2022 City of Kodiak
LONG-RANGE TRANSPORTATION PLAN

DRAFT

November 2021

Prepared for:

City of KODIAK Alaska

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ACRONYM LIST

AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish and Game
ADOE	Alaska Department of Education and Early Development
ADOT&PF	Alaska Department of Transportation and Public Facilities
AMHS	Alaska Marine Highway System
ANTHC	Alaska Native Tribal Health Consortium
AS	Alaska Statute
ATV	all-terrain vehicle
BIA	Bureau of Indian Affairs
Bristol	Bristol Engineering Services Company, LLC
CFR	Code of Federal Regulation
City	City of Kodiak
DCCED	Alaska Department of Commerce, Community and Economic Development
FAST	Fixing America's Surface Transportation Act
FFY	federal fiscal year
HUD	U.S. Department of Housing and Urban Development
KATS	Kodiak Area Transit System
KEA	Kodiak Electric Association, Inc.
KIB	Kodiak Island Borough
LRTP	Long-Range Transportation Plan
mph	miles per hour
PL	Public Law
STIP	Statewide Transportation Improvement Program
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
VSW	Village Safe Water

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1.0 INTRODUCTION

1.1 PURPOSE

Bristol Engineering Services Company, LLC (Bristol) has developed this Long-Range Transportation Plan (LRTP) on behalf of the City of Kodiak (City). The purpose of the LRTP is to identify the transportation goals and needs of the community of Kodiak, Alaska, as well as to determine planning strategies to address future land use, economic development, traffic demand, public safety, and the health and social needs of the community for the next 20 years. The LRTP describes the existing and proposed transportation system and addresses not only transportation improvements anticipated over the next 20-year horizon, but also short-range and mid-range strategies. This LRTP also serves to organize and prioritize City transportation maintenance activities. The City's goal is to develop and maintain a transportation system that will ensure the safe movement of people and goods, while also promoting economic development and maintaining and/or preserving the quality of the local environment.

1.2 MISSION

> *"The City of Kodiak Public Works Streets Division is committed to maintaining and repairing the complex network of streets, sidewalks, traffic control devices, stairways, storm drainage facilities, and street appurtenances throughout the City. We are committed to constantly training our personnel to ensure that these systems are maintained in the best condition possible. The safety of the general public in the use of these systems is of paramount importance" (City, 2021).*

1.3 PARTNERS

One goal of this LRTP is to foster partnerships that will provide collaborative planning for future projects and leverage resources to improve the operations of local transportation systems. The following partners contributed to this plan:

1.3.1 Sun'aq Tribe of Kodiak

The Sun'aq Tribe met with the City of Kodiak during the kickoff meeting for this plan. They explained their transportation goals for the community and provided information about their upcoming transportation projects. The Tribe and City have existing agreements include City roads on the Tribe's National Tribal Transportation Facilities Inventory (NTTFI) through the Bureau of Indian Affairs. By listing transportation facilities in the NTTFI, the Tribe can commit Tribal Transportation Program funds (also known as Tribal Shares) to maintenance and construction activities of those facilities, as available. The Tribe and City expressed interested in including the City's Port and Harbor facilities on the NTTFI.

1.3.2 Kodiak Island Borough

The Kodiak Island Borough (KIB) is an important partner because they own many roads that connect to City roads, creating the need for collaborating on road maintenance and improvement projects. The KIB also maintains a comprehensive GIS mapping database of

Kodiak. They provided data that was used to develop new road maps for this plan including road centerlines, property lines, extended data for each roadway, and aerial imagery. The City plans to continue this partnership to enhance efficiency of data sharing and management, and ensure transportation projects continue to meet the needs of the community.

1.3.3 Alaska Department of Transportation

The Alaska Department of Transportation and Public Facilities (ADOT&PF) owns and maintains a handful of roads on Kodiak Island. Kodiak falls within the Southcoast region of ADOT&PF. In addition, ADOT&PF has many resources that can benefit the City's transportation department including funding opportunities, construction specifications, training, data, safety programs, historic project information, and more. For this plan, they provided traffic count data and crash data.

1.3.4 Federal Highway Administration

The Federal Highway Administration (FHWA) is a government agency and another important transportation partner. The FHWA provides transportation laws and regulations, funding opportunities, training resources, safety programs, case studies, design standards, and more.

1.4 Document Contents

Long-Range Transportation Plans are required for States, Metropolitan areas (population exceeding 1,000,000), and Federally Recognized Tribes if they participate in the National Tribal Transportation Program. A separate federal regulation exists for each of these entity types that describes the requirements for what needs to be included in the LRTP, for example, 23 CFR §450.216 is for States (*Development and content of the long-range statewide transportation plan*); 23 CFR §450.324 is for Metropolitan areas (*Development and content of the metropolitan transportation plan*); and 25 CFR §170.411 is for Tribes (*What should a long-range transportation plan include?*). There is no required format for a city or municipality developing a local long-range transportation plan, but the contents should generally include the following:

(a) An evaluation of a full range of transportation modes and connections between modes such as highway, rail, air, and water, to meet transportation needs;
(b) Trip generation studies, including determination of traffic generators due to land use;
(c) Social and economic development planning to identify transportation improvements or needs to accommodate existing and proposed land use in a safe and economical fashion;
(d) Measures that address health and safety concerns relating to transportation improvements;
(e) A review of the existing and proposed transportation system to identify the relationships between transportation and the environment;
(f) A prioritized list of short- and long-term transportation needs; and
(g) An analysis of funding alternatives to implement plan recommendations.

This LRTP is formatted with five main sections, as follows:

1.0 INTRODUCTION
- Describes the purpose, mission, and format of the plan.

2.0 REGULATIONS AND PLANNING
- Describes existing regulations, planning documents, and upcoming development and projects that are important to consider for transportation improvements in Kodiak.

3.0 EXISTING TRANSPORTATION SYSTEMS
- Provides an overview of the existing Kodiak transportation system, including roads, pedestrian facilities and trails, public transportation, water transportation, and air transportation.

4.0 TRANSPORATION PRIORITIES
- Identifies the transportation needs and priorities for short-range (1-5 years), medium-range (6-14 years), and long-range (15-20 years) planning horizons.

5.0 NEXT STEPS
- Provides resources and processes to help implement the priorities identified in Section 4.0.

1.5 SITE VISIT

Bristol performed a site visit in August 2021 which began with a Project Kickoff Meeting. The kickoff meeting included representatives from the City and Sun'aq Tribe of Kodiak. Bristol engineers performed a cursory site inspection of each roadway within the City boundary, noting existing conditions and taking photographs. The Project Kickoff Meeting minutes and Trip Report are provided in Appendix A.

1.6 PUBLIC INVOLVEMENT

As part of the comprehensive planning process for this LRTP, the City has begun to identify priority transportation projects and goals of the community through public involvement. Preparation of this LRTP will include a public meeting to provide residents the opportunity to comment on the draft plan, give feedback regarding transportation needs, and ask questions.

Bristol will develop a survey questionnaire to collect additional public feedback. The survey will help determine the existing and future transportation needs, trip generators, modes of transportation, health and safety concerns, and roadway conditions; and to prioritize improvement projects. The survey will also be used as a guide for future LRTP updates and planning activities.

Public involvement documentation will be attached to Appendix B in the Final-Draft version of this plan.

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2.0 REGULATIONS AND PLANNING

2.1 TRANSPORTATION REGULATIONS

Transportation systems managed by local, state, or federal agencies are subject to federal law. Individual states, boroughs, and cities can further refine laws through local ordinances and codes. Transportation regulations include safety and construction standards, rules for drivers and vehicles, environmental protections such as limits on emissions and stormwater discharges, land use and zoning procedures, requirements for equitable access to public facilities and services, and more.

