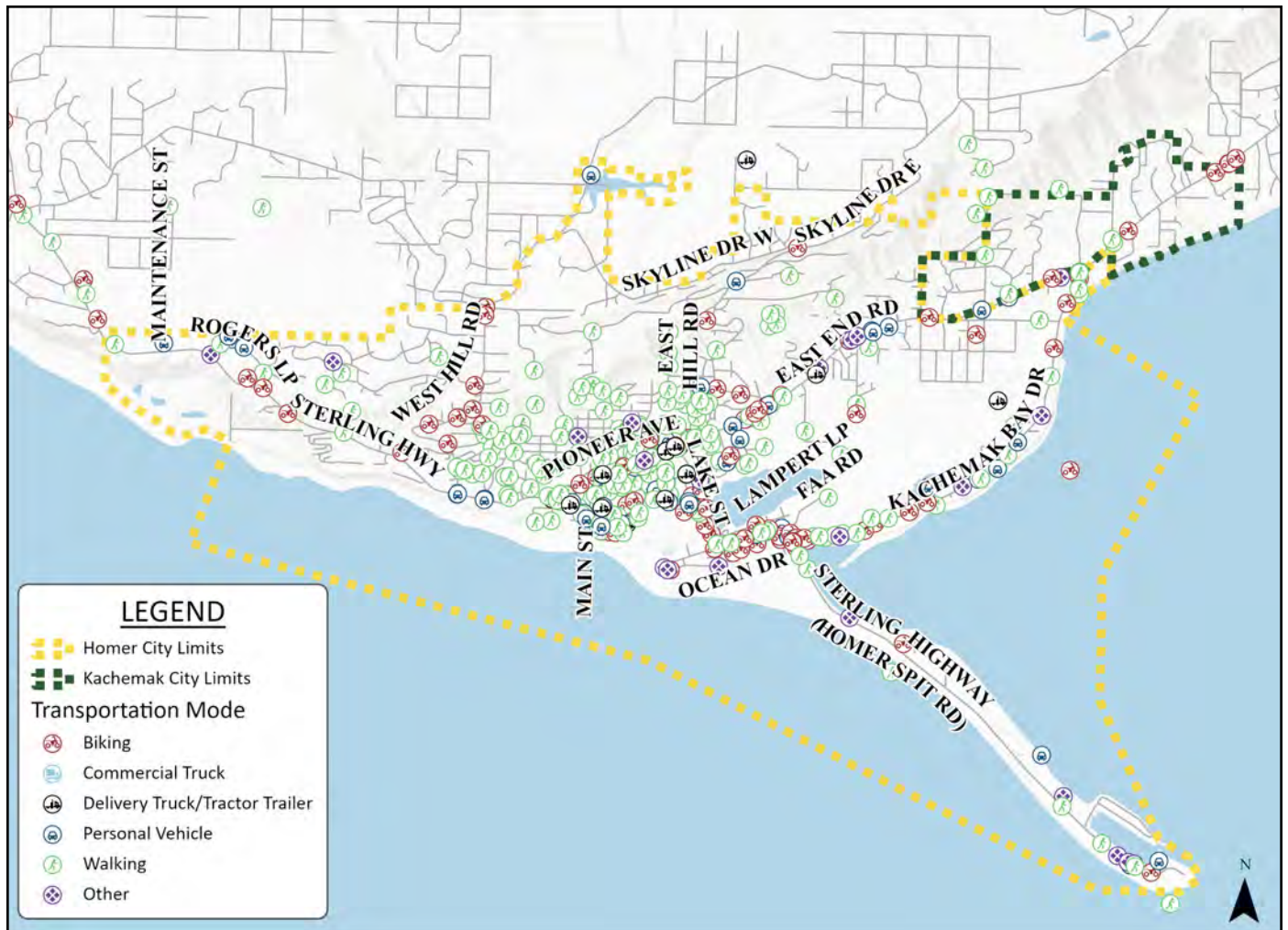
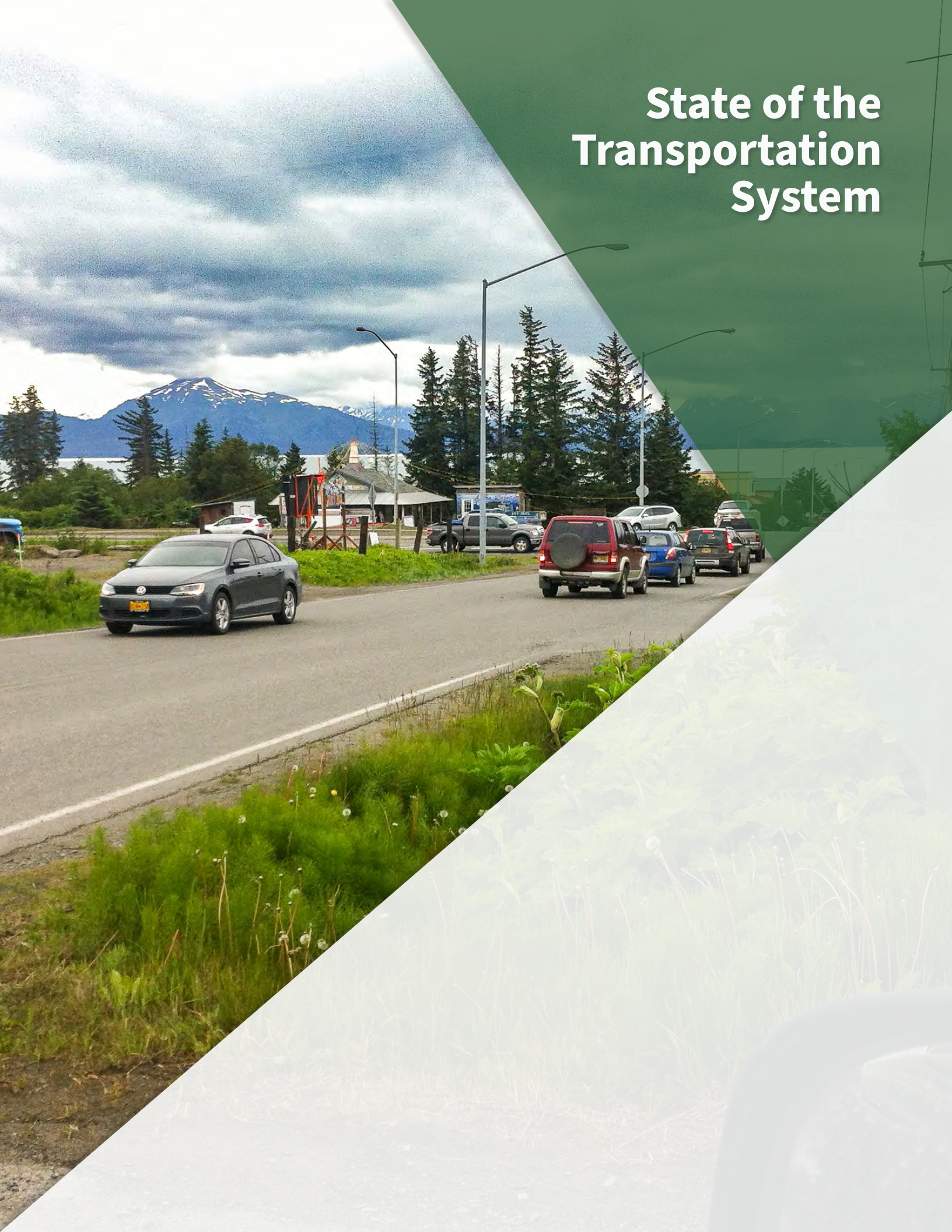


Figure 3: Online Map of Public Comments

The received comments were used to develop draft goals and objectives for the Transportation Plan, and to identify policies, projects, and activities that meet the needs of the community and support the goals and objectives.

Appendix A includes a more detailed summary of the public involvement efforts.

State of the Transportation System



State roads make up the backbone of the City of Homer transportation system, providing key connections between local city roads for walking, biking, driving, and the movement of freight. Alaska Department of Transportation and Public Facilities' (DOT&PF) roads emphasize moving traffic quickly over relatively longer distances and connect to areas outside of the city. City of Homer roads emphasize access to residences, businesses, and other attractions. Both state- and city-owned roads are needed to provide safe transportation options for residents, visitors, and the movement of freight.

Nearby communities connected to the City of Homer via the Sterling Highway and East End Road include Anchor Point, Diamond Ridge, Happy Valley, Kachemak City, Kachemak Selo, Voznesenka, Razdolna, Nikolaevsk, and Fritz Creek. Homer also provides goods and services to communities across Kachemak Bay, including Halibut Cove, Seldovia, Nanwalek, and Port Graham. In addition to the roadway network, Homer is reached via public ferries, private boats, and the Homer Airport.

ROAD SYSTEM

Functional Classification

Roads are divided into three main functional classes: arterials, collectors, and local roads. In Alaska, the DOT&PF assigns classifications for all state-owned roads and local agencies assign classifications for locally-owned roads. These classifications help to define the purpose of each road within the road network and relate to roadway design decisions, such as design speed and walking and biking amenities. Arterial roads are generally designed to carry higher volumes of vehicles at higher speeds over longer distances. Often, separated paths or wide shoulders are provided for walking and biking. Local roads carry lower volumes of traffic at lower speeds, are focused on providing access to homes and businesses, and carry travelers for only a short distance.

Figure 4 presents the functional classification for both the DOT&PF roads and the city-owned roads in Homer.

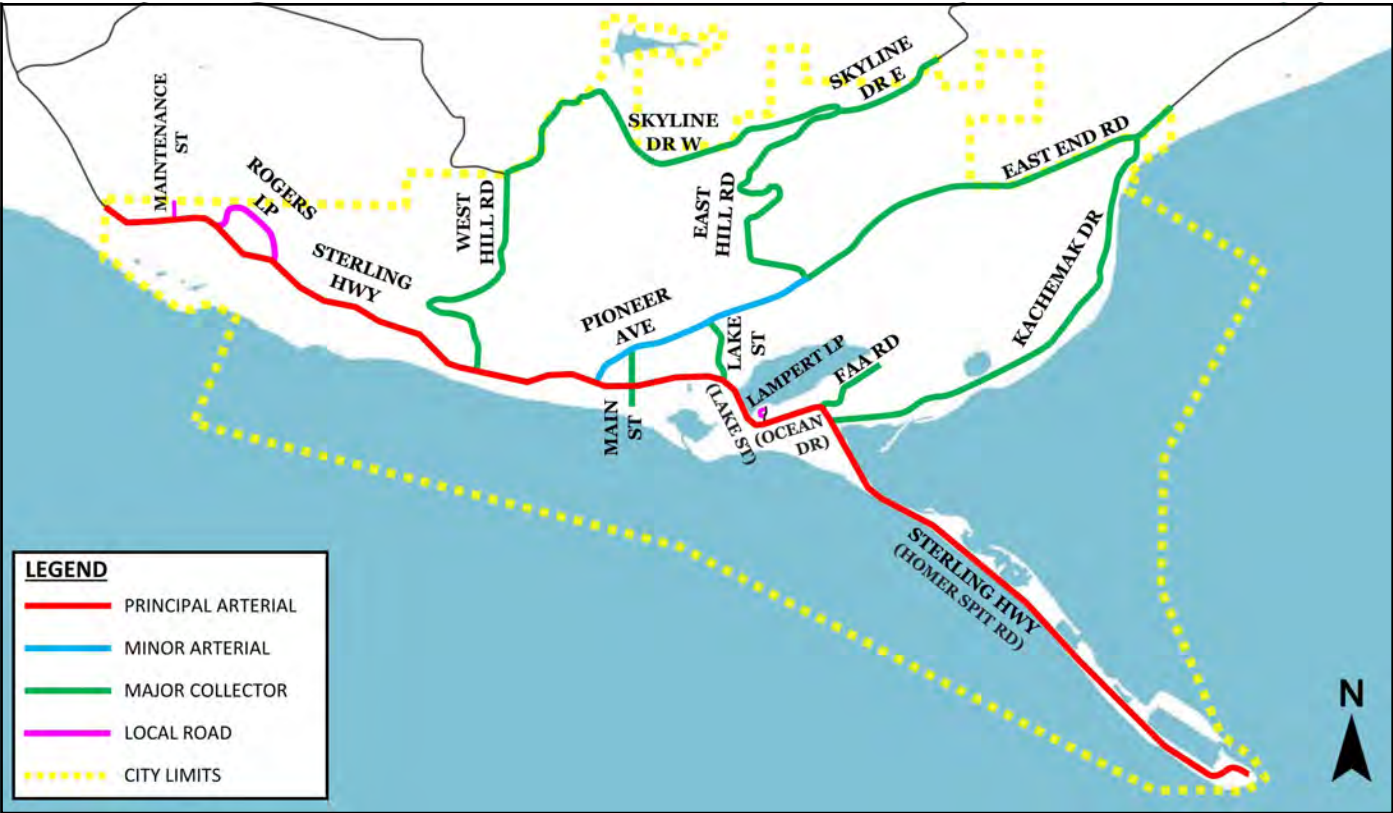


Figure 4: Roadway Functional Classification (State Roads)

Often, pedestrians and bicyclists share the road with vehicles, although sometimes a sidewalk or wide shoulder may be provided. Collector roads distribute trips between local and arterial roads, with appropriate spaces for walking and biking.

DOT&PF Routes

There are fourteen DOT&PF-owned roads within the City of Homer city limits as shown in Figure 5. Of the state roads, only the Sterling Highway is part of the National Highway System (NHS), but it includes portions of Lake Street, Ocean Drive, and Homer Spit Road. Maintenance Street and Lampert Loop are access roads that lead to state-owned lands.

Table 3 (page 10) summarizes the existing walking and biking infrastructure along DOT&PF roads and Figure 6 (page 11) maps the facilities. There are many routes without dedicated infrastructure for walking and biking.

DOT&PF prioritizes the maintenance of their roads as shown in Figure 7 (page 11). Roads with a priority level of one are maintained first, with maintenance on the other roads following sequentially. The priority level for the Sterling Highway is level 1; most of the other DOT&PF roads in Homer fall under the priority levels 3 and 4, with sidewalks given similar priority depending on the availability of resources.