2.1.1 City of Kodiak

The City of Kodiak is an incorporated first-class city, able to assess taxes and assume various powers under State of Alaska (State) laws. Kodiak is located in the Kodiak Island Recording District for purposes of platting and zoning and is within the Kodiak Island Borough. The City of Kodiak has published and adopted the Kodiak City Code. Transportation-related sections include Title 10: Vehicles and Traffic, Title 12: Streets and Sidewalks, Title 13: Public Utilities, Title 14: Buildings and Construction, Title 17: Zoning, and Title 18: Public Property (City, 2021).

Kodiak is subject to regulation of the Kodiak National Wildlife Management Plan.

2.1.2 Kodiak Island Borough

The Kodiak Island Borough (KIB) Code is a living document that governs the laws within the Kodiak Island Borough. The most up-to-date version of the code is available on their website (KIB, 2021).

2.1.3 State of Alaska

Alaska Statutes (AS) and the Alaska Administrative Code (AAC) govern state regulations. A breakdown of regulations relating to driving rules of the road are listed on the Alaska Division of Motor Vehicles website. Other statutes of note include AS 19.10.140 (Long-Range Program for Highway Construction and Maintenance) which outlines the state's regulation plan; AS 19.05.030 (Highways and Ferries, Administration: Duties of Department), and AS 40.15.30 (Dedication of Streets, Alleys, and Thoroughfares).

2.1.4 United States

The current transportation bill is the Fixing America's Surface Transportation Act (FAST Act), Public Law (PL 114-94), which authorized $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains a focus on safety, keeps intact the established structure of the various highway-related programs managed by the USDOT-FHWA. The USDOT has a list of federal regulations, public laws, and US codes on their website. Road improvements are generally

authorized under Public Law (PL) 105-178 (an Act to authorize funds for Federal-aid highways, highway safety programs, and transit programs, and for other purposes). As applicable, road improvements are subject to the Title 25, Code of Federal Regulations (CFR), Part 169 (Rights-of-Way Over Indian Land), and 29 CFR 1910 – Occupational Safety and Health Standards.

President Biden signed into law a new infrastructure bill in November 2021. Details on this bill will be provided in the Final-Draft LRTP.

2.2 COMMUNITY DEVELOPMENT

This section provides an overview of transportation projects or projects that will impact transportation in Kodiak from the following entities: ADOT&PF, State of Alaska Department of Commerce, Community and Economic Development (DCCED), and U.S. Department of Housing and Urban Development (HUD). Additional information is provided in Appendix C.

2.2.1 City of Kodiak

As of November 2021, the City of Kodiak has the following projects listed on their website, soliciting bids and proposal requests:

- Development of a Kodiak Waterfront Master Plan.
- Design the Baranof Ice Rink Addition. Concept photos of the proposed improvements are available on their website.
- New Fire Station Design

The following City of Kodiak planning documents are available on the DCCED Community Plans Library (DCCED, 2021):

- 1980 General Plan (1980)
- Monashka Bay Comprehensive Plan (1985)
- Kodiak Roadway Master Plan (1986)
- Pasagshak / Narrow Cape Area Plan (1999)

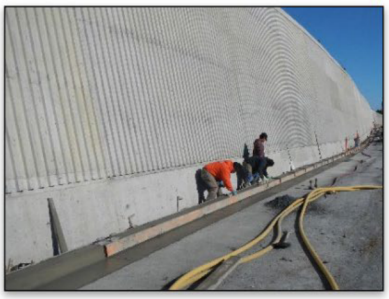
The City also completed a Pedestrian Pathways Plan in April 2017, developed by DOWL.

Most existing properties within the City boundary are developed. Housing expansion is primarily occurring to the north and east, outside of the City boundary. The City does not desire further development on Near Island.

2.2.2 Kodiak Island Borough

The Kodiak Island Borough Engineering and Facilities Department Projects Office publishes a Project Report. The most recent report from September 30, 2021 is provided in Appendix C (KIB, 2021).

Completed Wall Sections



Placing Curb and Gutter

Valley Gutter

Source: KIB, 2021

The following Kodiak Island Borough planning documents are available on the DCCED Community Plans Library (DCCED, 2021):

- Kodiak Island Borough Comprehensive Plan 1968-1999 Part 1 General Plan (1968)
- Comprehensive Parks and Recreation Plan (1981)
- Near Island Comprehensive Development Plan (1987)
- Urban Islands Comprehensive Plan (1993)
- Revised Lakeside/Safeway Subarea Land Use Plan (1997)
- Kodiak Island Borough Comprehensive Plan Update (2008)
- Kodiak Island Strategic Plan for the Years 2008-2012 (2008)

2.2.3 ADOT&PF Projects

The ADOT&PF 2020-2023 Statewide Transportation Improvement Program (STIP) identifies program funds for improvements for the following projects in Kodiak (ADOT&PF, 2021a):

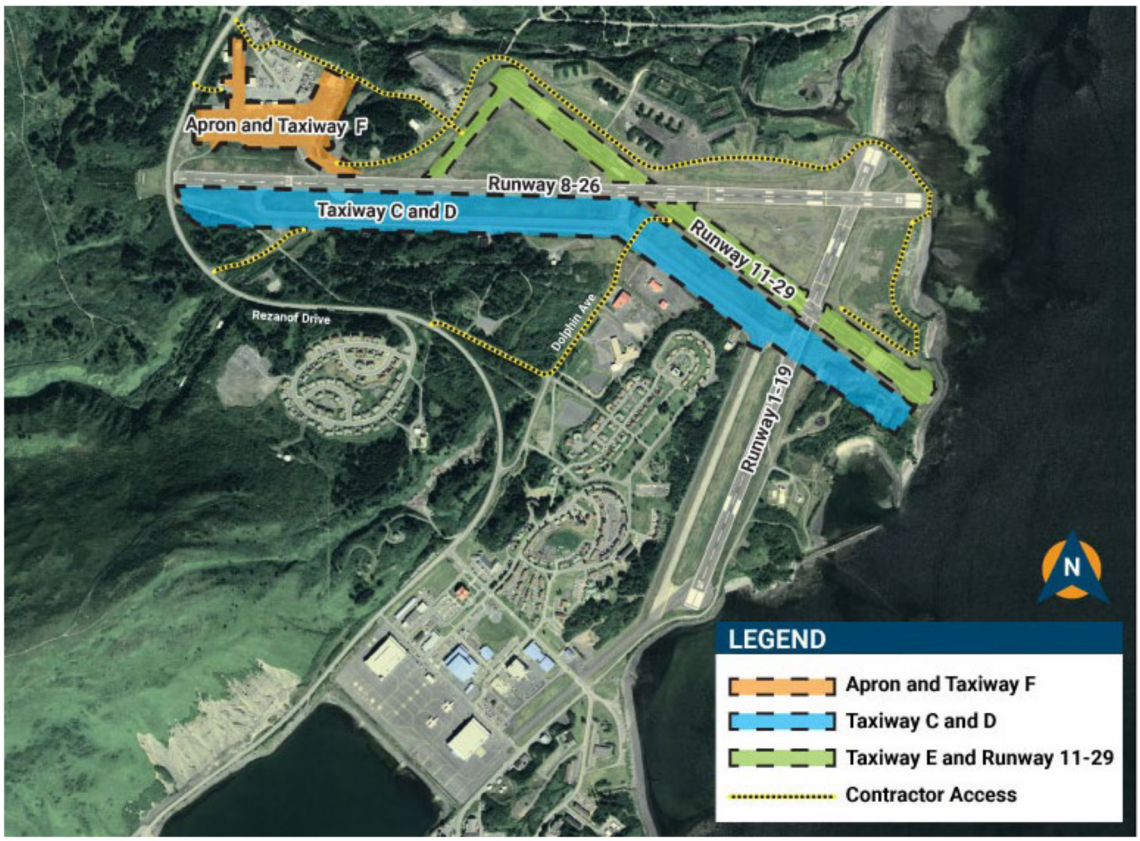
Need ID No. / Project Name	Description	Phase (FFY)
2436 / Otmeloi Way Reconstruction	Reconstruct approximately one mile of Otmeloi Way. Road improvements will include grading, drainage, paving, and construction of pedestrian facilities. Realignment and lighting as needed. Upon comple-tion, ownership and maintenance responsibility for Otmeloi Way and associated facilities will be transferred to the Kodiak Island Borough.	2022: Design and Right-of-Way 2023: Construction
29875 / Harbor Channel Bridge Improvement	Rehabilitate the Harbor Channel Bridge on Near Island Bridge Road. Rehabiliate per items recommended on 2014 Bridge Assessment including deck rehabilitation and repainting the steel superstructure.	2020: Utilities and Construction 2021-2022: Construction
32639 / Chiniak Hwy Rehabilitate Stage 1	This is the initial construction phase of the parent project, Need ID 29877. Rehabilitate and address lighting, guardrails, drainage, culverts and other highway appurtenances as needed.	2022-After 2023: Construction

Need ID No. / Project Name	Description	Phase (FFY)
29877 / Chiniak Hwy Rehabilitate: Mile Point 5 to 21	Rehabilitate approximately 16 miles of the Chiniak Highway from Milepost 15 to the end of pavement to improve and preserve the roadway subgrade and surface. Address lighting, guardrails, drainage, culverts and other highway appurtenances as needed. This project is the Parent NID for design of the full corridor. The first segment will be constructed under Need ID 32639 and the final construction segment will use this NID.	2021: Design and Right-of-Way 2022: Design After 2023: Construction
29876 / Rezanof Drive Resurface: Airport to Chiniak Hwy	Resurface Rezanof Drive from the Airport to Chiniak Highway and repair a section of Rezanof Drive from Carolyn St. to Marine Way. Address lighting, guardrails, drainage, culverts and other highway appurtenances as needed.	2020-2021: Construction

Source: ADOT&PF, 2021a.

The ADOT&PF also has a Statewide project database that shows 25 active (design and construction) projects in Kodiak and one proposed project, which includes airport improvements as shown below (ADOT&PF, 2021c). This project list, as well as project description pages extracted from the STIP are provided in Appendix C.

Exhibit 1: Kodiak Airport Apron and Taxiways C, D, and F Rehabilitation Project



Source: ADOT&PF, 2021c.

2.2.4 BIA Projects

Kodiak has not had a transportation project developed by the BIA in the past. Future BIA projects will likely be coordinated through the Sun'aq Tribe as part of their Tribal Transportation Program.

2.2.5 HUD Projects

There are no known active or future HUD housing projects in Kodiak.

2.2.6 Other State Projects

The Alaska Department of Education and Early Development (ADOE) has five projects listed for the Kodiak Island Borough School District on their FY2022 Capital Improvement Projects: School Construction and Major Maintenance by District list. The construction and implementation of these projects will be dependent on availability of funding based on the project's rank (ADOE, 2021).

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3.0 EXISTING TRANSPORTATION SYSTEMS

3.1 ROAD SYSTEM

Kodiak Island has been a major fishing hub since the 1800s and became a strategic military site in the mid-1900s. Canneries were built to support the record runs of sockeye salmon, and local infrastructure began to develop as a result. With the advent of commercial king crab, shrimp, and halibut fisheries, Kodiak became renowned as one of the largest fishing ports in the United States.

Local roads within the City of Kodiak include a system of paved and gravel-surfaced routes. There is only one bridge within Kodiak, the Fred Zharoff Memorial Bridge (also known as the Near Island Bridge or Alimaq Bridge) which spans the Kodiak Harbor Channel and connects Near Island to the City center. Several roads lead out of the city proper to important subsistence areas, the State airport, military sites, and other outlying communities. Maps depicting the streets within the City boundary are attached.

The State-owned airport south of town is accessed via Rezanof Road, and Rezanof Road West continues south and east around the island to a U.S. Air Force reserve at Cape Chiniak. Figure 5 shows a few of the roads traversing the mountains to the western side of the island that are well used but are not maintained during winter months. Private motorized vehicles include pickup trucks, automobiles, motorcycles, snowmobiles, all-terrain vehicles (ATVs), and boats. Commercial vehicles are used daily to support the fishing industry and the local economy.

3.1.1 Inventory

A road inventory was developed as part of this LRTP. The inventory is provided in Appendix D, which includes a list of all City-owned and maintained roadways with associated maps and instructions for using and updating the inventory. Data for each road was collected including ownership, geometric elements, condition of surface and drainage, and other existing features such as utilities or sidewalks located within the corridor.

3.1.2 Right-of-Way and Ownership

ADOT&PF owns several of the major arterial roads, which include Rezanof Drive, a portion of Mission Road, Anton Larsen Bay, Monashka Bay and Cape Chiniak Road. A few smaller stub roads are also owned by the State including Benny Benson Drive. Mission Road becomes state owned outside of the City boundary. The remaining roads located within the city boundary are owned by the City of Kodiak with a handful of privately owned roads, while roads immediately outside the city boundary are owned by the Kodiak Island Borough. Federal lands managed by the U.S. Fish and Wildlife Service (USFWS) and the Department of Natural Resources have jurisdiction of the roads within the managed areas. The U.S. Coast Guard (USCG) has a base south of the City of Kodiak, and all rights are maintained by the USCG for the base area. A portion of Federal lands have been recently transferred to Koniag, Inc., other local Native corporations, and private native allotments as part of the Alaska

Native Claims Settlement Act 14(c) agreement. Roads are color-coded by ownership on the attached Figures.

3.1.3 Geometric Elements

Road widths, lanes, and geometric elements vary depending on the road type and road owner. State-owned roads are generally paved two-lane, 24-foot-wide roads with 4-foot shoulders, and some roads have turn lanes. Rezanof Drive is wider outside of the City limits, but utilities, properties, and other constraints limit the width of the road in town.

Most city roads are paved two-lane with a 2-inch asphalt overlay and are 20 to 24 feet wide. Many have 4-foot sidewalks, curbs, and gutters. Mission Road has smaller shoulders for most of the route. Several of the newer housing subdivisions are currently two-lane, 24-foot-wide, unpaved roads.

As the roads leading out of town get further away, they become narrower, unpaved, and less maintained due to high maintenance costs and lower traffic volumes.

3.1.4 Existing Structural Characteristics

3.1.4.1 Surfacing and Subbase Material

Most roads in Kodiak are well established and appear to be constructed to minimum design standards. Paved surfaces have a gravel subbase and a 2-inch-thick asphalt overlay. Some subdivision roads are not paved and consist of 2-foot-thick gravel subbase with a crushed aggregate surface. Gravel sources on the island are plentiful. Borrow material and crushed aggregate are produced at several commercially owned pits. Asphalt plants are also available locally.

Due to the frequency of potholes and cracking on paved roads, the City has identified the need to improve road construction so roads will last longer with reduced maintenance requirements. The City would like to evaluate environmental factors (such as freeze/thaw and drainage conditions) that are impacting roads and consider alternative technologies and construction methods (such as seal coating) to mitigate the issues.

3.1.4.2 Drainage

Curb and gutters and underground storm drain facilities are generally used in the downtown area. Cross culverts and ditches are the main methods used to divert surface water runoff in the outlying sections of the community. Some areas have very little drainage facilities along the roads, and severe breakdown of the traveled-way surface (potholes and cracking) has occurred.