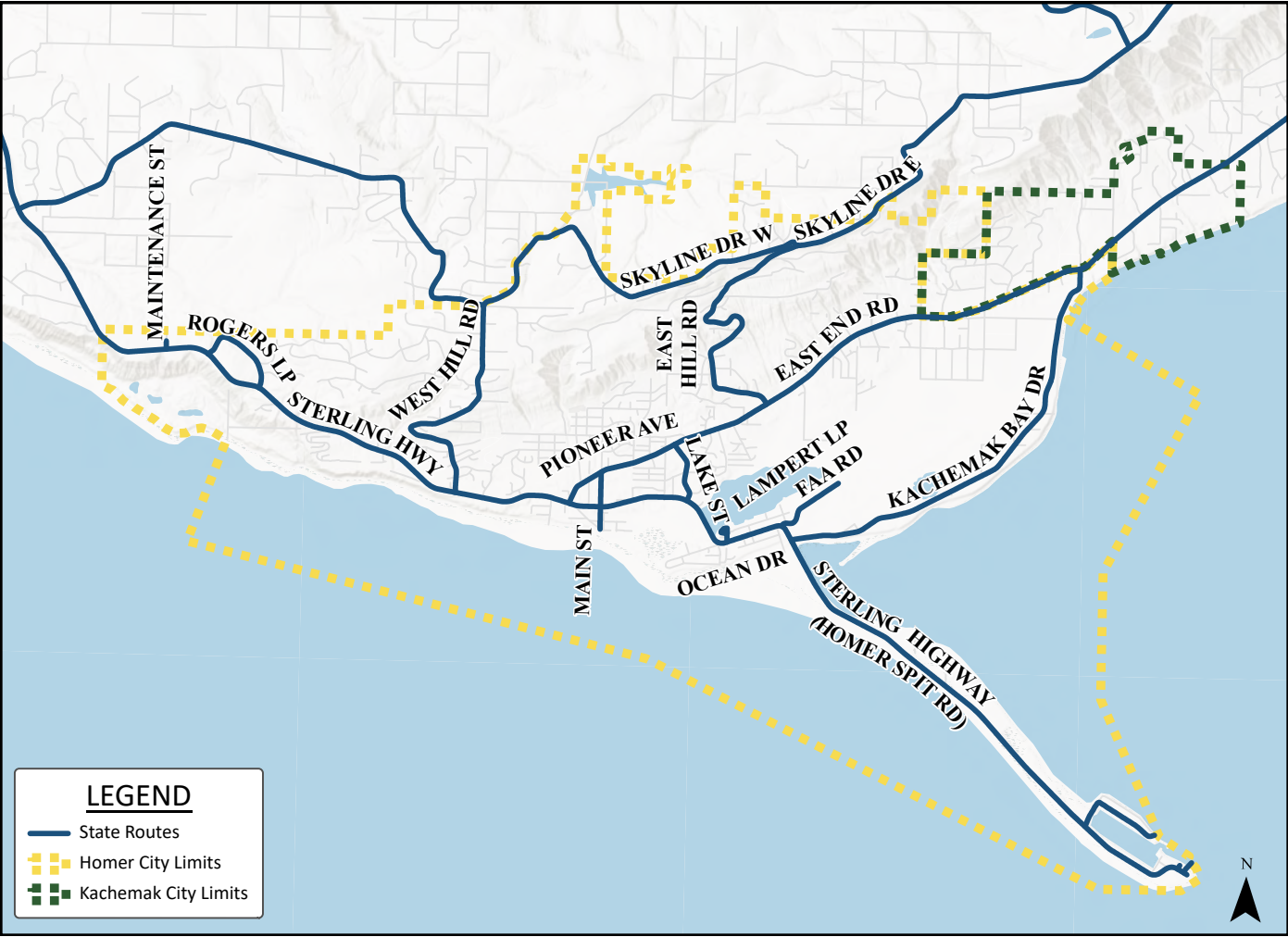


Figure 5: DOT&PF State Routes



ROUTE NAME	SUB-SEGMENT EXTENTS	NON-MOTORIZED INFRASTRUCTURE
Sterling Highway	Bluff Road to Rogers Loop	None
	Rogers Loop to Glenview Street	Sidewalk (north side)
	Glenview Street to Brown Bear Loop	Sidewalks
	Brown Bear Loop to Lake Street/Ocean Drive	Separated pathway (west side)
	Lake Street/Ocean Drive to Kachemak Drive	Bike lane (south/west side)
	Kachemak Drive to end of Homer Spit Road	Separated pathway
Pioneer Avenue	Sterling Highway to Lake Street	Sidewalk
East End Road	Lake Street to East Hill Road	Sidewalk
	East Hill Road to McLay Road	Separated pathway (north side)
Lake Street	Sterling Highway to East End Road	Sidewalk (east side), bike lanes
Kachemak Drive	Sterling Highway to East End Road	None
West Hill Road	Sterling Highway to Skyline Drive West	None
East Hill Road	East End Road to Skyline Drive West	None
Skyline Drive West	Diamond Ridge Road to East Hill Road	None
Skyline Drive East	East Hill Road to Woodman Lane	None
Main Street	Bunnell Avenue to Pioneer Avenue	None
FAA Road	Sterling Highway to Airport Parking Entrance	Bike lane (north side)
Rogers Loop	Sterling Highway to Sterling Highway	None
Maintenance Street	Sterling Highway to Road End	None
Lampert Loop	Lampert Lane to Lambert Lane	None

Table 3: Description of Non-Motorized Facilities along State Routes

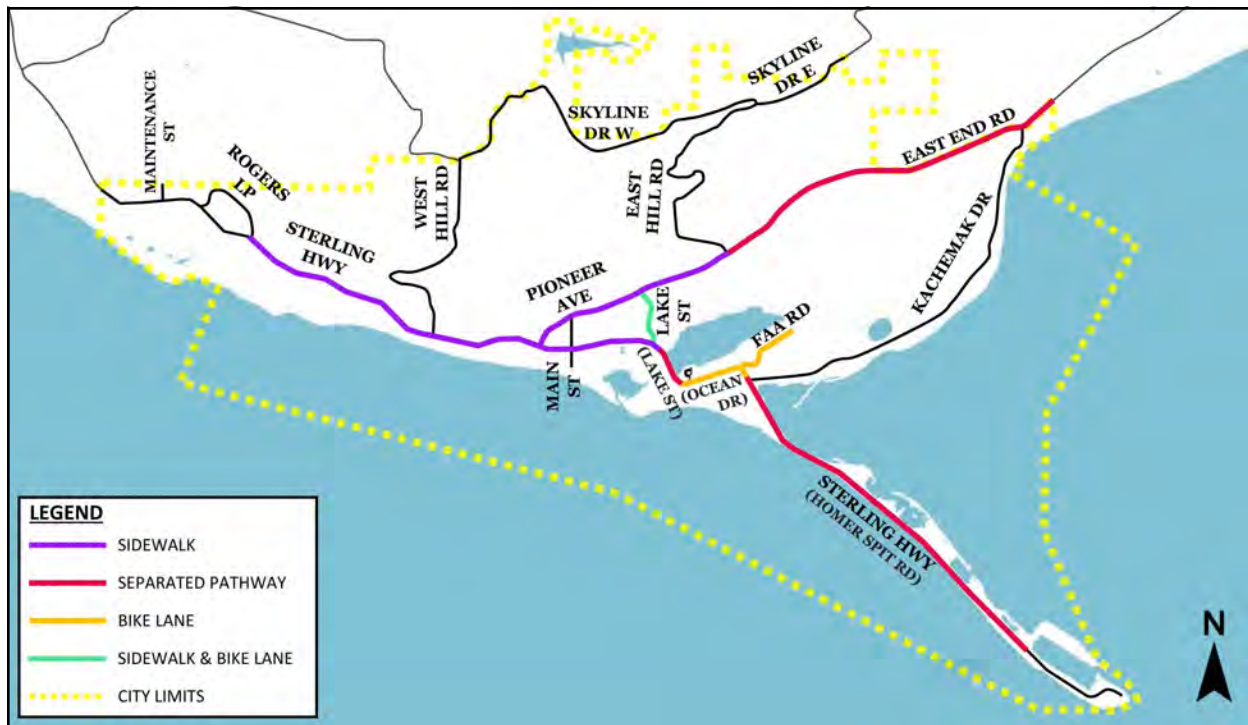


Figure 6: Non-Motorized Facilities along State Routes



Figure 7: DOT&PF Maintenance Priority Map

City-Owned Routes

The city roads in Homer provide access to homes, local businesses, and attractions for residents and visitors. Since the 2005 Homer Area Transportation Plan, the City of Homer has been working to build a well-connected network of local and collector roads. This effort will allow users to get to their destinations without traveling out of their way and relieve arterial roads from carrying short-distance trips. Additionally, a well-connected network allows everyone access to signalized intersections on the major arterials, reducing safety concerns

and delay associated with turning left onto busier roads such as the Sterling Highway, Pioneer Avenue, and East End Road. These connections can also reduce the challenges associated with school drop off and pick up.

Examples of connections that have been made since the 2005 plan include the extension of Grubstake Avenue from Heath Street to Lake Street and the extension of Greatland Street to Pioneer Avenue.

Traffic Volumes

The 2021 annual average daily traffic (AADT) volumes are shown in Figure 8. The highest volume roads carry around 8,500 to 9,500 vehicles per day and include the Sterling Highway between Pioneer Avenue and FAA Road, as well as East End Road between Lake Street and East Hill Road.

Monthly traffic volumes within Homer vary widely throughout the year due to the influx of visitors primarily in the summer. At the most extreme, Homer Spit Road traffic volumes drop to 40 to 45% of the yearly average in December and January and rise to 215% of the yearly average in July. In the busiest areas of town where residents travel daily (Sterling Highway between Pioneer Avenue and FAA Road, as well as East End Road between Lake Street and East Hill Road), traffic varies less: volumes drop to 75 to 85% of the yearly average in November

through February and increases to 115 to 135% of the yearly average in June through August.

The 2024 Homer Transportation Plan is a 20-year plan, with a planning year of 2045. An annual traffic growth rate was forecasted by first identifying the relationship between historical population and traffic volumes and then applying that relationship to population growth forecasts for the Kenai Peninsula Borough to determine traffic volumes. This method yields a very low growth rate (0.1% per year) since the borough population is forecasted to not grow very much over this time period. A second traffic forecasting method looked at the historical growth rate from 2012 through 2019 and applied the same rate to future growth. This method yields a modest growth rate of 1.0% per year (equivalent to a 30% increase from 2021 to 2045).

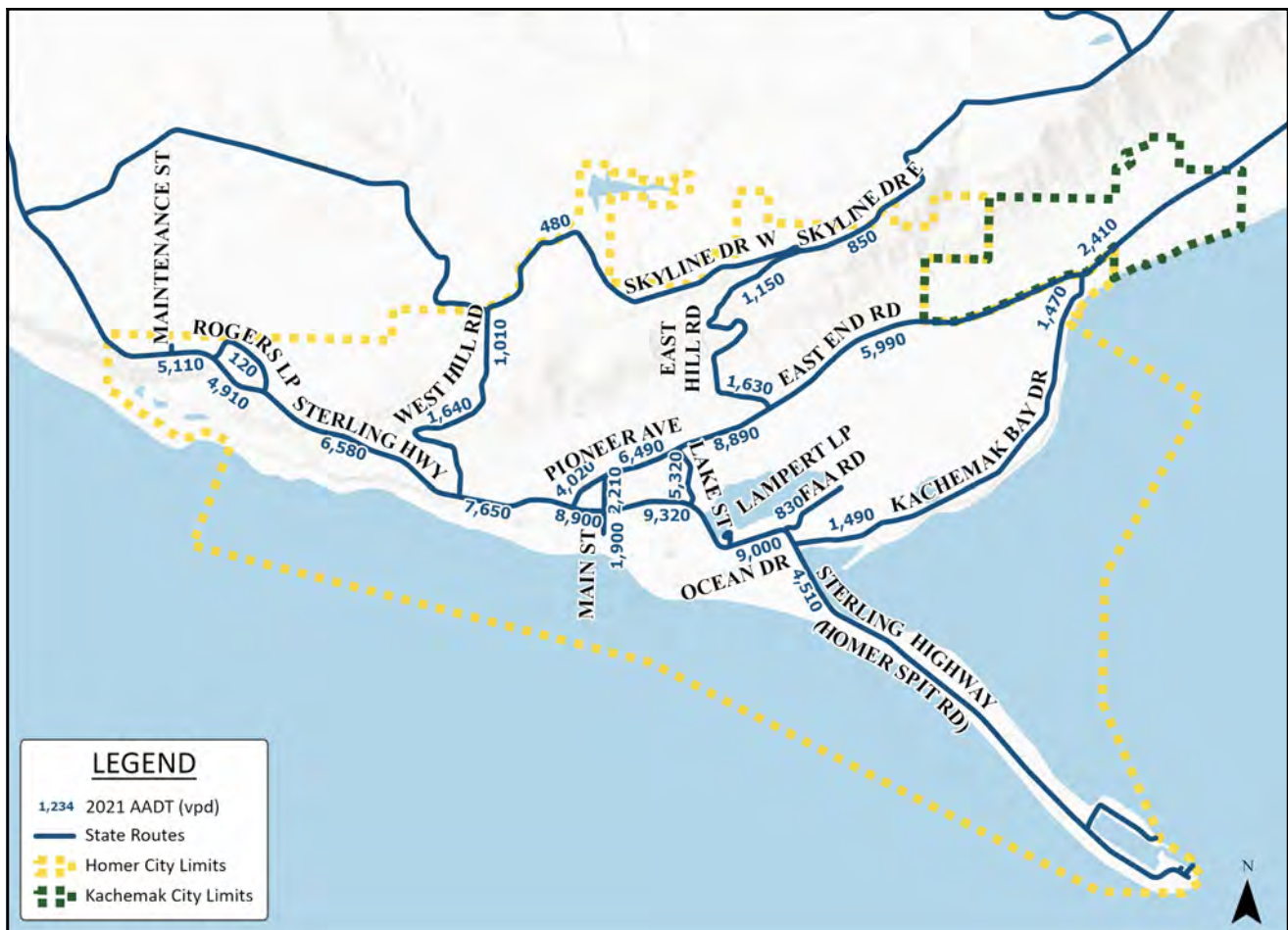


Figure 8: 2021 AADT State Roads

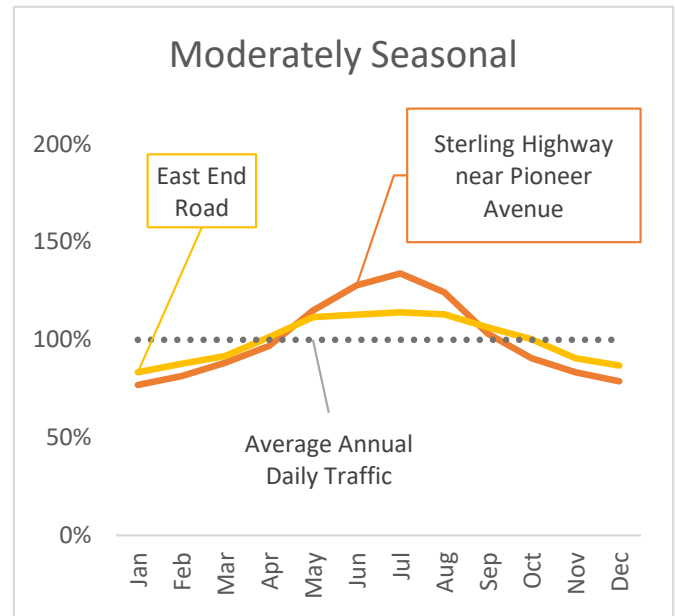
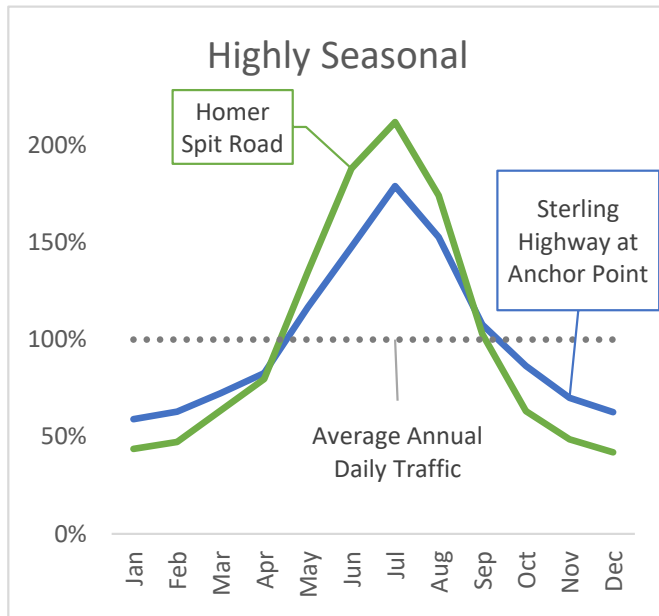


Figure 9: Monthly Traffic Volume as a Percentage of Average Annual Daily Traffic

Operational Quality of State Roads

The state roads represent roads used for higher speed, longer distance travel within Homer. Table 4 presents the planning level volume-to-capacity (v/c) ratio and an estimate of vehicular level of service (LOS) for state roads in Homer using 2021 peak hour directional volumes.

The level of service concept describes the user experience for different modes of travel (pedestrians, bicycles, transit, and vehicles). Level of service uses different metrics for different modes and for different types of facilities and rates them all on a scale of A (best conditions for individual users) to F (worst conditions). Often, LOS C or D is comfortable for most users, balancing delay for most users. For the state roadways in Homer, vehicle level of service is generally a measure of how much vehicle speed drops due to interactions with other vehicles.

The v/c ratio compares the capacity of the roadway (the volume of traffic the roadway is designed to carry) to the traffic volume actually being carried by the roadway. Generally, v/c values of 0.85 or less indicate that traffic on the road is operating reasonably well.

As shown in Table 4, all state roadways in 2021 operated within capacity and under the target threshold v/c ratio of 0.85. The 2021 values also represent operations in 2045 under the low growth rate scenario. To determine operations in 2045 under the moderate growth scenario, the directional peak hour volumes were increased by 1.0% annually. There are only two state road segments (the Sterling Highway between Glenview and Lake Streets and East End Road from Lake Street to Ben Walters Lane) where the v/c ratio is expected to exceed the 0.85 threshold in 2045 under the moderate growth scenario.

What improvements are needed?

Roadway Ownership and Maintenance

City of Homer residents desire improved walking and biking on many state-owned roads. This includes both construction of separated paths, sidewalks, and bike lanes and improved year-round maintenance of these facilities (removing dirt and debris in the summer and snow and ice in the winter). In the case of Pioneer Avenue, the City of Homer has formed an agreement with DOT&PF (known as a TORA) for Homer to maintain Pioneer Avenue, so that the city can respond to the community desires. Another possible option for some roads could be to pursue a transfer of ownership from the state to the City.

Winter Maintenance and Snow Storage

Traditionally, the City of Homer has placed snow storage at the ends of dead-end roads or in vacant lots. However, as development occurs and roadways get connected, there are fewer locations like this to use. Similarly, when sidewalks are plowed, the snow is pushed to the center of the road and then picked up and carried to snow dumps. As the number of sidewalks increases, this maintenance burden will increase. These issues will need to be addressed as the City of Homer continues to develop its transportation system.