3.1.4.3 Bridges

The Fred Zharoff Memorial Bridge is the only bridge within the City boundary. It is approximately 1,253-foot bridge and built in 1986, crosses the Kodiak Harbor Channel and connects Near Island and Kodiak Island. The State Bridge Design section inventory of bridges

lists the Near Island Bridge as CDS Route Number 068600 and Bridge Number 1189 (ADOT&PF, 2021b). The bridge was resurfaced with new lane striping in 2021.

3.1.5 Maintenance

3.1.5.1 Responsible Agencies

The City of Kodiak, Kodiak Island Borough, or the State and Federal agencies are responsible for road maintenance, depending on road ownership.

3.1.5.2 Maintenance Budgets and Funding Sources

The City of Kodiak generates revenue from personal and real property taxes, a sales tax of 7%, a transient room tax, and a tariff on goods transferred over the municipal docks, which also includes a wharfage fee (City, 2021). Road maintenance budgets are determined by the City and Borough. The amount of funding available for road maintenance and improvements has diminished in recent years. The City would like to pursue other funding sources such as State and Federal grants, and leveraging resources with other local governments.

3.1.5.3 Community Maintenance Equipment Inventory

ADOT&PF has two road maintenance depots, and the City of Kodiak has one maintenance depot. The Borough contracts Brechan Construction, LLC for road maintenance activities.

The City has infrared equipment for patching pavement seams. It is a slow process that does not work well during rainy weather.

Streetlights are maintained by the Kodiak Electric Association, Inc. (KEA) and the City pays for the electricity. The City also operates and maintains the water, sewer, and storm drain facilities that run beneath the roads.

3.1.6 User Characteristics

3.1.6.1 Modes

Typical trip modes vary depending on the purpose and time of year. Truck or car use is the predominant method of transportation in the winter, while ATVs and snowmachines are also used. In the summer, transporting boats to and from the boat harbor and fishing-related activities are important uses of public roads. Automobiles, motorcycles, ATVs, bicycles, and boats are predominantly used. Pedestrian foot traffic is also common, especially near the schools, parks, and downtown.

3.1.6.2 Trip Generators

Local travel in and around the City of Kodiak consists mainly of work, school, stores, other commercial businesses, senior or teen centers, government offices, church, post office, movie theater, bowling lanes, health care, military, recreation, and fishing-related activities. Four distinct trip types are identified: (1) work/school, (2) shopping, (3) health/social/recreational,

and (4) fishing/subsistence. Each trip type and seasonal activity creates a unique mode of transportation and destination choices.

Saint Herman Harbor and Saint Paul Harbor experience a considerable amount of use during the summer months but are well-used year-round because of the mild winters in Kodiak. The shipping yards, two float plane facilities, and ferry terminal, generate much of the other marine-related activities. Kodiak is also a cruise ship destination bringing an influx of people and tourism-related activities.

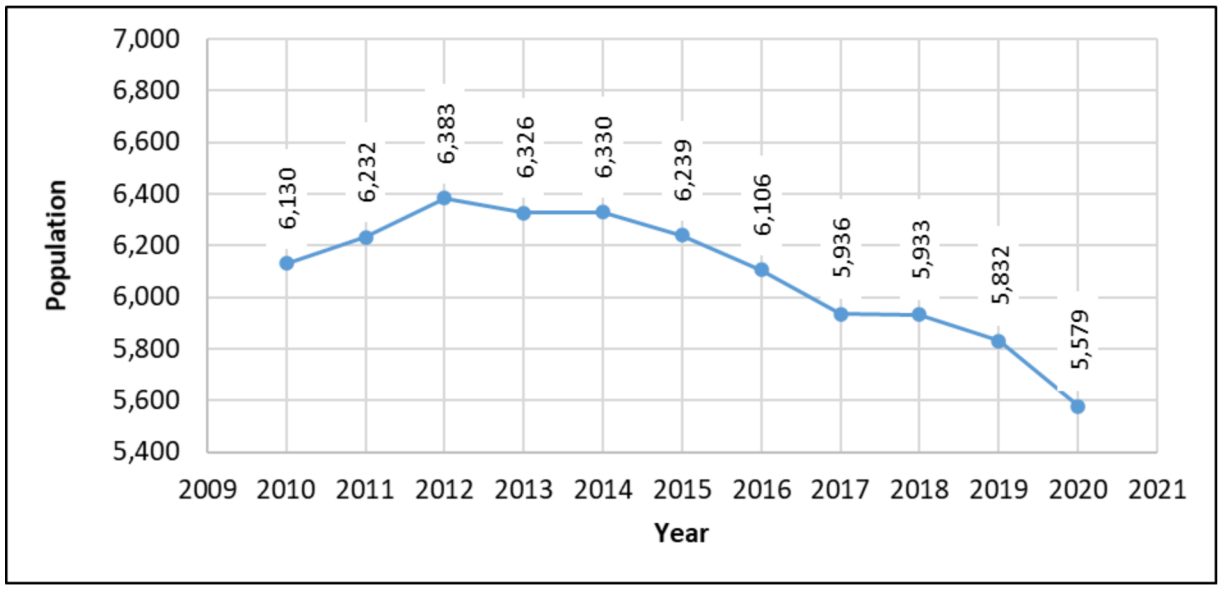
Travel outside of the city includes access to cultural and subsistence sites, the airport, the Kodiak Launch Complex and other military sites, and connections to other communities.

3.1.6.3 Traffic Counts

ADOT&PF collected traffic data at 54 stations between 2015 and 2020. Typically, only state-owned roads are monitored. In 2020, the busiest street with the highest annual average daily traffic (AADT) at 9,190 vehicles per day was Rezanof Drive between Center Street and Marine Way. The lowest AADT was 80 vehicles per day on Sawmill circle south of Monashka Bay Road, but this location is outside of City limits. The lowest AADT within the City boundary was 1,270 vehicles per day on Benny Benson Drive between Rezanof Drive and Mission Road (ADOT&PF, 2021d).

Raw data and graphs of the data trends by roadway are presented in Appendix E. In general, traffic volumes seem to have decreased from 2015 to 2020. This could correlate with the decline in population over recent years, as shown in the graph below:

Exhibit 2: Kodiak Historic Population Trends



Source: ADOL&WD, 2021.

3.1.6.4 Speeds

Setting correct speed limits on roadways is critical to protect public safety and property. Speeds are selected based on several factors including the road's functional classification, lane width, vehicle access requirements, curve radius, superelevation, and stopping sight distance. The speed limit of a road should be selected by a qualified engineer.