Electric Vehicles

As the number of electric vehicles increases, there will be a need for public charging station infrastructure.

ROUTE NAME	EXTENTS	DIRECTIONAL PEAK HOUR CAPACITY (VEHICLES PER HOUR)	2021				2045 (MODERATE GROWTH)			
			DIRECTIONAL PEAK HOUR VOLUME (VEHICLE PER HOUR)		V/C		DIRECTIONAL PEAK HOUR VOLUME (VEHICLE PER HOUR)		V/C	
Sterling Highway	Bluff Road to Maintenance Street	1350	280		0.20	A	360		0.25	B
	Maintenance Street to Rogers Loop	2200	280		0.15	A	360		0.15	A
	Rogers Loop to West Hill Road	2200	430		0.20	A	540		0.25	B
	West Hill Road to Glenview Street	1130	540		0.50	C	680		0.60	D
	Glenview Street to Lake Street	830	650		0.80	C	830		1.00	F
	Lake Street to Lake Street/Ocean Drive	1080	570		0.55	C	730		0.65	D
Pioneer Avenue	Lake Street/Ocean Drive to Kachemak Drive	1080	570		0.55	C	730		0.65	D
	Kachemak Drive to Road End	1350	450		0.35	B	570		0.40	C
	Sterling Highway to Lake Street	850	410		0.50	B	510		0.60	B
	Lake Street to Ben Walters Lane	810	570		0.70	D	720		0.90	E
East End Road	Ben Walters Lane to East Hill Road	1080	570		0.55	C	720		0.65	D
	East Hill Road to Sabrina Road	1080	380		0.35	B	480		0.45	C
	Sabrina Road to McLay Road	1350	380		0.30	B	480		0.35	B
Lake Street	Sterling Highway to East End Road	810	320		0.40	C	410		0.50	C
Kachemak Drive	Sterling Highway to East End Road	1080	160		0.15	A	200		0.20	A
West Hill Road	Sterling Highway to Skyline Drive West	950	120		0.10	A	150		0.15	A
East Hill Road	East End Road to Skyline Drive West	950	140		0.15	A	180		0.20	A
Skyline Drive West	Diamond Ridge Road to East Hill Road	1080	40		0.05	A	50		0.05	A
Skyline Drive East	East Hill Road to Eagleaerie Avenue	1080	90		0.10	A	110		0.10	A
Main Street	Bunnell Avenue to Pioneer Avenue	810	120		0.15	A	150		0.20	A
FAA Road	Sterling Highway to Airport Parking Entrance	810	60		0.10	A	80		0.10	A

Table 4: Planning-Level Operational Analysis for State Roadways (Improvements may be needed to address future congestion for the highlighted segment. Network connections and improved bicycle or pedestrian facilities should be considered.)

Walking and Biking

The City of Homer has also been actively adding walking and biking infrastructure to city-owned roads. Projects that are currently underway include the addition of sidewalks along Ben Walters Lane and Svedlund Street, where many pedestrians travel to school, shopping, and other activities. On Kachemak Drive, where motorized and non-motorized users are forced into conflicts due to higher speeds, narrow roads, and low visibility, the City of Homer has been advocating a project to construct a separated pathway. The City has also been working to improve safe travel for persons of all ages and abilities. One project to address this is the Homer All-Ages and Abilities Pedestrian Pathway (HAP) (see Figure 10), made up of two interconnected loops that join the Senior Center, main medical district, library, post office, police station, grocery store, and pharmacy, as well as connecting with existing trails. These projects will improve the non-motorized transportation network, but there are still many places that need more work. For example, the 2004 Homer Non-Motorized Transportation and Trail Plan identified a sidewalk gap on Main Street south of Pioneer Avenue that still needs to be addressed.

What improvements are needed?

Walking and Biking

While the City of Homer has been improving sidewalk connections, lengthy sidewalk gaps still exist. Additionally, Homer's reliance on official and unofficial trails for pedestrian connectivity often include unimproved footpaths that are narrow and with surfaces that are not firm and stable. While these trails provide route alternatives for some Homer residents and visitors, there are a significant number of individuals who cannot safely use these connections as they currently exist. Constructed trails have not always been designed to be usable year-round and are often avoided by pedestrians who are concerned about trip hazards, icing during winter months, wildlife interactions, and personal safety concerns, particularly at night. Many community members would rather use neighborhood streets than the trail system. Future construction of walking and biking facilities should consider ease of winter and summer maintenance.

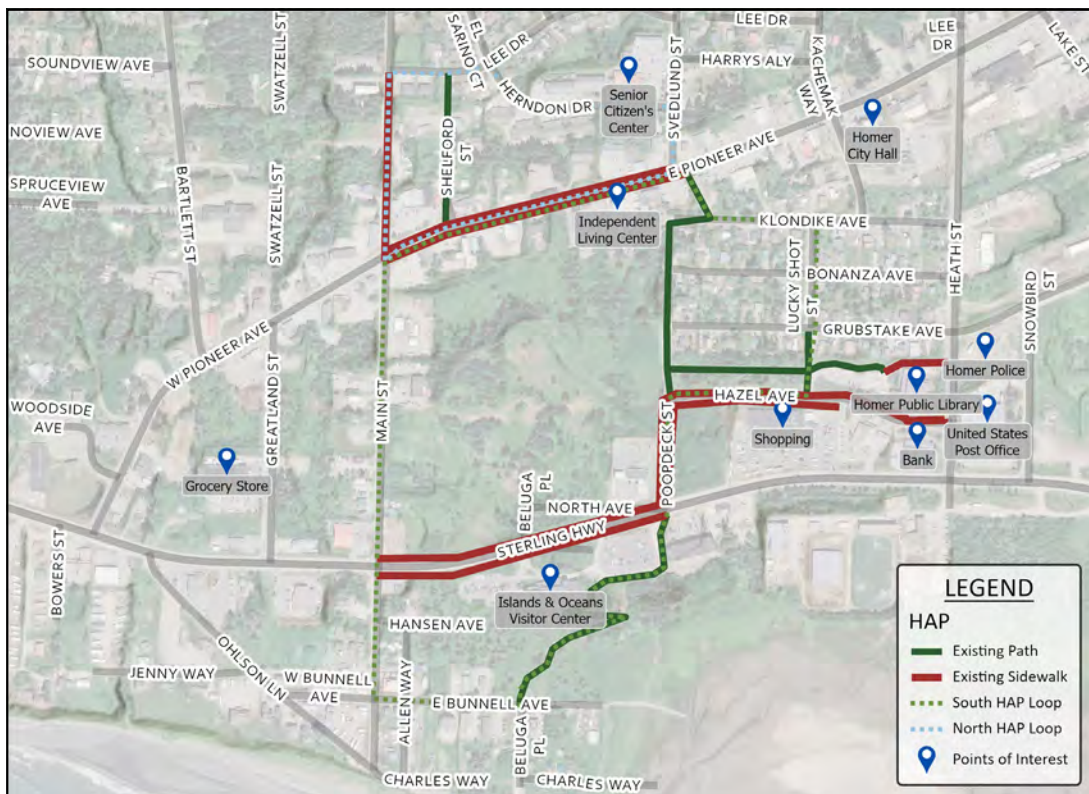


Figure 10: Homer All-Ages and Abilities Pedestrian Pathway (HAP)

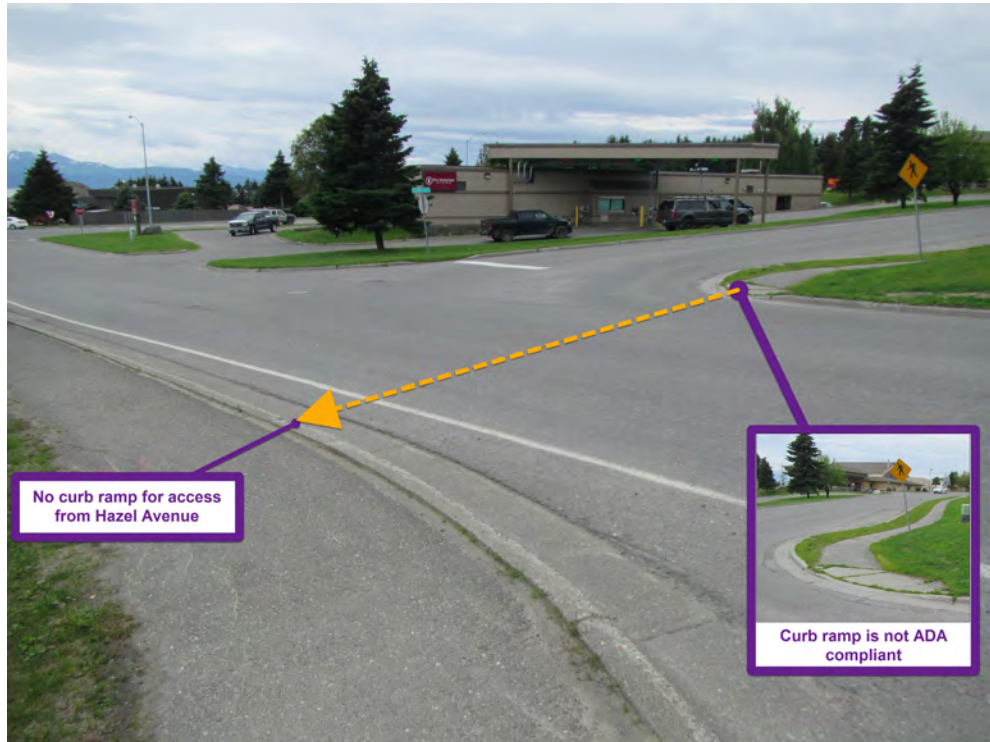


Figure 11: Obstructed Path of Travel near the Homer Public Library and Post Office

What improvements are needed? (continued)

Homer has a significant population that walks or bikes regularly. Needs related to walking and biking that were identified by the public through the online mapping tool include:

- Bike lanes or sidewalks
- Paths that would provide shorter connections, safer travel, or more scenic routes
- Neighborhood connectors
- New crosswalks, improved crosswalks and relocated crosswalks
- New or improved streetlights
- More traffic calming measures
- Reduced speeds
- Additional signs
- Improved wayfinding
- Improved winter and summer maintenance

Appendix B provides maps of specific trails or paths that were proposed using the online mapping tool.

Connectivity and “Path of Travel”

Defined as a “Path of Travel” within the Americans with Disabilities Act,¹ (ADA) a continuous and unobstructed pedestrian route (or “path of travel”) is essential when

considering accessibility realities within the pedestrian network as a whole. Often, a single barrier can make an entire route no longer function as intended.

Identifying, planning, designing, and constructing continuous pedestrian travel corridors is central to creating equitable and accessible connections for all members of the community. These continuous travel corridors should also take into consideration the routes pedestrians prefer based on their own experiences with a path of travel that is direct and that they deem safe.

An example of a location with a lack of accessible connectivity is between the Homer Public Library and destinations to the east, such as the Homer Post Office, the Homer Police Department, as well as destinations along Grubstake Avenue such as Ulmer’s Drug and Ace Hardware, the Center for Alaskan Coastal Studies, the Department of Motor Vehicles, and other shops and restaurants. Important social service agencies also located within a one mile radius of the library include the Rec Room, Kachemak Bay Family Planning Clinic, Haven House, South Peninsula Behavioral Health Services, Alaska Social Services, Homer Courthouse as well as low-income housing. The sidewalk running along Hazel Avenue from the library has a non-ADA-compliant curb ramp at Heath Street that is steep and guides users toward vehicular travel lanes. Pedestrians must cross Heath Street to access the sidewalk along Heath Street; however, there is no curb ramp for the Heath Street sidewalk at Hazel Avenue, forcing users to use the roadway (see Figure 11). One

¹ CFR 28.1.35.151(b)(4)

community member with a visual impairment reported being struck by a motor vehicle at this intersection, resulting in severe injuries. Comments from the online mapping survey also included: “Sidewalk ramps and connections feel way off” and “Getting from the library to the post office seems like it should be an easy task. It is not.” When routes of pedestrian movement or “paths of travel” are disrupted, access to services and amenities are also significantly disrupted.

“Path of Travel” should also consider the route from the roadway right-of-way to the front door of a business or residence. Some development has been built without constructing walkway connections to sidewalks, which is a barrier to walking. Private development and the City need to work together to eliminate these obstacles as new development is built.

Winter Maintenance and Snow Storage

The equipment needed for maintaining sidewalks, paths, and trails free from snow and ice depends on design elements, such as width and steepness, as well as whether it is connected to or separated from the roadway. There are several paths that are currently difficult for the City of Homer to maintain. For example, the Harbor Boardwalk has a wooden deck that cannot be cleared by a snowblower due to the damage it would cause the wood; instead, it must be cleared by hand. Other examples are sidewalks that are not directly adjacent to a road cannot be cleared with a grader blade, so a tool cat or hand-pushed snow blower must be used. Roads and trails with steep grades also require special consideration, adding to the maintenance time after each snow fall. As new walking and biking facilities are constructed, the design should consider efficient ways to accommodate the needed maintenance equipment.

Recreational Trails

The City of Homer currently has 5.41 miles of trails within the city limits, most of which provide a walking connection between neighborhoods and all of which can be used for recreation. Some of these trails are maintained year-round, while others cannot be maintained in the winter. In addition, Calvin and Coyle Woodland Park (on property owned by the Kachemak Heritage Land Trust) includes 1.5 miles of recreational trail. The Woodard Creek Watershed Plan (November 2016) includes several priority projects to develop trails that either provide access from neighborhoods to the watershed area or provide views of the watershed.

Just outside of the city limits, the Diamond Creek Recreation Area (DCRA) is a 275-acre property which the City has acquired and designated as park land. DCRA is immediately adjacent to the State of Alaska Homer Demonstration Forest. The Kachemak Nordic Ski Club maintains winter trails that cross both properties and provide connections between Rogers Loop, the Sterling Highway, Diamond Ridge Road, and West Hill Road. In summer, the trails become very wet and some areas are unusable. The Diamond Creek Recreation Area Management Plan (May 2013) describes goals, objectives, and strategies for constructing summer-use trails in the recreation area.

Truck Routes

Truck traffic through the City of Homer has been increasing due to construction activity along East End Road. Many of these trucks travel on Pioneer Avenue to access East End Road from the Sterling Highway. Truck volumes were measured on Pioneer Avenue for a 10-day period in October 2022. An average of 150 trucks a day drove along Pioneer Avenue during that period, which represented about 3% of the total traffic. The trucks were present mostly during the day; 85 to 90% of the trucks traveled between 7 AM and 6 PM.

What improvements are needed?

Truck Routing

With the ongoing construction activities occurring on or along East End Road, heavy vehicles are frequently driving between Sterling Highway and East End Road along Pioneer Avenue. Pioneer Avenue has a downtown feel with many restaurants, cafes, and shops and is characterized by frequent driveways and moderate pedestrian activity. Thus, heavy vehicles using Pioneer Avenue frequently interact with other vehicles and with pedestrians.

Consideration should be given to establishing a truck route through Homer that uses roads where there are fewer interactions. Two potential routes include:

- Sterling Highway to Lake Street to East End Road; however, intersection improvements would be needed to accommodate turning vehicles.
- Sterling Highway to Kachemak Drive; however, this route is longer than the current route and interactions between bicyclists and vehicles has been noted as a concern for this route.

Special Traffic Generators

Special traffic generators are facilities that generate irregular traffic patterns through the day, impacting the road network surrounding them.

Schools

The City of Homer is served by seven elementary and secondary schools. Table 5 lists start and end times for each school. Areas surrounding the schools experience an increase in traffic congestion during pick up and drop off times, and this congestion can be amplified when school start and end times occur at the same time as other traffic peaks, such as commute times. While the congestion lasts for relatively short periods of time (15 to 30 minutes), queues affect both state and local roads and result in undesirable driver behavior. Possible mitigations include changes to start and end times and adjustments to

on-site queue and parking management. Schools with known traffic concerns include Homer High School, Paul Banks Elementary School, and West Homer Elementary School.

NAME OF SCHOOL	START TIME	END TIME
Paul Banks Elementary (K-2)	7:50 am	2:30 pm
West Homer Elementary (3-6)	8:00 am	2:50 pm
Little Fireweed (K-2)	7:50 am	2:25 pm
Fireweed Academy (3-6)	8:00 am	2:50 pm
Homer Middle School	9:00 am	3:50 pm
Homer Flex High School	9:00 am	3:35 pm
Homer High School	9:00 am	3:50 pm

Table 5: Homer Schools Start and End Times

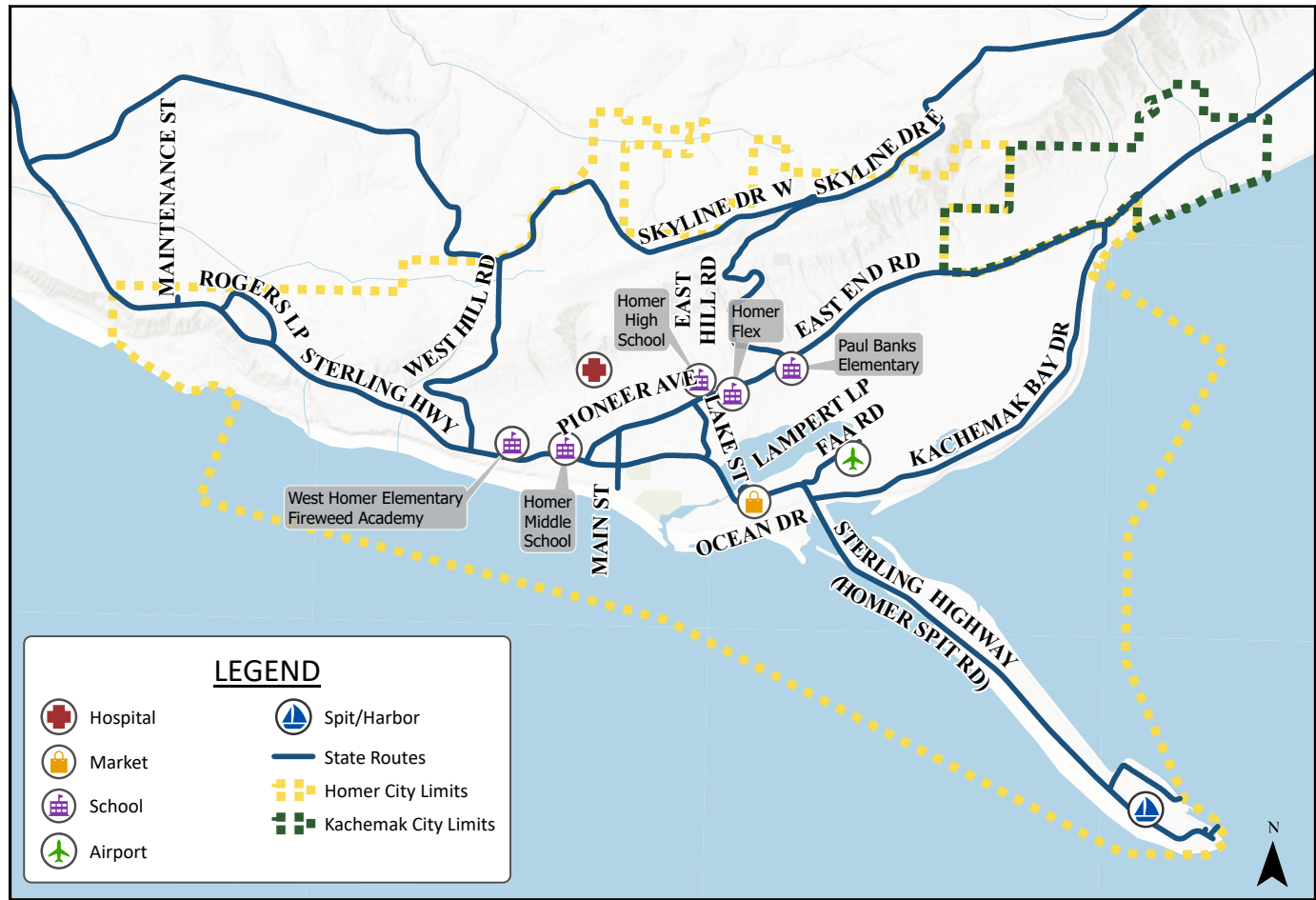


Figure 12: Special Traffic Generators within the City of Homer

Hospital Shifts

The main hospital in Homer is the South Peninsula Hospital. During shift changes, the road network near the hospital experiences a sharp peak in traffic volumes. Recent changes to school start times for middle and high school have mitigated some of the traffic concerns associated with hospital shifts. Small changes in shift times could have a large impact on reducing or increasing congestion related to the hospital. The hospital could also be a key generator for transit trips for staff, patients, and hospital visitors.

Farmers Market

The Homer Farmers Market, located on Ocean Drive, just east of Lake Street, begins Memorial Day weekend and continues until the end of September. It's open on Saturdays and Wednesdays. The Farmers Market attracts both Homer residents and visitors, which results in increased vehicle and non-motorized traffic in the surrounding area. Community members reported backups on Ocean Drive due to traffic turning into and out of the Farmers Market, especially on Saturdays. One possible mitigation would be to require the Farmers Market to hire traffic officers to provide traffic control.

Homer Spit

The Spit is a major seasonal destination. It is a 4.5-mile long landform that juts out into Kachemak Bay. The Spit is a popular destination for boating, fishing, and camping, and there are also restaurants and shops located on the Spit. Because the Spit is narrow, there is only one route onto and off of the Spit, and parking and traffic problems are common in the summer. The City of Homer works to control parking issues through fee schedules and has encouraged non-motorized travel along the Spit by creating trails, but community members still report problems here. Because of the seasonality and unpredictability of traffic along the Spit, parking and traffic problems are likely to need continuous improvements.

The City of Homer Port & Harbor

The City of Homer Port & Harbor provides service to many vessels and is busiest during the summer months. The port is located at the tip of the Homer Spit and is within a short walking or driving distance from many businesses, attractions, and beautiful beaches. The Alaska Ferry brings many people to Homer through this port. The short distance from attractions provides an incentive for visitors to disembark and enjoy the Spit, even on short layovers. There is a significant increase in both vehicle and non-motorized traffic as cruise ship passengers leave the port to experience Homer.

Homer Airport

The Homer Airport is accessed via FAA Road, which connects to the Sterling Highway as the road makes a 90 degree turn from Ocean Drive to Homer Spit Road. The airport, owned by DOT&PF, includes both an asphalt runway and a floatplane facility on Beluga Lake. The airport serves approximately 30,000 passengers a year. The terminal building is owned and managed by the City of Homer.



Figure 13: Homer Spit path

TRANSIT

Existing Transit System

Currently, Homer has no year-round, accessible public transit that meets community transportation needs. Local taxi companies play a significant role in transporting Homer residents and visitors around the community. A few local organizations and residential facilities, such as the Homer Senior Center and the Center for Alaskan Coastal Studies, provide vans for their programs. There have been multiple efforts by private companies to run shuttles, but they have been financially unsustainable.

Homer's lone connection to a year-round public transit system is the Ninilchik-based BUMPS (Basic Unified Multi-Path Service) bus, which serves Homer three days per week. The BUMPS bus, operated by the Ninilchik Traditional Council, travels roundtrip connecting Homer to Ninilchik, Soldotna, and Kenai, and communities along the route and stopping at major retail outlets in each community.

Two local non-profit organizations provide free and/or subsidized taxi vouchers to ensure individuals have access to vital goods and services. The Independent Living Center (ILC) provides a low-cost taxi voucher program to eligible area residents, while the Homer Food Pantry fills urgent individual funding gaps for transportation. The ILC program began in 2000. Trip numbers have been relatively stable over the last 20 years. For fiscal year 2022, the ILC voucher program logged 5,846 passenger trips, with an operating budget of over \$78,000. For fiscal year 2024, ILC anticipates over 200 different riders will use the program and a budget that will exceed \$100,000. Likewise, in 2021, the Homer Food Pantry distributed over \$5,000 in free taxi vouchers, while also distributing over \$30,000 in gas vouchers to area residents. The gas voucher program has recently been suspended as the costs became prohibitive for the organization.

What improvements are needed?

Area residents without a vehicle have few options for accessing goods and services and traveling to participate in local community activities. Additionally, a transit system could help to address seasonal congestion as well as the environmental impacts of personal automobile dependence.

Transportation for Young Adults

Young adults and providers who serve them point to a lack of transportation options as a community issue affecting youth.

Many students are dependent on the school bus to transport them home, which does not allow them to participate in after school activities. This concern was shared by respondents affiliated with Homer High School, the Homer Public Library, entities supporting youth employment, and the Homer REC Room. The lack of transportation options for youth and young adults is a major barrier to educational, occupational, and social opportunities.

Affordable Transportation

Transportation support provided by ILC and the Homer Food Pantry illustrate community need for subsidized public transportation. One measure of this need is the user numbers for the ILC taxi voucher program which have remained steady over the last four years even though national transit usership dropped precipitously during COVID.² The ILC taxi voucher program provides assistance for essential trips by users for whom private transportation is not affordable.

Seasonal Congestion and Parking

Many groups pointed to seasonal high traffic volumes and congestion on roadways as reasons for a seasonal shuttle connecting the Spit to the business district. Two problems frequently mentioned were: difficulty “turning left anywhere in town” and “parking on the Spit.” Left turns were identified as a specific concern along Pioneer Avenue from most feedback groups, including taxi operators, senior citizens, BUMPS operators, community forums, and the online mapping survey.

Parking issues on the Spit also warrant ongoing attention as evidenced by the recent Homer Spit Parking Study and subsequent proposals to construct new parking areas. Providing public or private seasonal shuttle services could help to address these issues.

Environmental Impacts

In 2022, from Memorial Day weekend to Labor Day, 817,000 vehicle trips were counted at the Spit data collection location, equivalent to approximately 153,000 gallons of gasoline consumed and the release of 1,400 metric tons in CO₂ emissions. If even 10% of those trips could be made by transit, there would be a reduction in CO₂ emissions of 140 metric tons.

2 *Changes in Mobility by State*. Bureau of Transportation Statistics. (n.d.)

EVACUATION ROUTES

Tsunamis

Earthquakes can trigger an underwater landslide in Kachemak Bay, which means it is essential to evacuate within minutes of a tsunami warning being issued. The City of Homer has three tsunami evacuation routes, shown in Figure 14. The routes from the Homer Spit and areas south of Beluga Slough use Kachemak Drive to get to East End Road. Areas north of Beluga Slough use Lake Street and Heath Street to get to Pioneer Avenue. These evacuation routes are marked with official blue and white Tsunami Evacuation Route road signs.

Wildfires

Wildfires are a growing concern in Homer. According to a climate

risk analysis done by the Woodwell Climate Research Center the length of the wildfire season will increase as Alaska's climate changes. While the City of Homer does not have specific wildfire evacuation routes laid out, their Emergency Operations Plan does allow the Incident Commander to issue evacuation orders as necessary. In the event of a wildfire, the City of Homer would partner with state fire response to evacuate the rural areas of the City.

What improvements are needed?

As road improvements are made to identified evacuation routes, the ability to evacuate areas at risk of a tsunami or wildfire needs to be a consideration in the road design. Improving the network of neighborhood connections will facilitate wildfire evacuation.

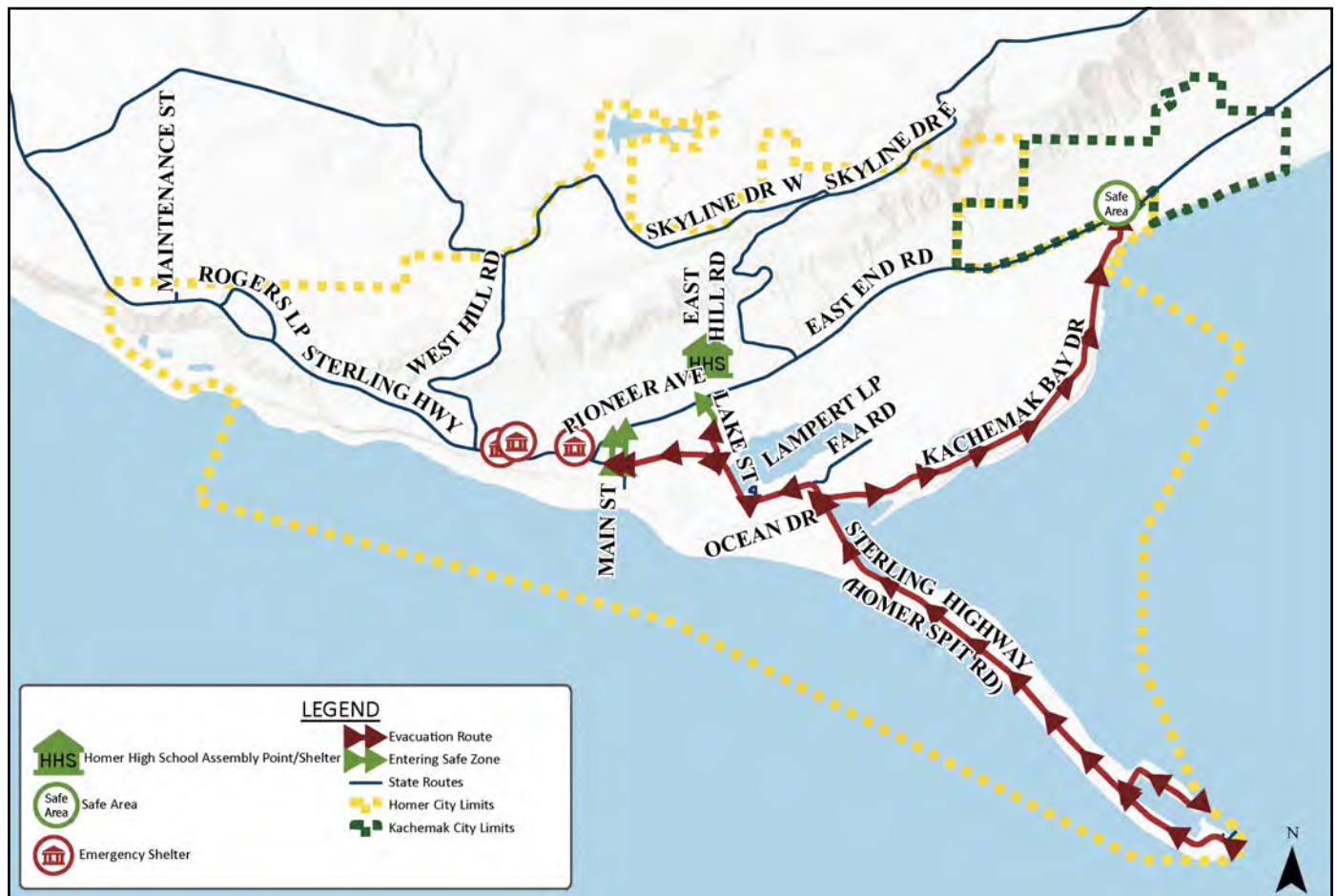


Figure 14: City of Homer Tsunami Evacuation Routes

TRANSPORTATION FUNDING

The City of Homer Accelerated Roads and Trails (HART) Program is funded by a voter-approved sales tax and properties assessments. The fund is used to reconstruct substandard city roads, upgrade existing roads, and to construct new streets and non-motorized trails. The current program was authorized by voters for a 20-year period, through December 31, 2027. Roads (including associated non-motorized infrastructure such as sidewalks) are allocated 90% of the available fund and trails are allocated the remaining 10%. The HART funds can be used for projects that the City funds completely, as the City contribution to grant-funded projects, and as the City contribution to projects where the developer is required to construct a street to full arterial or collector road standards (see Title 11.04.050).

The HART funds allow the City of Homer to improve the transportation system in accordance with City of Homer transportation planning documents. The criteria for use of HART funds are reviewed every other year by the Homer Planning Commission. The use of the HART funds is reviewed by the City Council annually.

The HART fund authorization period will end within the first five years of this plan and will need to be reauthorized in order to continue to fund projects that meet the City's goals as identified in this plan.



Figure 15: City of Homer Poopdeck trail at the Homer Public Library.



Figure 16: Greatland Street Improvements were a HART funded project in 2017.

Transportation System Guidelines



DESIGNING FOR PERSONS OF ALL AGES AND ABILITIES

Homer residents and community leaders have a long-standing commitment to developing transportation corridors and mobility networks that are inclusive for individuals of all ages and abilities; however, mobility barriers need continued attention.

Over the last 20 years, the need for transportation networks to support mobility for all ages and abilities were explicitly stated in the City's planning documents. The 2004 Homer Non-Motorized Transportation and Trail Plan called for "creating an interconnected, accessible, non-motorized transportation system in Homer." Similarly, the 2005 Homer Area Transportation Plan (originally drafted in 1999), explained that "an accessible, non-motorized transportation system increases opportunities for mobility." The 2008 Homer Comprehensive Plan, echoed in the 2018 Homer Comprehensive Plan Update, noted that "without linked sidewalks, trails, crosswalks, and pedestrian ways, it is often difficult for seniors to navigate on foot and often impossible for those with disabilities that require a wheelchair."