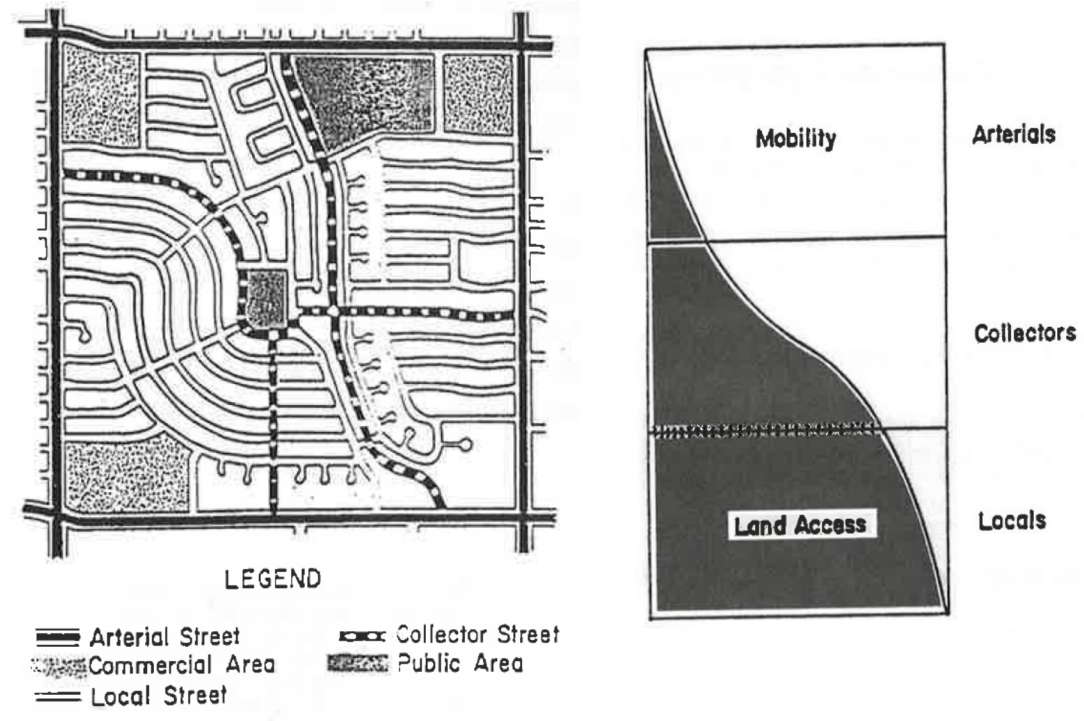
The following is a guide for setting speed limits based on a road's functional classification.

Table 1: Recommended Ranges for Design Speed

Type of Roadway	Terrain	Speed (mph)	
		Rural	Urban
Freeway	Level	70	50 min
	Rolling	70	50 min
	Mountainous	50–60	50 min
Arterial *Link cities, towns, and other major traffic generators over long distances.*	Level	60–75	30–60
	Rolling	50–60	30–60
	Mountainous	40–50	30–60
Collector *Link arterial roads to local roads.*	Level	40–60	30+
	Rolling	30–50	30+
	Mountainous	20–40	30+
Local *Provides access to land adjacent to collector network and serves travel over relatively short distances.*	Level	30–50	20–30
	Rolling	20–40	20–30
	Mountainous	20–30	20–30

Source: AASHTO, 2004.

Exhibit 3: Roadway Functional Class Schematic



Source: AASHTO, 2004, Exhibits 1-4 and 1-5.

Functional classification of Kodiak roads is provided in the roadway inventory and identified on Figure 7.

Urban areas are places having a population of 5,000 or more, where rural areas are those outside the official boundaries of urban areas. Kodiak is considered a small urban area (population between 5,000 and 50,000), but rural areas exist outside the city boundary.

3.1.7 Transportation Health and Safety

The health and safety of transportation users is of utmost importance to the City. Several safety priorities have been identified by the City, and additional safety concerns, if any, will be identified through public involvement and discussed in the Final-Draft version of this LRTP. The highest priorities at this time include safety improvements in the school zones, on steep roadways, and at the intersection of Rezanof Drive, Lower Mill Bay Road, and Center Avenue (locally known as “The Y”).

The Kodiak High School, Kodiak Middle School, and East Elementary School are all located between Egan Way / Powell Avenue and Mill Bay Road / East Rezanof Drive. There are limited crosswalks and school zone signs within this area to help protect and direct pedestrians. Students living south of Rezanof Drive that walk to school must cross the busy highway to get to school. The roads surrounding the school property become congested before and after school. Speeding in this area is also a concern.

The northwestern edge of Kodiak is bound by a hillside where perpendicular subdivision roads become very steep and narrow. These roadways are challenging to drive in the winter

when the roads are icy. This is a safety concern for average road users due to reduced traction and driving control, but there is an added concern when emergency vehicles such as fire trucks and ambulances cannot access the roads.

Finally, there are several safety concerns regarding The Y. The intersection is confusing, especially to tourists who are unfamiliar with it. Everyone entering Kodiak from the airport has to pass through this intersection. The intersection is controlled with yield signs on Lower Mill Bay and stop signs on Center Avenue. Travelers heading northeast and turning left on Rezanof must yield to traffic coming from three directions. Then there are two intersections immediately on either side of The Y, including one that has the only streetlight in all of Kodiak. Drivers must also pay attention to the heavy pedestrian traffic in this area, as it is located downtown with many bars, restaurants, shops, and the St. Paul Harbor located nearby. Overall, the City would like to consider alternate geometric designs or traffic control devices to improve the traffic flow and safety at The Y.

Exhibit 4: "The Y" Intersection Layout

Image source: Google Earth, 2021.

3.1.8 Crash Data

Crash data in Kodiak was collected from ADOT&PF from the most recent 5-year period. Due to the time it takes to verify data, only crash data through 2017 was available. Between 2013-2017, there were 239 crashes located within the Kodiak city boundary. Figure 6 shows the locations of each crash, color-coded by year, based on latitude / longitude data from the crash. There were 22 crashes from this dataset that appeared to have faulty coordinates, so they were not included on the map (ADOT&PF, 2021e).

The map shows several crash clusters (locations with >5 crashes) have occurred at the following intersections of note:

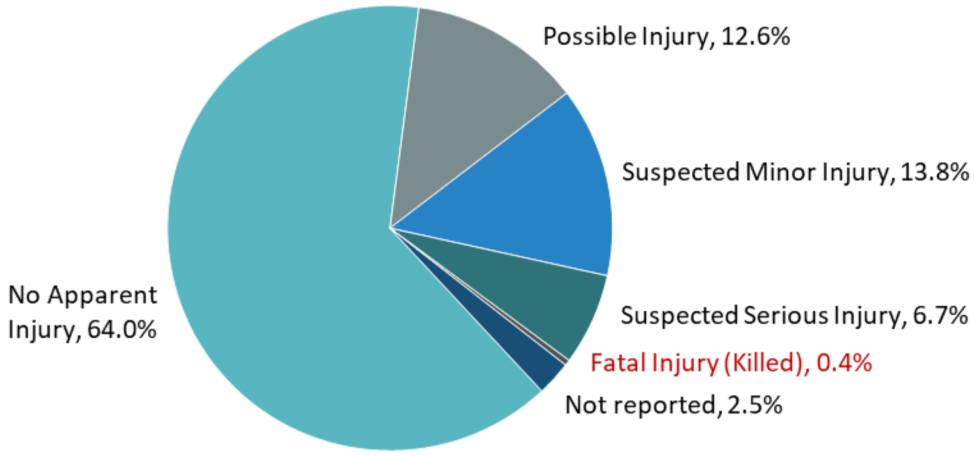
Table 2: Intersections with Crash Clusters

Location Description	Approximate No. of Crashes
"The Y" Intersection along Rezanof Dr / Lower Mill Bay Rd	15
Mill Bay Rd between Birch St / Powell Ave	7
Rezanof Dr between Armstrong Ave / Ole Johnson Ave	10
Mill Bay Rd between Benny Benson Dr / Von Scheele Way	12
Mill Bay Rd at intersection with Murphy Way	8

Out of all the crashes, more crashes occurred in December (32) than any other month. There was one crash that resulted in a fatality, 16 crashes with a suspected serious injury, and 63 crashes with a possible injury or minor injury (ADOT&PF, 2021e).

The crash with the fatality involved a single vehicle that ran off the road and overturned on Hillside Drive. The crash occurred on Thursday, November 13, 2014, between 12:00 AM and 1:00 AM. The lighting and weather conditions were not reported. The driver was a 44-year-old male who was reportedly not wearing a seatbelt and was suspected of alcohol use (ADOT&PF, 2021e).

Exhibit 5: Percent of Crashes in Kodiak by Severity (Injury Type)



Data source: ADOT&PF, 2021e.

3.2 Pedestrian Facilities & Trails

Pedestrian facilities such as sidewalks, crosswalks, and trails are available in Kodiak. About 50% of roadways in Kodiak have concrete sidewalks along one or both sides. During the site

visit, many of the sidewalks were showing signs of deterioration with chips and cracks across the surface. Other sidewalks were noted to be narrow or overgrown with vegetation and some painted crosswalks are faded, but in general the sidewalks were in good condition. A few streets have paved walkways and bike lanes. There are limited crosswalks and signs within the school zone.

Some popular walking routes are highlighted in the exhibit below, which are typically to/from school, downtown, and recreational areas like Baranof Park and St. Paul Harbor.

There are also many hiking trails in and around Kodiak, which are shown on the attached figures with black dashed lines. Within town, there are some trails surrounding the Kodiak College Campus and Senior Center. In the outskirts of town are trails located in the hills to the northwest of Kodiak off Pillar Mountain Road and throughout Near Island. Many more hiking trails exist farther out of town throughout the island. ATV trails for four-wheelers and snow machines also exist.

Exhibit 6: Kodiak Popular Walking Routes

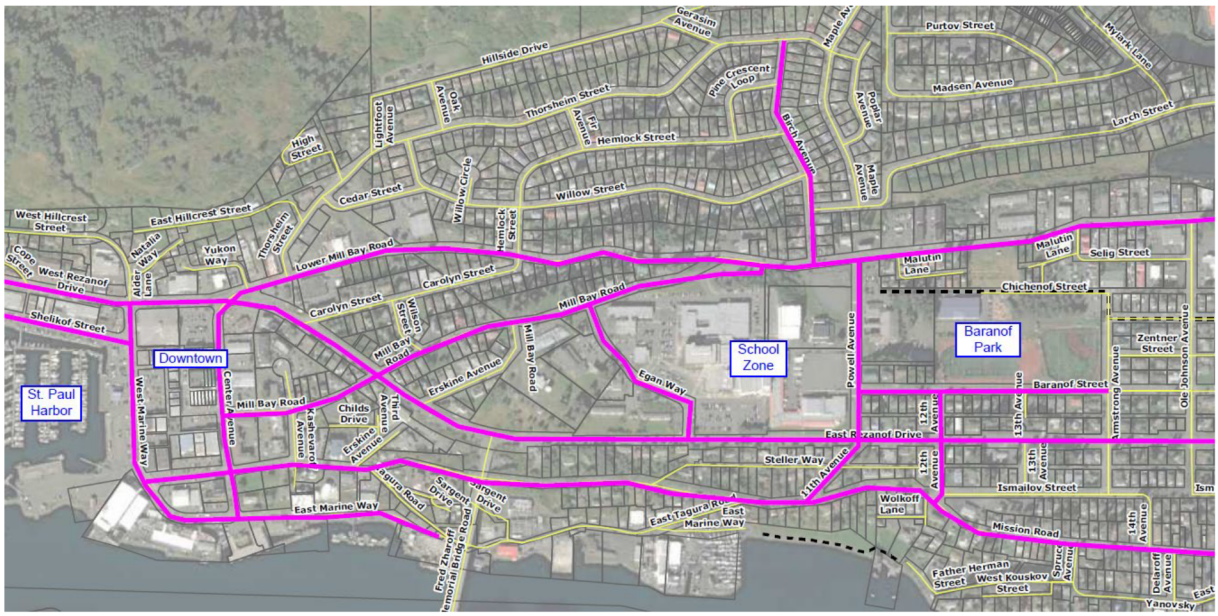


Image source: KIB, 2021.

Safety concerns associated with trails include stranded hikers with limited cell service to call for help and bear encounters. There are approximately 3,500 Kodiak brown bears (the largest bears in the world) on the island, a density of about 0.7 bears per square mile. The bears are active between early April through late October. Only one person has been killed by a bear on Kodiak in the past 75 years. A bear injures a person about once every other year (ADF&G, 2021).

3.3 PUBLIC TRANSPORTATION

Public transportation in Kodiak is limited. There are no dedicated transit facilities or bus stops in Kodiak, and rights-of-way may be too narrow in most locations to install them.

There are four taxicab companies available for residents and tourists (JL Taxi, Kodiak Cab, Kodiak Taxi, and Kodiak City Cab). The Senior Center provides transportation for senior citizens to and from their homes and to the center. The center also provides home-delivered and curbside meal services to seniors. Bus transportation is available for all students. Rental cars are also available in Kodiak (Senior Citizens of Kodiak, Inc., 2021).

The Senior Citizens of Kodiak Inc. administers the Kodiak Area Transit System (KATS), which is operated by First Student Inc. Due to limited capacity, scheduled stops are currently not available, but the service may be provided in the future. People can schedule a ride by calling or booking online. KATS Dial-A-Ride service is available Monday through Friday from 6:30 AM to 6:30 PM, and Saturday through Sunday from 10:00 AM until 3:00 PM. Fares are $2.00 for each ride (KATS, 2021).

Source: KATS, 2021.

3.4 WATER TRANSPORTATION

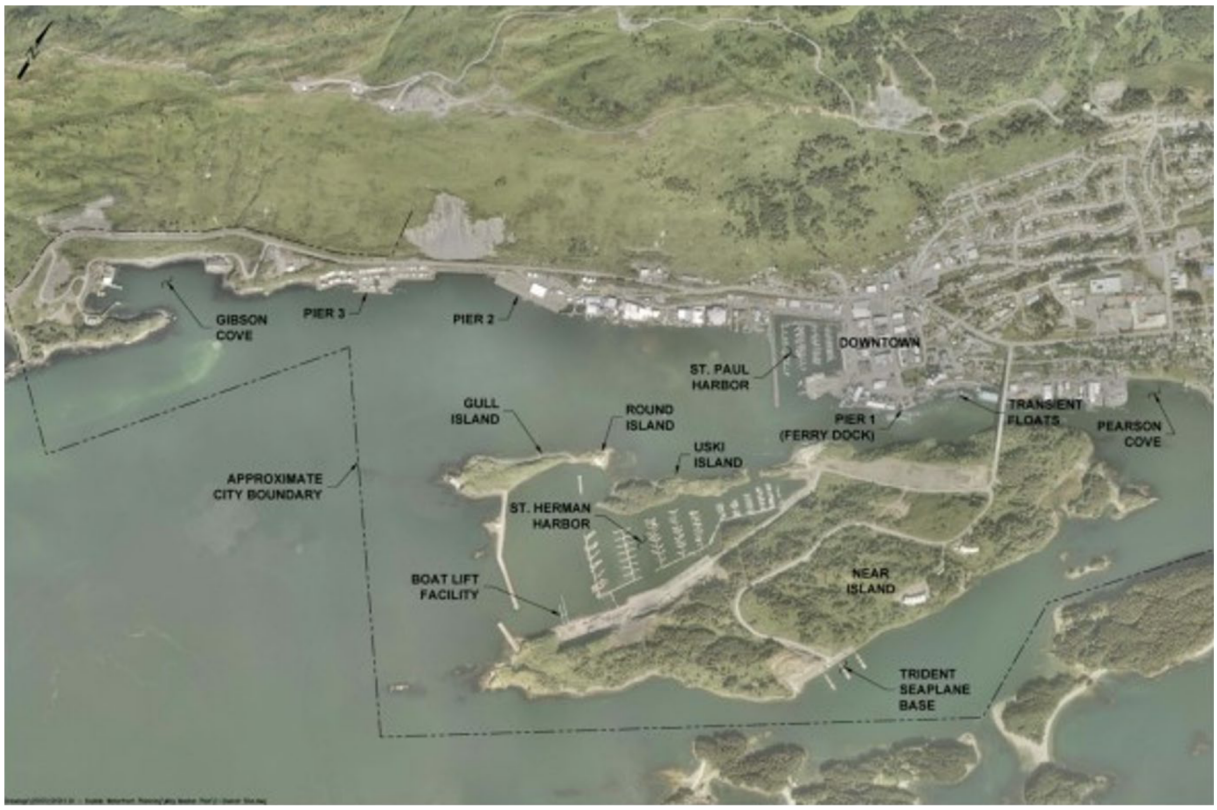
Intermodal transportation in Kodiak consists of marine transportation associated with the USCG, the Alaska Marine Highway System (AMHS), commercial seafood processors, and the cruise ship industry.