Specific Needs

Seniors

Homer is relatively unique in its senior population when compared to Alaska in general and the nation at large. According to 2021 data from the U.S. Census Bureau¹, roughly 20.3% of the Homer population is age 65 and older, compared to 13% statewide. While the median age of Homer residents is about 39 years of age, there is also a significant portion of residents that are nearing retirement age. Homer's aging population of persons 60 years and older shows a continuing upward trend.

A recent report from the U.S. Department of Health and Human Services quantifies mobility realities for aging individuals. The *2020 Profile of Older Americans*² reports that 40% of adults aged 65 and older experience "difficulty with

mobility" and experience challenges "walking and climbing stairs." Likewise, 22% of the aging population self-report "difficulty seeing," 31% report "difficulty hearing," and an additional 27% report "difficulty with cognition." All these factors need to be considered within Homer's transportation planning.

Previously identified non-motorized corridors near the Senior Center and surrounding neighborhood need particular attention to create dedicated, safe, and inclusive infrastructure with connections made to the business district, shopping, and restaurants, as well as to the medical district.

Individuals with Disabilities

According to the most recent nationwide data collected, 1 in 4 adults, roughly 61 million Americans, experience a significant disability that impacts "major life activities." Of those identified disabilities, the majority involve mobility issues, followed by cognition, vision, and hearing. Those experiencing a disability also have a far greater likelihood of experiencing job insecurity, housing insecurity, low income households, as well as transportation insecurity. As identified by the Alaska Mental Health Trust Authority, lack of transportation and mobility options increases the likelihood of individuals with disabilities experiencing social isolation, unemployment, lack of independence, limited access to medical care, limited access to rehabilitation programs, as well as significant barriers to accessing goods and services as part of everyday activities.³ The non-motorized transportation network is of particular importance when considering how individuals with disabilities travel within the community.⁴

1 *Census Bureau Profile for Homer, Alaska*. U. S. Census Bureau. (n.d.).

2 *2020 Profile of Older Americans*. Administration for Community Living. (May 2021).

3 *2022 Alaska Scorecard*, Alaska Mental Health Trust Authority. (April 2023).

4 *CDC: 1 in 4 US adults live with a disability*. Centers for Disease Control and Prevention. (2018, August 16).

Speed, Safety, and Crash Outcomes

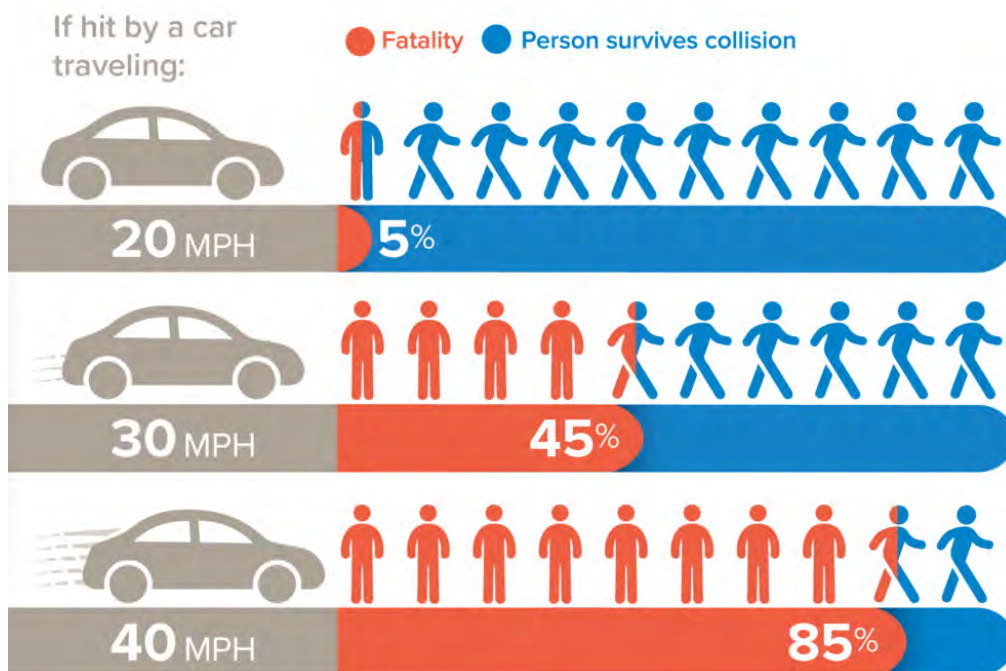
Aging adults and individuals with disabilities are far more likely to experience serious injury or death within transportation networks. Both groups are typically more reliant on the pedestrian environment to meet daily mobility needs and as such are more vulnerable. Studies also indicate a much higher rate of injury for both groups when involved in pedestrian-vehicle collisions. According to recent studies, individuals using wheelchairs have a 36% higher mortality rate in pedestrian/vehicle crashes than the general population. Similarly, the risk of severe injury or death for a 70-year-old pedestrian involved in a vehicular collision at 25 mph is similar to the risk for a 30-year-old pedestrian at 35 mph.⁵

In all cases of pedestrian and vehicular crashes, speed is a clear determining factor for injury and fatality outcomes for pedestrians. The vehicle speed to pedestrian injury rate increases exponentially as vehicle speed increases. Injury rates increase when size and mass of vehicles are also taken into account.

All Ages & Abilities Design Best Practice and the ADA

“Designing for all abilities: The design of sidewalk environments is important to all pedestrians, but is particularly important to those with disabilities who have limited travel choices and rely most on the pedestrian environment. For example, older adults, persons with vision impairments, and children frequently rely on the sidewalk to travel independently within their community for shopping, recreation, exercise, and walking to school.”

Federal Highway Administration



National Traffic Safety Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles. Available from: <https://www.nts.gov/safety/safety-studies/Documents/SS1701.pdf>

Figure 17: Pedestrian Injury Rates by Speed of Vehicle

⁵ Kraemer, J. D., & Benton, C. S. (2015, November 20). *Disparities in road crash mortality among pedestrians using wheelchairs in the USA: Results of a Capture-recapture analysis*. BMJ open.



Figure 18: Curb Ramps that Direct the User into the Crosswalk

Homer's infrastructure can be planned and constructed with users of all ages and abilities in mind, using ADA compliance as a minimum standard as well as consulting the U.S. Access Board's *(Proposed) Public Rights-of-Way Accessibility Guidelines* (PROWAG) and FHWA's *Accessible Sidewalks and Street Crossings* recommendations as design best practice.

While ADA guidelines set minimum standards for slope, width, length, and surface conditions for an accessible pedestrian route, the experience of users of all ages and abilities should also be considered. Diagonal curb ramps at intersections, for instance, meet minimum ADA requirements and are employed at various locations throughout the City of Homer. However, they are not the ideal design because they direct wheelchair users, and possibly visually impaired pedestrians, towards the middle intersection. Parallel or perpendicular curb ramps

that direct users into the crosswalk are the preferred design. Diagonal curb ramps, however, do provide an acceptable, cost-effective solution in retrofit situations when other types of ramps may be cost-prohibitive.

Another common barrier frequently encountered is steep sidewalk cross slopes, particularly at driveways. ADA requires a maximum cross slope of 2% but this has been frequently exceeded. Severe cross slopes require wheelchair users and other pedestrians to work against the effects of gravity to maintain their lateral balance. Pedestrians using crutches or canes may be forced to turn sideways to keep their base of support at a manageable angle. Plans and specifications need to clearly call out the maximum allowable grades and contractors need to be held accountable for constructing in accordance with the documents.



Figure 19: Driveway Entrance with Level Cross Slope



Figure 20 : Driveway Entrance with Steep Cross Slope

PEDESTRIAN CROSSWALKS

Difficult road crossings can be a barrier, separating otherwise connected walking and biking networks. Areas where improved pedestrian crossings are desired include:

- **Homer Spit (specific locations along the last mile of roadway)**
- **Pioneer Avenue (at Svedlund Street, Kachemak Way, Heath Street, and Lake Street)**
- **East End Road (at Ben Walters Lane and Paul Banks Elementary School)**
- **Sterling Highway (on Lake Street at both ends of the Beluga Lake causeway)**

The *Alaska Traffic Manual* gives guidance on where marked pedestrian crosswalks are desirable as well as the type of traffic control that is desirable (e.g., pavement markings, signs, signals).

An engineering study considers pedestrian volume, street width, traffic volumes, traffic approach speed, sight distance, availability of gaps in the traffic stream, and crash experience as part of making recommendations for a specific location. These guidelines are based on safety studies and are designed to ensure that drivers see pedestrians as they enter crosswalks and that drivers and pedestrians have similar expectations.

In general, traffic volumes are low enough in Homer that marked crosswalks can be considered for anywhere speed limits are 35 mph or lower. Where pedestrians have difficulty finding enough opportunities to cross between vehicles, a median refuge island could be useful. Alternatively, an electrical warning device could be used to alert drivers to yield to pedestrians (Figure 21). Where vehicle speeds are higher, a pedestrian hybrid beacon could be considered.



Figure 21: Electrical Warning Devices (Rectangular Rapid Flashing Beacon, or RRFB) on University of Alaska Fairbanks Campus

TRAFFIC CALMING

Traffic calming treatments can be used to reduce the speeds of vehicles in a specific area. Speed management can allow drivers more time to react and reduce the severity of a crash.⁶ In general, traffic calming devices are only suitable for local or collector roads. An engineering study will consider vehicle volume, speed limits compared to actual vehicle speeds, the presence of school zones or other pedestrian generators, crash history, and the availability of sidewalks. In addition to reconstruction, traffic calming elements can be incorporated into initial design projects.

Traffic Calming and Complete Streets

Traffic calming is often used to improve safety and comfort for walking and biking through retroactive treatments that decrease vehicle speeds in a neighborhood or along a corridor.

Designing for Complete Streets is proactive and includes: considering walking and biking when setting design speeds; appropriately separating users in time and space; improving connectivity and access for walking, biking, and transit; and implementing safety treatments.

Complete Streets provides a mechanism for considering the land use context of the neighborhood in determining needed improvements. For example, the types of improvements needed will vary depending on if the area is residential, commercial, industrial, or mixed; natural, rural, suburban, or town center.

Complete Streets is one of several safety-focused approaches to transportation planning. Figure 22 briefly describes several of these.



Figure 22: Safety-focused approaches to transportation planning

6 Xu, G. (2022). *Speed Management is Key to Road Safety*. Public Roads, Vol 85 No. 4. FHWA.

Traffic Calming Devices

Traffic calming treatments are most effective in the immediate area surrounding each device. As such, a series of devices should be installed to keep speeds low throughout a corridor. The following sections describe effective strategies for calming traffic.

Speed Humps and Tables

Speed humps are parabolic raised areas of pavement. They are typically between 12 and 22 feet in length with a relative rise of 3 inches and extending the width of the travel way. Speed humps are designed to reduce 85th percentile speeds between 25 to 35 miles per hour. Speed tables have a similar size and shape to speed humps; however, they have a flat top. The flat surface is usually textured and can be used as a crosswalk for pedestrians. Speed humps and tables are most effective when used in a series or with other traffic calming measures.

Advantages: These traffic calming devices are compatible with bike lanes if the speed humps and tables do not encroach into the bike lanes. Large vehicles can traverse speed humps and tables at low speeds.

Disadvantages: Speed humps and tables can be damaged by snowplows and graders, and may require additional costs. Supplemental signs and markers also require additional maintenance efforts. Emergency response times are affected by these devices and emergency personnel have been injured while traversing speed humps.

On Street Parking

On street parking reduces street width and can be applied alongside other traffic calming measures. Parallel parking is the most effective form of on-street parking as it increases side friction to traffic flow.

Advantages: On street parking provides convenient access to local businesses. First responders prefer this traffic calming device to all other devices.

Disadvantages: This can reduce road visibility and intersection sight distance. Vehicles must be removed from the road during snow plowing operations.

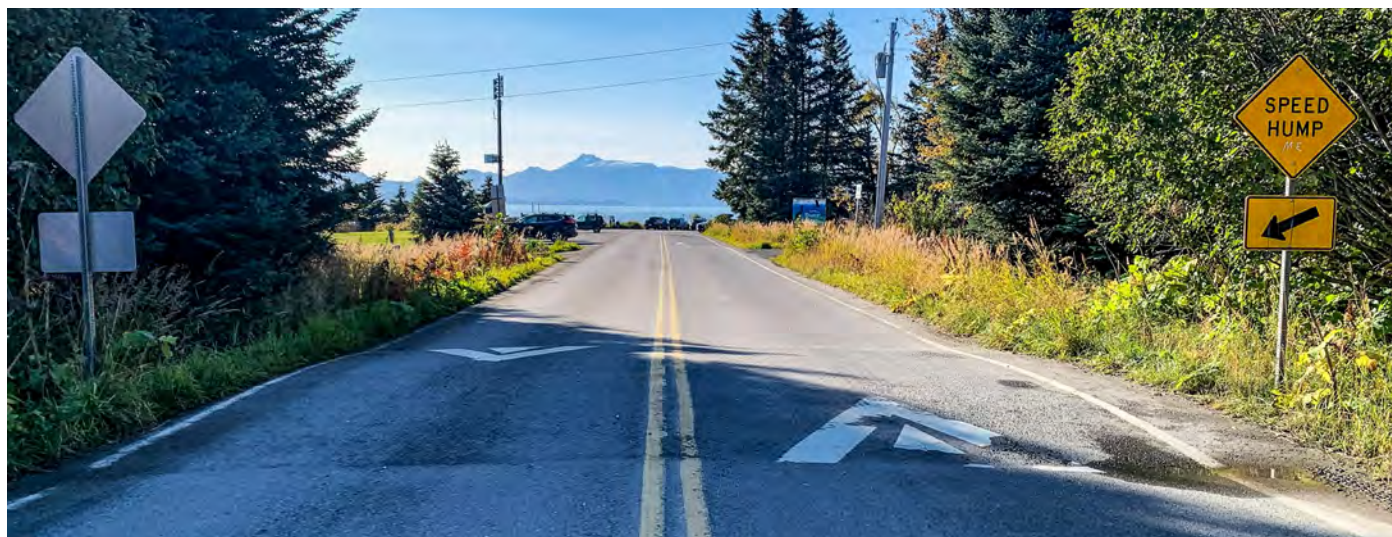


Figure 23: Speed Hump on Beluga Pl

Bulb-Out

A bulb-out is when the curb is extended horizontally into the street, making the roadway narrower. Alone, it is not effective at reducing vehicle speeds, but bulb-outs can be effective when used with other traffic calming measures.

Advantages: Bulb-outs provide a lot of improvements for pedestrians. They control parking encroachment into crosswalks, increase pedestrian sight distance, and reduce pedestrian crossing distances. These changes mean that pedestrians are more likely to cross when gaps between traffic are desirable. Mid-block bulb-outs can be used for beautification and landscaping.

Disadvantages: Bulb-outs can be damaged by snowplows and graders and may require a metal armor plate at likely strike points.

Chicanes

Chicanes are a series of at least three mid-block curb extensions that create S-shaped curves on the roadway. They reduce speed by forcing drivers to move horizontally and slow down around curves. To be effective, they must be placed in such a way that deflects traffic rather than simply narrowing the roadway.

Advantages: Bike lanes are compatible with chicanes. Large vehicles and emergency response vehicles can negotiate chicanes. Chicanes can also be used for landscaping which may further reduce speed by eliminating long sight lines.

Disadvantages: Chicanes require additional maintenance efforts. They can also result in increased response times to emergency calls.



Figure 24: Curb Bulb-outs in Downtown Anchorage, Alaska

Traffic Circles

Traffic circles are circular islands in the middle of an intersection. They slow down traffic by causing drivers to deflect right upon approach, make a short left “turn” around the circle, and then to do a sharp right turn to exit the intersection.

Advantages: Bike lanes are compatible with traffic circles. Landscaping on the traffic circles may reduce speed by eliminating long sight lines.

Disadvantages: Traffic circles require additional maintenance efforts and may be difficult to negotiate for larger vehicles. The slower speed necessary to navigate the circle may result in increased response time to emergency calls. Trucks and emergency vehicles may need truck aprons to accommodate vehicles with a larger turn radius.



Figure 25: Traffic Circle on Gillam Way in Fairbanks

Speed Feedback Signs

These signs monitor the speeds of passing vehicles and display the speeds on a variable message board. When a vehicle traveling at a speed that exceeds the posted speed limit passes, the sign will flash or display a message such as “slow down”.

Advantages: Bike lanes and large vehicles are compatible with speed feedback signs. This traffic calming treatment may address the public perception of speeding better than any other treatment.

Disadvantages: There are ongoing maintenance and operation costs in providing electrical service to the sign.



Figure 26: Speed Feedback Sign on Gillam Way in Fairbanks

Supplemental Traffic Calming Measures

Sidewalks and Crosswalks – Increase pedestrian compliance which reduces conflicts between pedestrians and vehicles.

Landscaping – Increase vehicle and pedestrian visibility.

Education and Enforcement – These can be used as a precursor to physical measures to help roadway users know how to navigate upcoming traffic calming measures.

Goals and Objectives for the Transportation System



The City of Homer recognizes the critical role that transportation plays in shaping the community's livability, sustainability, and economic vitality. The goals and objectives for the Transportation Plan were developed with input from the city staff and members of the community. The goals describe the fundamental outcomes of the Transportation Plan, while the objectives are more specific and measurable outcomes that support the goals. The following goals and objectives represent the community's commitment to building a safe, sustainable, and accessible transportation system that meets the needs of all members of the community.

GOAL 1: INCREASE SAFETY OF INTERACTIONS BETWEEN DIFFERENT MODES OF TRAVEL

Community members want travel within the city to be safer, including for people walking, biking, and driving, as well as for the movement of goods.

Objective 1A: Improve safety at conflict points between pedestrians and motor vehicles, especially at intersections

Safety can be improved at conflict points (where pedestrian and motor vehicle paths cross) by making crossing locations more visible, encouraging motor vehicles to yield to pedestrians, and reducing the crossing distance.

Objective 1B: Provide for safe use of the right-of-way by all transportation modes, considering the land use context and type of vehicle

Safety can be improved by policies that help to define the network for different users (such as defining truck routes or defining maximum speeds for e-bikes on pathways) and through infrastructure improvements to help separate users with different weight and speed characteristics (such as building bike lanes, pathways, and sidewalks).

Objective 1C: Improve user understanding of how to safely share the public right-of-way

Public awareness campaigns are another method to improve safety. One example of education that has been shown to reduce crashes is safety education for children regarding safe pedestrian and bicycle behaviors.

GOAL 2: PROVIDE A CONNECTED NETWORK OF LOCAL AND COLLECTOR ROADS AND TRAILS THAT BALANCES MODES BASED ON LAND USE CONTEXTS

Community members desire a connected network for all users. Connected walking and biking networks provide more opportunities for walking and biking. A connected collector road network helps to reduce the number of short trips on the arterial road network. This reduces the need for increasing the number of traffic lanes or installing more restrictive traffic control on arterial networks. A connected collector road network works hand-in-hand with the walking and biking networks to reduce the overall cost of the transportation network and address climate impacts. As new connections are built, the design for each user type should reflect the land use context. For example, frequent safe pedestrian crossings are needed in commercial areas.

Objective 2A: Identify a priority pedestrian network that connects key generators and develop a plan to build these connections

Community members desire to walk more frequently. Building or improving pedestrian facilities that connect to locations where people want to walk (such as schools, the library, and shopping areas) will improve options for walking.

Objective 2B: Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections, and encourage appropriate bicycle parking

Community members desire to bicycle for transportation more frequently. Building or improving low-stress bicycle facilities that connect to locations where people want to travel and providing appropriate bicycle parking at those locations (such as schools, the library, and shopping areas) will improve options for biking.

The Low-Stress Bicycle Network describes a connected system (or network) of shared roadways, bike lanes, sidewalks, paths, and trails that are suitable for bicyclists of all ages and abilities.

Objective 2C: Identify key gaps in the collector road network and develop a plan to build these connections

Prioritizing building or improving collector roads that allow drivers to access a signal on a major arterial or travel directly between adjacent neighborhoods will decrease delay and trip length without necessitating major improvements to the arterial network.

Objective 2D: Identify and address opportunities for parking once and then walking, ride-sharing, or using transit

Park-and-ride facilities allow visitors to get out of their car or RV and travel to attractions using transit. Consolidated parking that serves several businesses allows people to park once and then visit several businesses without driving between each one.

GOAL 3: MAINTAIN TRANSPORTATION NETWORK TO BE USABLE YEAR-ROUND

Community members desire roads and walking and biking facilities to be maintained so they are usable in the winter and in summer.

Objective 3A: Reconstruct and proactively maintain pedestrian facilities to ensure year-round usability

Sidewalks, paths, and trails are less usable when drainage, lighting, and wayfinding are inadequate. Addressing problems with the existing pedestrian system will help to make them usable year-round. Additionally, establishing standards for winter and summer maintenance for specific locations will help users know what to expect.

Objective 3B: Reconstruct and proactively maintain bicycle facilities to ensure year-round usability

Shared roadways, bike lanes, paths, and trails are less usable when drainage, lighting, and wayfinding are inadequate. Addressing problems with the existing bicycle network will help to make it usable year-round. Additionally, establishing standards for winter and summer maintenance will help users know what to expect.

Objective 3C: Reconstruct and proactively maintain City of Homer roadways to ensure year-round usability

Inadequate drainage can also impact the usability of roadways. Improving drainage during roadway reconstruction can help keep the pavement in good condition for a longer period of time. Establishing maintenance standards for city roads and ways for the public to alert the city when there are concerns at specific locations can help make roadways usable year-round.

Objective 3D: Work with DOT&PF to improve winter maintenance on state-owned sidewalks, paths, or bike lanes

The public has identified maintenance of the sidewalks, paths, or bike lanes along DOT&PF-owned roadways as a top priority

for improvement. Transferring maintenance responsibility is one possible solution. There may be some roads currently under state ownership that should be under city ownership. It is necessary for the COH and ADOTPF to cooperate in jointly planning for roads in the COH (and broader) area.

Objective 3E: Manage resources to maximize and balance maintenance efforts

Improving the efficiency of maintenance activities allows better maintenance without increasing resources. Designing new roadways, sidewalks, paths, or trails to accommodate the existing equipment or buying new equipment that makes it easier to clear debris and snow from existing infrastructure could help balance maintenance efforts and make them more efficient.

Objective 3F: Update and enforce design standards for walking, biking, road, and public transportation networks

Enforcing and updating standards for infrastructure that serves all modes during design reviews will ensure consistency and improve travel options.

Objective 3G: Include appropriate improvements for each travel mode as part of reconstruction or new construction projects within the public right-of-way

As roads are constructed or reconstructed, infrastructure should be considered for each mode. New or improved infrastructure should be consistent with the land use context (such as providing sidewalks in urban areas and wide shoulders or separated paths in rural areas), meet design standards, and help to complete the priority network for that mode.

GOAL 4: PROVIDE EXPANDED TRANSPORTATION OPTIONS FOR RESIDENTS AND VISITORS

Community members desire a transportation system that provides additional transportation options and reduces environmental impacts.

Objective 4A: Support the development of a public transportation network

Public transit provides additional travel options and reduces travel by a single occupant in a vehicle. The City could support the private development of transit by building transit stops or park-and-ride facilities.

Recommendations



To achieve the goals and objectives of the Transportation Plan, the following policies and projects should be implemented. Many will be accomplished using working groups or task forces. These are not arranged in order of priority. Many will be accomplished using working groups or task forces.

POLICIES

Truck Network

Goals and Objectives		Objective 1B Provide for safe use of the right-of-way by all transportation modes, considering the land use context and type of vehicle
Policy Description		Establish Truck Routes for the City of Homer to reduce the number of through trucks traveling on Pioneer Avenue , taking into consideration land use context, pavement structure, and heavy vehicle turning requirements.
Benefits		Could reduce truck-pedestrian interactions. Establishes understanding between different agencies and companies for where trucks should be traveling.
Challenges		Truck routes must be designed to accommodate truck movements. Designating truck routes for DOT&PF roads will need DOT&PF approval. Consult with trucking companies and the public to ensure concerns are addressed.

A freight network map for all of Alaska lists the highways that are essential for freight routes, including the entire section of the Sterling Highway all the way to the end of the Homer Spit. DOT&PF Title 17 AAC 25.014 describes the type of trucks that are allowed on these freight routes. The federal and state governments leave non-highway truck route decisions to local governments.



Figure 27: Dump truck turning from Lake Street onto East End Road

E-Bike Legislation

Goals and Objectives 	Objective 1B Provide for safe use of the right-of-way by all transportation modes, considering the land use context and type of vehicle
Policy Description	Consider legislation governing the use of electric bikes (e-bikes) to reduce the possibility of unsafe interactions with other modes. E-bikes are popular for many reasons: they allow riders to go farther with less effort than traditional bikes, they are environmentally friendly, and they cost less to use than cars.¹ However, e-bikes present a unique dilemma as they are a hybrid between a human powered bicycle and a motorcycle. Currently, e-bikes fall under the Alaska definition of “motor-driven cycle”, which requires an operating license and has a minimum age requirement of 14. The classification also prohibits e-bikes from sidewalks or bike paths. Local governments, however, can enact their own legislation regulating e-bikes. A task force would be a good way to implement this effort; input from the cycling community should be solicited. The Municipality of Anchorage has a policy that could be used as a starting point.
Benefits	Increases safety of e-bike usage. Supports transportation mode options. Reduces conflicts between e-bikes users and other users. Encourages increased e-bike usage.
Challenges	Balancing regulations and allowances for E-bikes to satisfy the residents of Homer.

Bicycle Parking

Goals and Objectives 	Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections, and encourage appropriate bicycle parking
Policy Description	Adopt a bicycle parking ordinance for new and existing buildings that specifies the amount and location of secure, convenient bicycle parking available. Bicycle trips require safe and secure bicycle parking at either end of the trip. Adopting a bicycle parking ordinance for new and existing buildings would make the City of Homer a more bicycle friendly community. A task force would be a good way to implement this effort.
Benefits	Reduces the likelihood of bike theft. Protects vegetation (which would otherwise be used for bike parking if other options weren't made available). Encourages community members to bike more often.
Challenges	Determining where to place bicycle parking and where different types (short- versus long-term) of bicycle parking should be.

As an example, Sitka, which received a Silver Bicycle Friendly Community Award from the League of American Bicyclists, used these APBP guidelines to improve their bike parking by recommending a minimum number of bicycle parking spaces for each land use category. A local biking advocacy group in Sitka also conducted a survey of community members to identify where bicycle parking was needed. New bike racks were installed in places identified by the community as part of Sitka's Walk, Bike, Win! downtown commuter challenge. These changes resulted in Sitka becoming a more bike friendly community.

1 (ABC10), A. M. S. A. (2022, August 27). *E-bikes are gaining popularity in the US. here's why*. abc10.com. Retrieved March 31, 2023

Transfer of Responsibility Agreements for State Roads

Goals and Objectives	Objective 3D Work with DOT&PF to improve winter maintenance on state-owned sidewalks, paths, or bike lanes
Policy Description	Pursue additional Transfer of Responsibility Agreements (TORAs) to allow the city to maintain roads and pathways that are currently maintained by DOT&PF. If the City has the resources (staffing and equipment) to take on the added responsibility, the City should then enter into discussions with the DOT&PF regarding transferring maintenance responsibility. The pathways along the Sterling Highway, East End Road, Lake Street, and Main Street could benefit from a TORA with the State of Alaska.
Benefits	Maintain roads and pathways to a higher standard than current maintenance efforts.
Challenges	City of Homer needs sufficient staffing and equipment to take on added maintenance responsibility. Payments from DOT&PF to City of Homer under a TORA agreement are not guaranteed to cover all of the City's costs. Coming to a mutually beneficial agreement between DOT&PF and the City of Homer.

DOT&PF and the City of Homer currently have two TORAs: one for the Homer Spit and one for Pioneer Avenue. These two TORAs allow the City of Homer to maintain these state roads to the standards desired by community members.

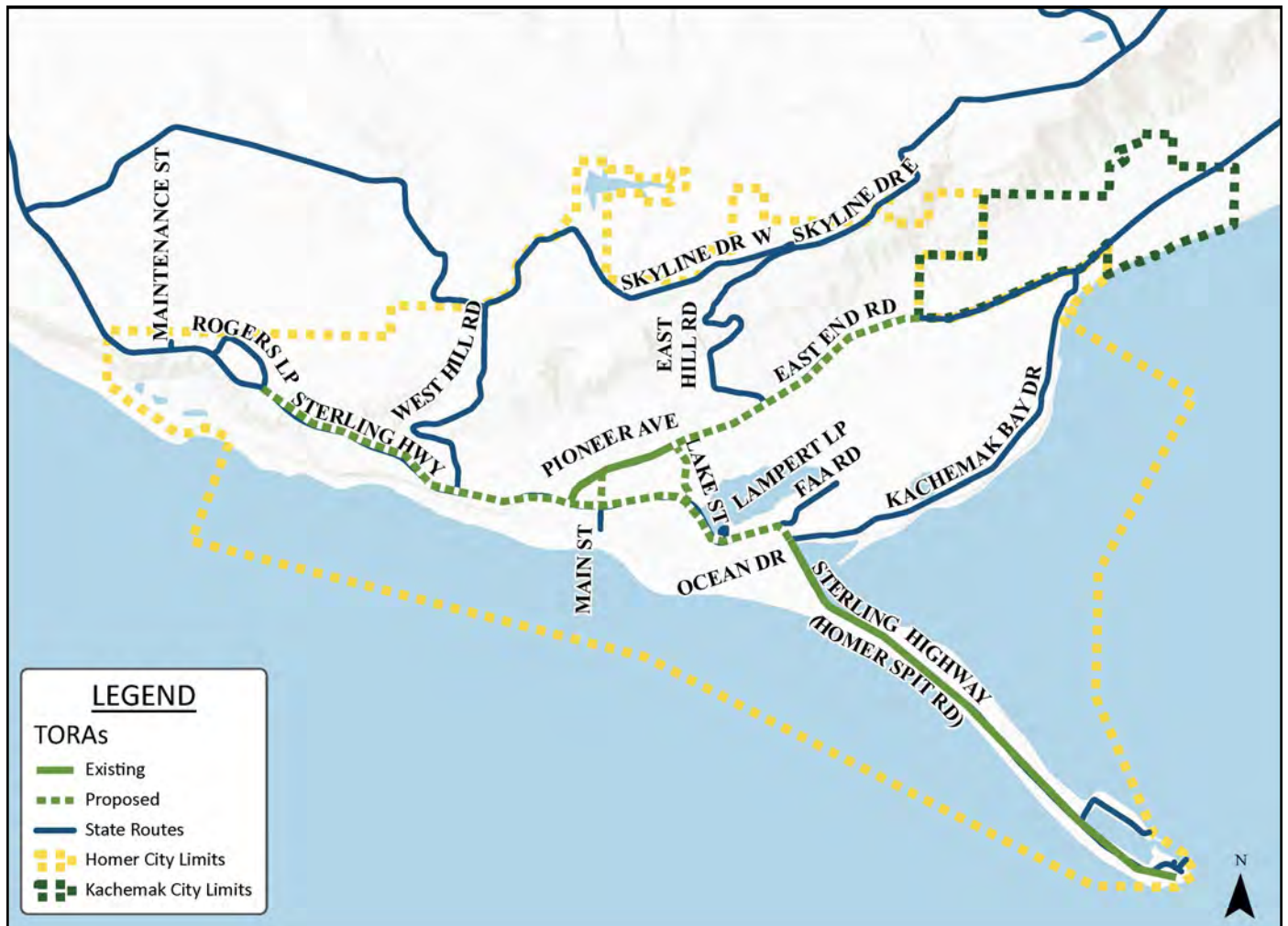


Figure 28: Existing and Proposed Transfer of Responsibility Agreements

Ownership of State Roads

Goals and Objectives	 Objective 3D Work with DOT&PF to improve winter maintenance on state-owned sidewalks, paths, or bike lanes
Policy Description	Develop an agreement with the state to transfer ownership of some state roads to the city. Under these agreements, the state pays to have the road constructed to Homer's standards, and then the City takes over ownership and maintenance responsibility. Main Street is a good example of a road that functions more like a local road. As such, it may be in the best interests of the City of Homer to take over ownership of Main Street. Pioneer Avenue is another example of a street the City may want to take over.
Benefits	The City can maintain the road to the community's standards. The City can control design decisions, such as the presence of a sidewalk or pathway.
Challenges	Coming to an agreement that is equally beneficial for the state and city.

Maintenance Standards

Goals and Objectives	 Objective 3E Manage resources to maximize and balance maintenance efforts
Policy Description	Set maintenance standards for the City of Homer to meet public expectation, such as how frequently or under what circumstances roads, sidewalks, paths, and trails will be plowed in winter and swept in summer.
Benefits	Helps define the level of effort needed so the City can plan for maintenance equipment and budget to meet that need. Standards can also be communicated to the public.
Challenges	Determining priorities for sidewalks, paths, and trails within the existing road priorities. Deciding a reasonable maintenance time frame that satisfies the public and is achievable by the maintenance crew.