3.4.1 Facilities

Kodiak offers a full range of dockage, boat yard and marine services for commercial fishing, cargo, passenger, and recreational vessels. The facilities are owned by the City of Kodiak; operated and maintained by the City's Harbor Department. Two harbors provide protected moorage for 650 vessels up to 150 feet in length. Large vessels, including the state ferry, cruise ships and cargo vessels are moored at one of the three deep water piers. Two inner-harbor docks are available for vessels up to 120 feet that may be used for loading and maintenance activities. All vessels must register with the Harbormaster's office for moorage, services, and dockage. Electricity and water are available at several locations and in most slips. Other services can be provided upon request. Harbor staff may be reached 24 hours per day, seven days per week on VHF channel 12 or 16. The office is open 8 to 5 Monday through Friday (City, 2021).

The city-operated Saint Herman and Saint Paul Harbors provide small vessel slips, a dock, boat launch, and boat haul-out facilities. Shipping facilities are accommodated at the container port south of town. Intercommunity road access is limited because of the winter maintenance and road conditions.

Exhibit 7: Kodiak Marine Facilities Map



Source: City, 2021.

The following intermodal facilities and operations are available (AMHS, 2021):

- Pier I – State Ferry Dock (Main Terminal for the *Tustumena*): 204-foot by 28-foot dock with water and bulk fuel.
    - Visitors' Center Building (also known as the Chamber of Commerce Building or the Kodiak Ferry Terminal Building) includes a ticket counter, public bathrooms, and a small waiting area that seats four people.
    - Discover Kodiak has tourism information located across the hall from the terminal in the Visitors' Center Building.
    - Parking for 10 vehicles not including the loading lanes or street parking, and a 72-hour lot across the street.
- Pier II – City Dock (where the *Kennicott* docks): 925-foot by 64-foot dock for commercial freight and fishing gear with bulk fuel, water, and a covered warehouse.
    - Port-a-potty restrooms only.

  - Ample parking.

- Pier III – Container Terminal: 490-foot by 64-foot dock for container freight with crane service and with water.
- LASH Marine Terminal: over 1,200 feet of dock space located in Women's Bay with 40- and 150-ton cranes, forklifts, storage, warehousing, waste disposal, and water.
- Fuller's Boat Yard: installed a travel-lift for vessels up to 150 tons, and outdoor dry storage.
- Saint Herman Harbor / Saint Paul Harbor: 650 slips with a 150-foot maximum vessel length, two general purpose docks, and tidal grids are inside the harbor.
  - A gravel parking area and paved trailer parking lot are available at the Saint Herman Harbor.
- USCG Base: Largest USCG facility in the United States.

3.4.2 Ferry Service

The Alaska Marine Highway system provides two ferry routes with service to Kodiak. Service in Southcentral (including Kodiak, Ouzinkie, and Port Lions) is provided year-round, while connects between Southcentral to Southeast and Southwest are only provided during summer months due to weather restrictions in the winter months (AMHS, 2021).

3.4.2.1 Southcentral to Southeast

The *MV Kennicott* connects the regions of southcentral and southeast. The mainline route is *Bellingham → Ketchikan → Juneau → Yakutat → Whittier → Chenega Bay → Kodiak → Homer*. The run time between Chenega Bay and Kodiak is approximately 14 hours, while Kodiak to Homer is 9 hours (AMHS, 2021).

The *MV Kennicott* is designed to carry 499 passengers and has a vehicle capacity of 1,560 linear feet for operation in Southeast Alaska. The vessel is 382 feet long and 85 feet wide, with a domestic gross tonnage of 9,978 and a service speed of 16.75 knots. There are 48 four-berth and 58 two-berth cabins, as well as 3 wheelchair-accessible cabins. The *MV Kennicott* onboard amenities include observation lounges with comfortable chairs, a covered heated solarium, a cafeteria-style restaurant, a movie lounge, showers, coin-operated lockers, writing and quiet lounges, and a child's play area. Fresh towels, pillows and blankets are available upon request for a small fee (AMHS, 2021).

Exhibit 8: Southcentral to Southeast Ferry Routes

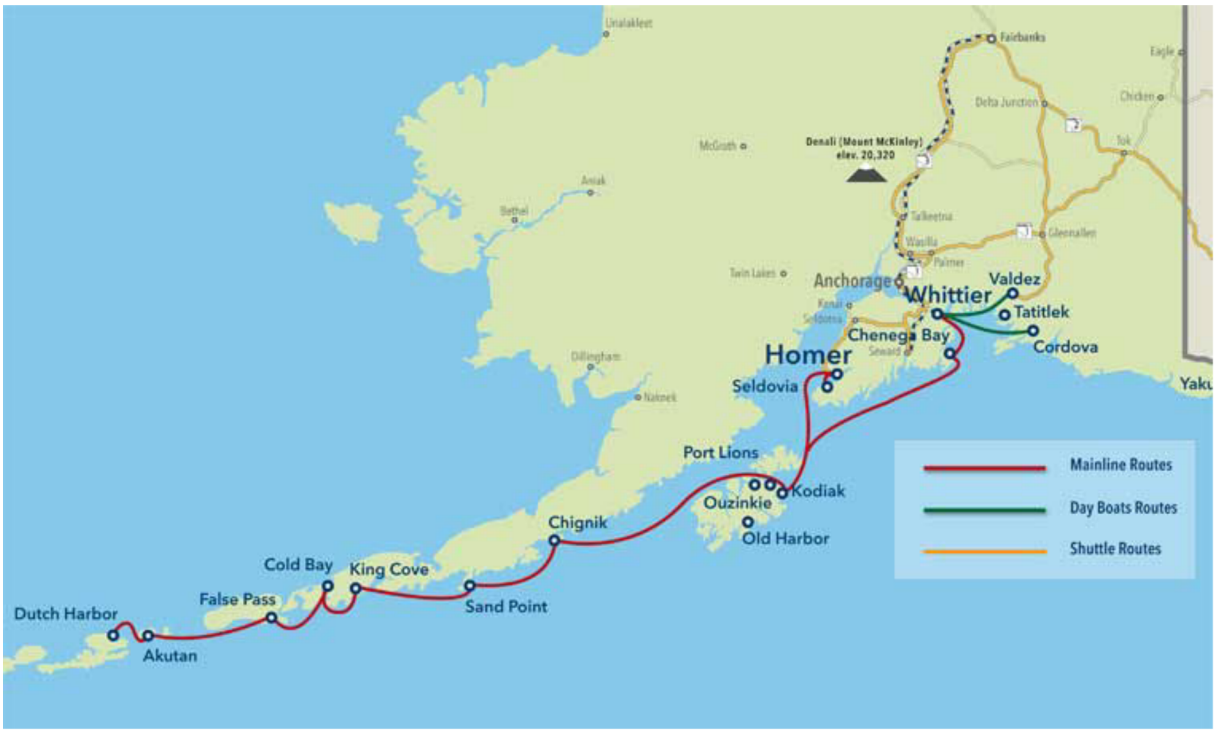
Source: AMHS, 2021.