Update Non-Motorized Facility Design Standards

Goals and Objectives	 Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking Objective 3F Update and enforce design standards for walking, biking, road, and public transportation networks
Policy Description	Update design standards for walking and biking infrastructure to ensure they are connected and are maintainable. New development should include connections to sidewalks and paths. Standards for the way sidewalks and paths are built in the future can ensure that the available equipment can be effective in maintaining future paths. A task force could help to implement this policy.
Benefits	Reviewing development plans for connectivity to sidewalks and paths will remove obstacles to walking and biking. Designing new roads, sidewalks, paths, and trails to meet the operational characteristics of the City's maintenance equipment will increase the effectiveness of maintenance efforts.
Challenges	Keeping standards up to date to include new equipment. Adapting to locations where design standards cannot be met.

Complete Streets/All Ages and Abilities Policy

Goals and Objectives 	Objective 3G Include appropriate improvements for each travel mode as part of reconstruction or new construction projects within the public right-of-way
Policy Description	Develop a Complete Streets policy for Homer. “Complete streets” is an approach to planning, designing, building, and maintaining streets that supports safe travel and access for all ages and abilities of all modes, including pedestrians, bicyclists, motorists, and transit riders. A complete streets policy ensures that all users are considered at all phases of all projects.
Benefits	Can be applied to all streets for assessment. Will determine if a street is missing important safety elements.
Challenges	Determining appropriate treatments for variety of contexts. Attaining funding.

Transit Options

Goals and Objectives 	Objective 4A Support the development of a public transportation network
Policy Description	Seek out partners to provide public transportation service in the Homer area. Of particular interest are year-round transit options that serve area residents and seasonal options that encourage visitors and employees to park their vehicles and travel to the Homer Spit and other highly visited areas by bus and on foot. There are numerous examples of small community systems throughout the state, including Glacier Valley Transit, Soaring Eagle Transit, Sunshine Transit, Valley Transit, CARTS, and BUMPS.
Benefits	Helps people without access to vehicles get to jobs, shops, and services, and also increases travel options for everyone. Reduces environmental impacts by reducing vehicle miles traveled.
Challenges	Federal funding is available for systems providing year-round service. Attaining funding. Seasonal variation in demand. Requires public and non-profit partnership.

Traffic Calming

Goals and Objectives 	Objective 1B Provide for safe use of the right-of-way by all transportation modes, considering the land use context and type of vehicle
Policy Description	Develop a Traffic Calming Manual that describes treatments that are effective and acceptable to the City of Homer. Traffic calming treatments discourage cut-through traffic and encourage vehicles to travel at speeds that are appropriate for the land use context. The Traffic Calming Manual should describe the data needs for the analysis and how it should be collected; address the types of treatments available, lighting and signage needs, and when and where a treatment is appropriate; and describe how to select treatments for a specific location.
Benefits	Walking and biking along a road, as well as recreating near a road, is safer and more comfortable when adjacent vehicles are traveling at slower speeds.
Challenges	Attaining funding. Educating the public. Potential for additional maintenance burden.

PROJECTS

Bicycle Safety Campaign

Goals and Objectives 	Objective 1C Improve user understanding of how to safely share the public right-of-way
Project Description	Support efforts of a private partner to develop an effective education campaign that targets teaching bike safety to children. Safety education campaigns have been shown to be effective where new information is presented and where the target audience has not already formed habits. Thus, children are the best targets for bicycle safety campaigns. ²
Benefits	Reduces crashes and conflicts due to interactions between bicycles and vehicles.
Challenges	Finding appropriate private partner. Homer Bicycle Club has a “Homer Shares the Road” campaign that could be built upon.
Related Projects	N/A

Parking Study

Goals and Objectives 	Objective 2D Identify and address opportunities for parking once and then walking, ride-sharing, or using transit
Project Description	Conduct a parking study to determine the location and benefits of centralized parking lots. Many members of the community voiced frustrations with parking options, especially along the Spit and in the Central Business District (CBD). Parking along the Spit is particularly difficult in the summer when the port is in constant use by residents, businesses, and tourists. When there are visitors to the CBD, they must drive between stops, which increases congestion and discourages them from visiting multiple businesses. The lack of centralized parking options negatively affects local business owners in these areas by limiting the amount of foot traffic to their businesses. Building parking facilities in association with transit will allow visitors to get out of their car or RV and travel to attractions using walking or transit.
Benefits	Reduces the amount of vehicle traffic in congested areas. Encourages visitors to the CBD and Spit to visit more than one business and increase economic growth by connecting attractions and businesses. Potentially provides extra space for beautification and more local businesses by adding centralized parking locations.
Challenges	Cooperation of private entities. Determining the location of bus stops and parking lots that work well for transit users and the transit operator. Costs to acquire land for shared off-street parking.
Related Projects	Policy 9 Transit Options

² *Improving the effectiveness of road safety campaigns: Current and new practices.* IATSS Research, Vol 34 No. 2. (March 2011).

Improve Drop-Off and Pick-Up Locations at Schools

Goals and Objectives 	Objective 1A Improve safety at conflict points between pedestrians and motor vehicles, especially at intersections Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking
Project Description	Study schools with circulation concerns and develop plans to improve them. Traffic congestion during school pick-up and drop-off times is a safety concern for several schools in Homer. Improving bus circulation, parent pick-up and drop-off areas, bicycle parking, sidewalk connections, and signage could reduce these problems.
Benefits	Reduces congestion on roads near schools. Protects children and increases drivers' awareness of them during pick-up and drop-off. Encourages student to walk or bike to school by improving pedestrian facilities. Encourages practice of healthy habits and decreases use of motor vehicles, thereby improving air quality.
Challenges	Right-of-way and utilities may limit feasible alternatives. Coordination with Kenai Peninsula Borough, Kenai Peninsula School District, and DOT&PF.
Related Projects	Project 4 Neighborhood Connectivity to Schools

Neighborhood Connectivity to Schools

Goals and Objectives 	Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking Objective 3A Reconstruct and proactively maintain pedestrian facilities to ensure year-round usability Objective 3B Reconstruct and proactively maintain bicycle facilities to ensure year-round usability
Project Description	Encourage Kenai Peninsula Borough to build improved trails between schools and surrounding neighborhoods. Several survey comments requested established trails from neighborhoods to the nearby schools. West Homer Elementary, Middle, and High schools all have natural surroundings to the north. It seems that students have been traversing these areas despite the lack of a maintained and designated trail. To ensure the safety of children walking to school, and to create more connectivity to the schools, a set of trails between the schools and the surrounding neighborhoods should be identified, constructed, and maintained.
Benefits	Provides a safe passage for children walking to school, encouraging active transportation, and providing additional travel options.
Challenges	Coordination with Kenai Peninsula Borough.
Related Projects	Project 3 Improve Drop-Off and Pick-Up Locations at Schools Project 9 Identify Additional Priorities for Walking & Biking Infrastructure

Pioneer Avenue as an Extension of the HAP Loop

Goals and Objectives 	Objective 1A Improve safety at conflict points between pedestrians and motor vehicles, especially at intersections Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking Objective 3G Include appropriate improvements for each travel mode as part of reconstruction or new construction projects within the public right-of-way
Project Description	Evaluate pedestrian crossing improvements for Pioneer Avenue intersections. Community members identified the main intersections along Pioneer Avenue as being high stress locations for pedestrian crossings. An engineering study is needed to determine whether existing crossing treatments should be improved and what treatment(s) should be applied. Examples of treatments to be considered include high-visibility pavement markings, curb extensions, and rectangular rapid flashing beacons. There is already a plan in place to improve the intersections along Pioneer Avenue at Main Street and at Svedlund Street as part of the HAP Loop project.
Benefits	Eliminates barriers to walking and improves safety.
Challenges	Attaining funding. Right-of-way and utilities may be a concern.
Related Projects	HAP Loop Project (ongoing) Project 6 Old Town Connections as an Extension of HAP Loop

Old Town Connections as an Extension of HAP Loop

Goals and Objectives 	Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking
Project Description	Evaluate connecting HAP Loop through Old Town. Old Town is home to many hotels, restaurants, and local businesses. The HAP Loop provides access to the eastern part of Old Town but fails to connect the neighborhoods to the west. This project would evaluate the addition of pedestrian facilities in west Old Town with connections to the HAP Loop. It would also evaluate the need for improvements to the pedestrian crossing at the intersections of Sterling Highway and Pioneer Avenue.
Benefits	Increases non-motorized accessibility, provide travelers with more options. Improves the areas near many hotels, which will provide seasonal visitors with more travel options. Could reduce the amount of motorized traffic traveling on and across the Sterling Highway at Pioneer Avenue, an intersection that was identified as being difficult in the summer.
Challenges	Attaining funding. Right-of-way and utilities may be a concern. Coordination with DOT&PF is required for Main Street.
Related Projects	HAP Loop Project (ongoing) Project 5 Pioneer Avenue as an Extension of the HAP Loop

Kachemak Drive Reconnaissance Engineering Study

Goals and Objectives 	Objective 1A Improve safety at conflict points between pedestrians and motor vehicles, especially at intersections Objective 1B Provide for safe use of the right-of-way by all transportation modes, considering the land use context and type of vehicle
Project Description	Conduct a reconnaissance engineering study to identify concerns, needs, and obstacles for improving Kachemak Drive for non-motorized travel and to develop potential solutions. The safety of non-motorized transportation and interactions between motorized vehicles along Kachemak Drive was a repeated concern of survey participants. A two-lane road with a 35-mph speed limit and limited shoulders, this route is popular for walking, biking, and driving, but the interactions between users is uncomfortable and there is limited right-of-way for improvements.
Benefits	Improves safety.
Challenges	Attaining funding. Limited right of way. Coordination with DOT&PF.
Related Projects	Project 9 Identify Additional Priorities for Non-Motorized Infrastructure

Regularly Update Existing Trails Maps

Goals and Objectives 	Objective 2A Identify a priority pedestrian network that connects key generators and develop a plan to build these connections Objective 2B Identify a priority low-stress bicycle network that connects key generators, develop a plan to build these connections and encourage appropriate bicycle parking Objective 3A Reconstruct and proactively maintain pedestrian facilities to ensure year-round usability Objective 3B Reconstruct and proactively maintain bicycle facilities to ensure year-round usability
Project Description	Regularly update existing trails maps in GIS for online use and for creating print maps. Trails such as the Beluga Trail and Reber Trail extend the non-motorized network. Trails are only effective when potential users are aware of them. Updating maps to include information about the difficulty level and type of maintenance, will help individuals to understand which routes are best for them.
Benefits	Informs the public of the trail routes available to them. Helps to identify gaps within the non-motorized network and inform the public as they are filled.
Challenges	Staffing. Coordination with trail user groups, such as Homer Trails Alliance and Kachemak Nordic Ski Club.
Related Projects	Project 9 Identify Additional Priorities for Non-Motorized Infrastructure

Identify Additional Priorities for Walking & Biking Infrastructure

Goals and Objectives 	Objective 3A Reconstruct and proactively maintain non-motorized facilities to ensure year-round usability
Project Description	Identify priority areas for non-motorized travel and develop a plan for constructing sidewalks, paths, and trails in those areas. Wayfinding and streetscape improvements should be included. Survey respondents identified numerous sidewalks, paths, and trails that they would like to see constructed. These include: - Connections between neighborhoods along Skyline Drive and those near the hospital and the high school - Sidewalk or bike lanes along East Hill and West Hill Roads - Pathways further out on the Sterling Highway and on East End Road - Path along routes parallel to Ocean Drive - Paths around the airport and connecting to areas along East End Road - Traffic calming along Skyline Drive - Access to beaches - Connections from outlying areas into Homer (ex: Diamond Creek Trails)
Benefits	Satisfies the public desire for trails, sidewalks, and bike lanes. Improves pedestrian safety. Adds to the transportation network.
Challenges	Attaining funding. Coordination with DOT&PF. Increased maintenance burden.
Related Projects	Project 8 Regularly Update Existing Trails Maps

Complete East-West Connections

Goals and Objectives 	Objective 2C Identify key gaps in the collector road network and develop a plan to build these connections
Project Description	Build additional east-west connections. This will add to the collector network and provide alternative routes to the heavily traveled arterial roadways. The road construction should include walking and biking infrastructure and traffic calming.
Benefits	Improves the collector network and reduces the stress on arterials like Pioneer Avenue.
Challenges	Attaining funding Right-of-way and utilities may be a concern Local public opposition due to change in neighborhood traffic volumes and speeds
Related Projects	Project 3 Improve Drop-Off and Pick-Up Locations at Schools

Abbreviations



AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
ADA	Americans with Disabilities Act
APBP	Association of Pedestrian and Bicycle Professionals
BUMPS	Basic Unified Multi-Path Service
CBD	Central Business District
DOT&PF	Alaska Department of Transportation and Public Facilities
EPA	United States Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
HAP	Homer All Ages and Abilities Pedestrian Pathway
IATSS	International Association of Traffic and Safety Sciences
ILC	Independent Living Center
KE	Kinney Engineering
LOS	Level of Service
M&O	Maintenance and Operations
NHS	National Highway System
TORA	Transfer of Responsibility Agreement
USDOT	United States Department of Transportation

Definition of Terms



Arterial Road: Functional classification describing roads that are generally designed to carry higher volumes of vehicles at higher speeds over longer distances. Often, separated paths or wide shoulders are provided for walking and biking.

Americans with Disabilities Act (ADA): A civil rights law that prohibits discrimination against people with disabilities.

All Ages and Abilities: Refers to a design effort to make a transportation system that everyone can access safely.

Average Annual Daily Traffic (AADT): A measurement of the number of vehicles traveling on a segment of highway each day, averaged over the year.

Collector Road: Functional classification describing roads that distribute trips between local and arterial roads.

Complete Streets: An approach to planning, designing, building, and maintaining streets that supports safe travel and access for all users.

Land Use Context: Principle of transportation planning that allows the surrounding land uses to be considered in choosing transportation network elements for each mode of travel, such as walking, biking, parking, freight delivery, etc.

Level of Service (LOS): Performance measure concept used to quantify the operational performance of a transportation facility (sidewalk, bikeway, roadway, etc.) and present the information to users and operating agencies. The actual performance measure used varies by the type of facility; however, all use a scale of A (best conditions for individual users) to F (worst conditions).

Local Road: Functional classification describing roads that carry lower volumes of traffic at slower speeds, are focused on providing access to homes and businesses, and carry travelers for only a short distance. Often, pedestrians and bicyclists share the road with vehicles, although sometimes a sidewalk or wide shoulder may be provided.

Low-Stress Bicycle Network: Connected system of bicycle facilities (such as shared roadways, bike lanes, sidewalks, paths, and trails) suitable for bicyclists of all ages and abilities.

Mobility: The ability to move freely throughout a transportation network.

Monthly Average Daily Traffic (MADT): A measurement of the number of vehicles traveling on a segment of highway each day, averaged over a month.

Path of Travel: A continuous and unobstructed pedestrian route.

Peak Hour Factor (PHF): Measure of traffic variability over an hour period calculated by dividing the hourly flowrate by the peak 15-minute flowrate. PHF values can vary from 0.25 (all traffic for the hour arrives in the same 15-minute period) to 1.00 (traffic is spread evenly throughout the hour).

Public Parking: Locations available for all members of the public to park a vehicle. Public parking may be free, or users may be required to pay a fee to park.

Speed Reduction: Lowering the speed limit on roadways as a traffic calming measure.

Traffic Calming: Treatments that discourage cut-through traffic and encourage vehicles to travel at speeds that are appropriate for the land use context.

Transit: Transportation mode using buses or shuttles that charges set fares and is available to the public.

Vehicle Capacity: The maximum number of vehicles per hour that a roadway can sustain based on roadway geometry, environmental conditions, traffic volumes, and traffic control.

Volume to Capacity Ratio (v/c): Compares the capacity of a roadway to how many vehicles per hour are actually using a roadway. Values of 0.85 or less are optimal.

References



- A Policy on Geometric Design of Streets and Highways*, AASHTO, 2011.
- E-bikes are gaining popularity in the US. here's why*. A. M. S. A. (2022, August 27). abc10.com. Retrieved March 31, 2023, from <https://www.abc10.com/article/news/local/e-bikes-are-gaining-popularity/103-b261a3af-091e-4fe8-912a-4dedd0f44788>
- Accessible Sidewalks and Street Crossings*. Federal Highway Administration. (n.d.). Retrieved April 4, 2023, from https://nacto.org/docs/usdg/accessible_sidewalks_and_street_crossings_boodlal.pdf
- 2022 Alaska Scorecard*, Alaska Mental Health Trust Authority. (April 2023). Retrieved July 11, 2023, from <https://health.alaska.gov/Commissioner/Documents/MentalHealth/scorecard/2022-AMHT-Scorecard.pdf>
- Census Bureau Profile for Homer, Alaska*. Bureau, U. S. C. (n.d.). Retrieved April 4, 2023, from https://data.census.gov/profile/Homer_city,_Alaska?g=160XX00US0233140
- CDC: 1 in 4 US adults live with a disability*. Centers for Disease Control and Prevention. (2018, August 16). Retrieved April 4, 2023, from <https://www.cdc.gov/media/releases/2018/p0816-disability.html>
- Changes in Mobility by State*. Bureau of Transportation Statistics. (n.d.). Retrieved April 12, 2023, from <https://www.bts.gov/browse-statistical-products-and-data/covid-related/changes-mobility-state-0>
- Chapter 25: Operations, Wheeled Vehicles*. Alaska DOT&PF, Division of Measurement Standards & Commercial Vehicle Compliance. (April 4, 2020). Retrieved April 4, 2023, from <https://dot.alaska.gov/mscve/webdocs/17AAC25.pdf>
- 2020 Profile of Older Americans*. Administration for Community Living. (May 2021). Retrieved April 4, 2023, from https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2020ProfileOlderAmericans.Final_.pdf
- Homer Airport Layout Plan*. Alaska DOT&PF. (n.d.). Retrieved April 11, 2023, from https://dot.alaska.gov/stwdav/documents/ALP/Homer_ALP.pdf
- Kraemer, J. D., & Benton, C. S. (2015, November 20). *Disparities in road crash mortality among pedestrians using wheelchairs in the USA: Results of a Capture-recapture analysis*. BMJ open. Retrieved April 4, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4654303/>
- National Highway Freight Network Map and Tables for Alaska*. FHWA Freight Management and Operations. (n.d.). Retrieved April 4, 2023, from https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/alaska.htm
- State by State Electric Bike Laws*. PeopleForBikes. (n.d.). Retrieved March 31, 2023, from <https://www.peopleforbikes.org/electric-bikes/state-laws>
- Tefft, B. C. (2018, October 11). *Impact speed and a pedestrian's risk of severe injury or death*. AAA Foundation for Traffic Safety. Retrieved April 12, 2023, from <https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/>
- (Proposed) Public Rights-of-Way Accessibility Guidelines*. U.S. Access Board. (n.d.). Retrieved April 4, 2023, from <https://www.access-board.gov/prowag/>
- Winter Road Maintenance Priority Map*. DOT&PF. (n.d.). Retrieved March 31, 2023, from <https://dot.alaska.gov/stwdmno/wintermap/>
- Xu, G. (2022). *Speed Management is Key to Road Safety*. Public Roads, Vol 85 No. 4. FHWA. Retrieved April 4, 2023, from <https://highways.dot.gov/public-roads/winter-2022/05>
- Improving the effectiveness of road safety campaigns: Current and new practices*. IATSS Research, Vol 34 No. 2. (March 2011). Retrieved April 3, 2023, from <https://www.sciencedirect.com/science/article/pii/S0386111211000045>

Appendix A: Summary of Public Involvement



City of Homer Transportation Plan Survey Results

In the fall of 2022, 289 people responded to the survey.



Concerns raised when using different modes of travel



- » Traffic
- » Left-turn congestion
- » Summer traffic
- » Pavement conditions
- » Parking



- » Road accessibility
- » Pavement conditions
- » Parking
- » Pedestrians



- » Sidewalks
- » Crosswalks
- » Drivers
- » Winter conditions
- » Safety
- » Trails

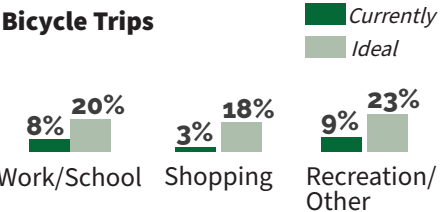
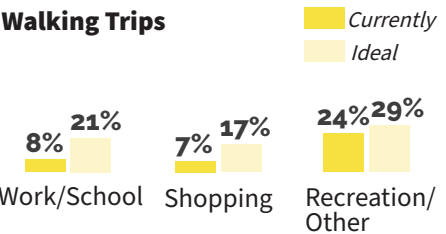
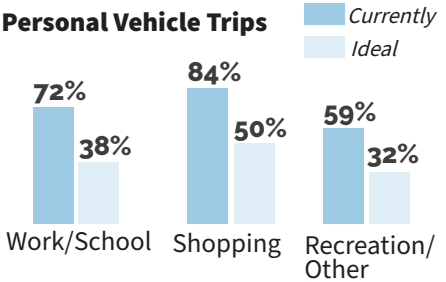


- » Drivers
- » Bike Lanes
- » Bike Paths
- » Safety
- » Trails



Travel Habits – Current & Ideal

What percentage of the time do you use your personal vehicle for the following trips? What about walking or biking? Under ideal conditions, would you use your personal vehicle more or less? What percentage of your trips would be by personal vehicle, walking or biking?

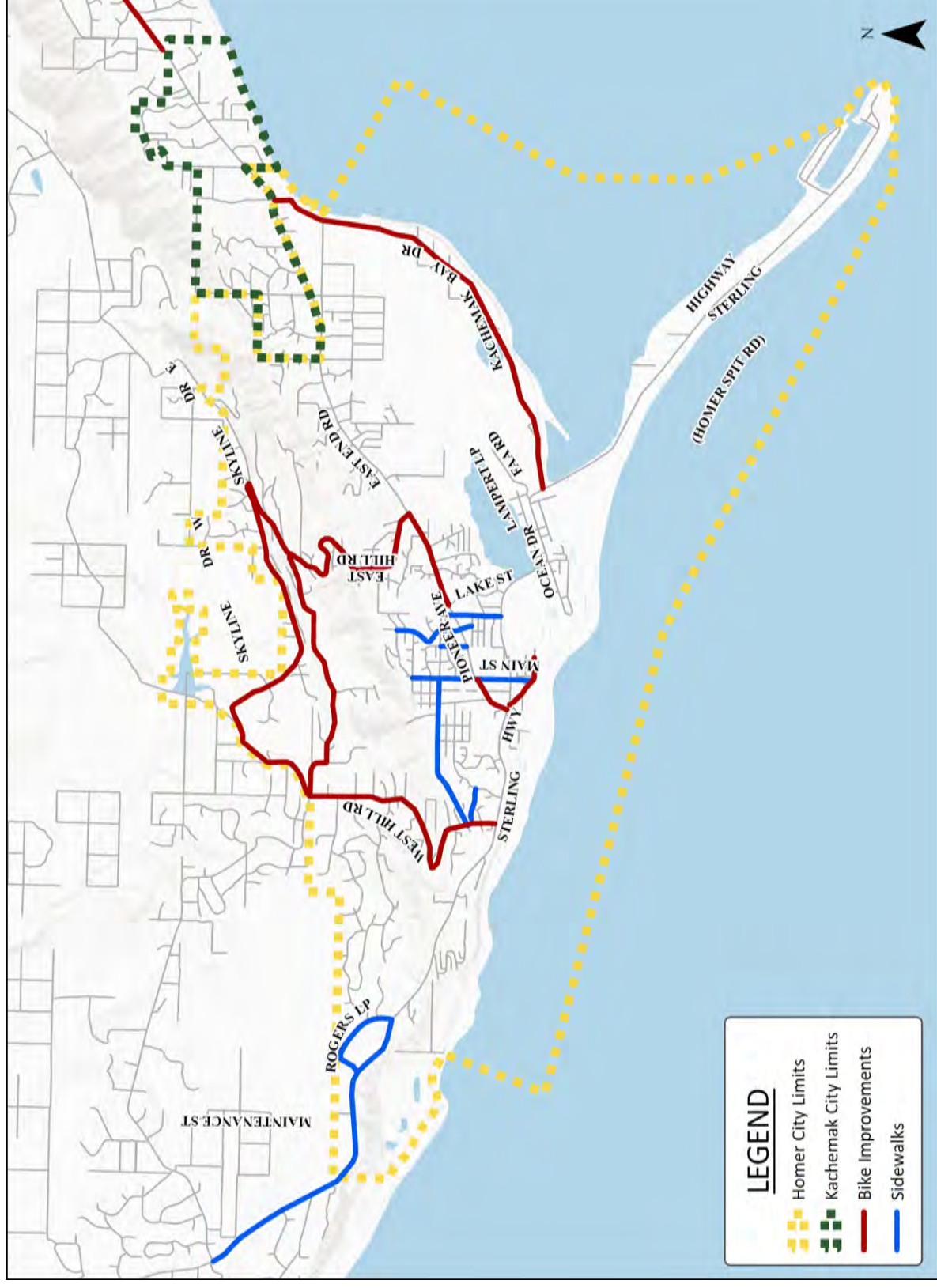


What would you like to see more of in Homer's transportation system?

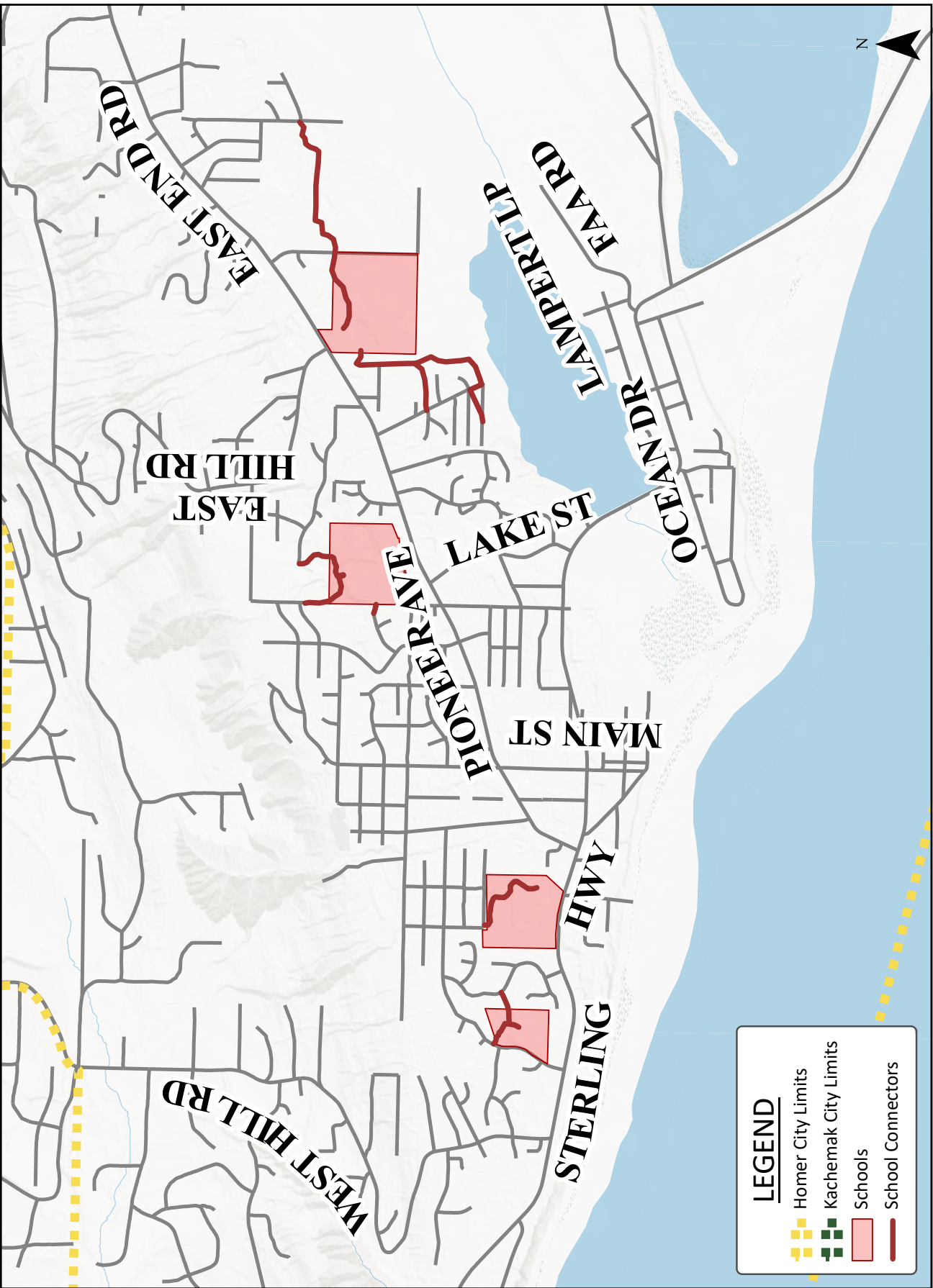


Appendix B: Desired Walking or Biking Improvements from Public Comment

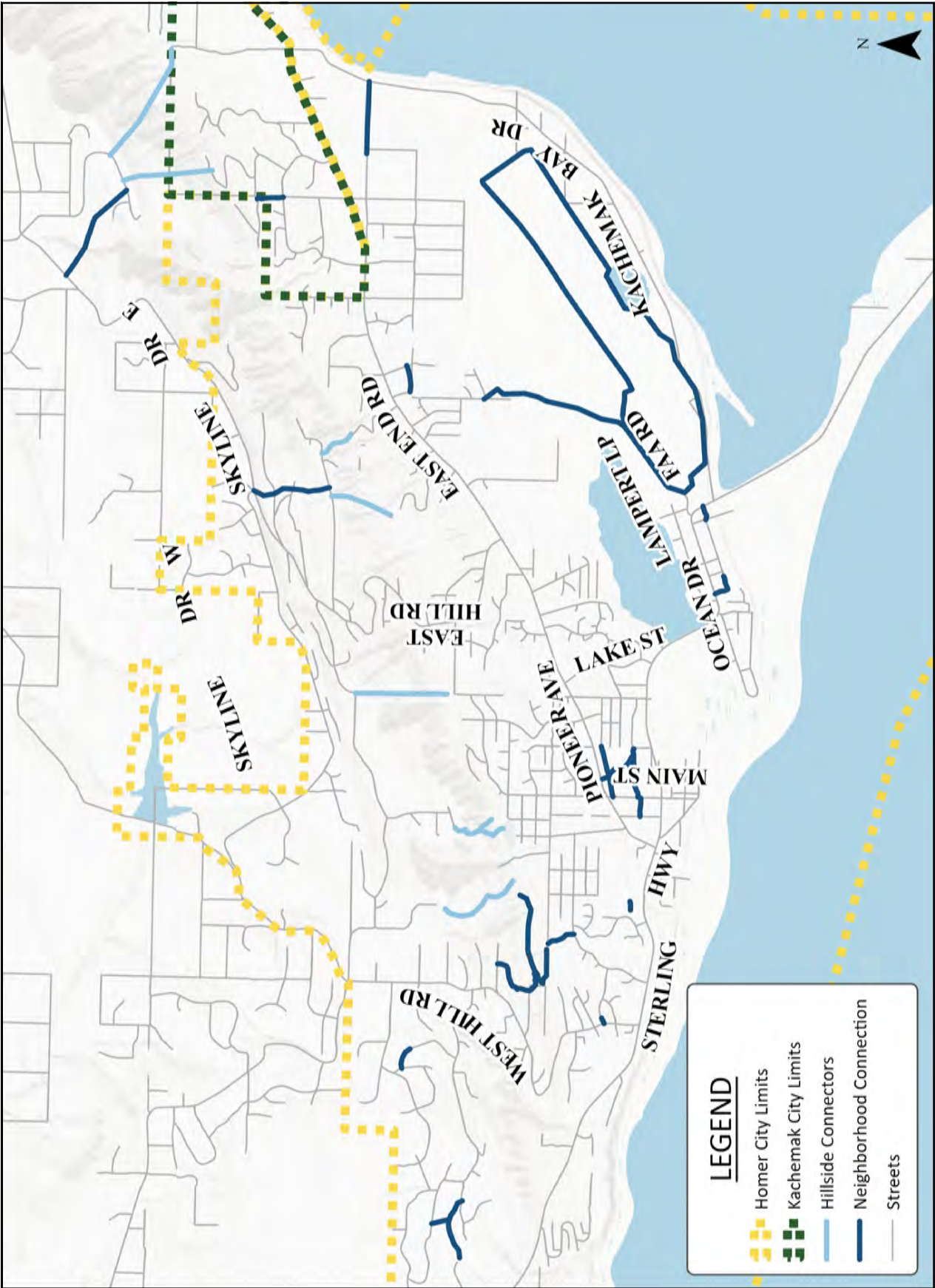
Respondents made comments in an online map. Requests for sidewalk improvements were focused in the central Homer area. Requests for bike facilities focused on longer distance connections.



Respondents made comments in an online map. Many requests focused on connecting schools to neighborhoods through path or trail improvements.



Respondents made comments in an online map. Many requests focused on connecting neighborhoods, including connecting upper hillside with lower hillside, through path or trail improvements.



Respondents made comments in an online map. Several comments focused on creating connections between local streets and the beach.

- * from Waddell Street, Hidden Way, and Crittenden Drive
- * extension of Main Street or Charles Way
- * from Ocean Drive Loop
- * from Kachemak Drive near Lampert Lake
- * from the north end of Kachemak Drive where it turns away from the beach to connect to East End Road