3.4.2.2 Southcentral to Southwest

The *MV Tustumena* connects the regions of southcentral and southeast. The mainline route is *Homer → Kodiak → Chignik → Sand Point → King Cove → Cold Bay → False Pass → Akutan → Dutch Harbor*, and *Homer → Kodiak.* The run time between Chignik and Kodiak is approximately 18 hours and 14 minutes (AMHS, 2021)..

The *MV Tustumena* is 296 feet long and 59 feet wide, with a domestic gross tonnage of 2,174 and a service speed of 13.3 knots. The vessel is designed to carry 160 passengers and has a vehicle capacity of 680 linear feet, which is equal to approximately 34 twenty-foot vehicles. There are 6 four-berth and 17 two-berth cabins, as well as 1 wheelchair-accessible cabin. The *MV Tustumena* is equipped with a dining room offering sit down food service, observation lounges, a covered heated solarium, a movie lounge, and showers (AMHS, 2021).

Exhibit 9: Southcentral to Southwest Ferry Routes



Source: AMHS, 2021.

3.5 AIR TRANSPORTATION

Air transportation provides the primary means of access to Kodiak Island for freight, mail, and people. There are two land-based airports and two floatplane facilities in Kodiak. On Kodiak Island, there are several other airport facilities at nearby communities including Port Lions, Larsen Bay, Moser Bay, Alitak (seaplane base), and Ouzinkie.

The USCG owns the Kodiak Airport but leases it to the State. The airport is located approximately 4 miles south of downtown Kodiak and has three paved runways that are 7,548-, 5,400- and 5,000-feet-long. Regular jet service from Alaska Airlines is available to and from Anchorage. The Municipal Airport, located a mile from downtown Kodiak, has a 2,500-foot paved runway. Several airline charter services are available at the Kodiak and Municipal airports.

The floatplane facilities available in Kodiak include one located next to the Municipal Airport at Lily Lake, which is a freshwater facility, and another located at the Trident Basin Seaplane Base on the east side of Near Island. A small helicopter landing pad is available near Mission Bay off Mission Road.

3.6 RAIL TRANSPORTATION

There are no train / railway transportation systems in Kodiak at this time.

4.0 TRANSPORTATION FACILITY NEEDS

4.1 CITY PRIORITIES

The City identified transportation projects, strategies, and goals for the near- (1-5 years), mid- (6-14 years), and long- (15-20 years) term.

Table 3: List of City Priorities

Task Description	Status / Timeline
Funding / Budgeting	
Develop a plan and process for seeking funding through Local, State, Federal, and Tribal government resources.	1-5 years
Use the LRTP to identify public priorities and gather voter support to allocate more funding from the local City budget for transportation improvements.	1-5 years
Develop a cost analysis to compare the design life and maintenance costs of roads with different surface materials including gravel, pavement, and chip seal.	1-5 years
Records Management	
Continue to keep records of roadway improvements (including what was done, materials and construction methods used, and date). Evaluate condition of roadways on a regular basis (for example once per year) by taking pictures or notes and keeping an organized record. After several years, determine which construction methods and materials work best for Kodiak environmental conditions.	1-20 years (on-going)
Develop a simple record system to log community complaints about safety, potholes, and other transportation issues that could be used as data to support future funding needs.	1-5 years
Maintenance	
Explore new technologies and construction methods to improve the life of facilities that are impacted by environmental conditions such as freeze/thaw and heavy rain.	1-5 years
Implement a dust control strategy for gravel roads, especially on Near Island along Trident Road.	1-5 years
Planning	
Develop a process for completing safety improvements such as identifying projects in a safety plan, completing RSAs, applying for funding, etc.	1-5 years
Develop a planning study to evaluate school zone safety. Consider design options such as a merge lane near the high school parking lot, adding a stop light at the intersection of Birch and Mill Bay Road, realignment of Powel Street, and other school zone improvements.	1-5 years
Develop a study to evaluate addition of pedestrian walkways and streetlighting to Mission Street. Consider right-of-way limitations. Consider one-way traffic flow.	1-5 years

Table 3: List of City Priorities (Continued)

Task Description	Status / Timeline
Planning	
Evaluate long-term community growth and traffic patterns. Evaluate solutions for congestion relief at priority areas including: • Along Rezanof near the schools, • At the Birch and Mill Bay intersection, • At the Powell and Mill Bay intersection • At the Thorshiem and Mill Bay intersection. • At the Y intersection (Mill Bay and Rezanof). Also consider redesign options such as roundabouts or one-way streets, intersections that might need traffic lights, and other ways to increase / improve flow.	1-5 years
Develop the Port of Kodiak Master Plan, including an inventory docks and facilities.	1-5 years
Continue to coordinate with the Sun'aq Tribe for safety and roadway improvement projects and leverage Tribal resources.	1-5 years
Update the Utilty Master Plan and priority list for repair / replacement of water and sewer lines. Ensure road repaving efforts are coordinated with these upgrades.	1-5 years
Develop a study to evaluate solutions to improve emergency response and access for fire trucks and ambulence vehicles on steep and narrow roadways (including Hill Crest and High Street) such as reducing the incline, increasing lane widths, or other solutions.	1-5 years
Develop a list or map of roadways and their existing speed limits and determine if any need to be adjusted based on safety, access, and other factors. Identify locations for new speed limit signs, as needed.	1-5 years
Consider solutions for maintenance on Steller Way, which is a one-lane street that is too narrow to plow and pile snow.	1-5 years
Design / Construction	
Construct pedestrian improvements including new pathways and streetlighting on Mission Street.	6-14 years (After planning study)
Construct improvements for congestion relief on priority roads including: • Along Rezanof near the schools, • At the Birch and Mill Bay intersection, • At the Powell and Mill Bay intersection • At the Thorshiem and Mill Bay intersection. • At the Y intersection (Mill Bay and Rezanof).	15-20 years (After planning study)
Construct school zone improvements identified in the planning study.	6-14 years (After planning study)
Construct solutions to improve emergency response and access for fire trucks and ambulence vehicles on steep and narrow roadways that are identified in the planning study.	15-20 years (After planning study)

Based on conditions of existing roads determined during the August 2021 site visit, each roadway was also given a short, medium, or long-term priority for various maintenance activities. Theses priorities are provided in Appendix D.

4.2 TRIBAL PRIORITIES

The Sun'aq Tribe discussed the following priorities at the project kick off meeting during the site visit.

Table 4: List of Tribal Priorities

Task Description	Status / Timeline
Develop a Tribal Transportation Safety Plan.	Updated every 5 years.
Add the City's port and harbor facilities to the National Tribal Transportation Facilities Inventory so the Tribe can contribute Tribal Shares funding to improvements of those facilities, as needed.	1-5 years
Prioritize Shelikof Street to reduce congestion and improve road conditions, as needed.	15-20 years
Complete Road Safety Audits for the following streets: • Route 1001- Anton Larsen Bay Road 11.6 Miles • Route 1002- Mission Road 2.0 Miles • Route 1003- Rezanof Drive 13.8 Miles • Route 1012- Shelikof Street 0.9 Miles • Route 1043- Selief Lane 1.4 Miles • Route 1100- Lilly Drive 0.5 Miles • Route 1119- Sharatin Road 0.6 Miles	1-5 years The Tribe received TTPSF funding ($33k in 2019) to complete the RSAs.

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5.0 NEXT STEPS

5.1 PROJECT DEVELOPMENT

Implementation of any priority project should follow the general process listed below:

1. Planning
    - Research data, collect public feedback, identify needed projects and strategies, and prioritize them in a planning document (such as this LRTP).
2. Design (including Preliminary Engineering)
    - Develop a project scope, compare alternatives and evaluate life cycle costs (typically in a Preliminary Engineering Report), consider environmental impacts and requirements (typically in an Environmental Assessment), perform other preliminary engineering such as geotechnical investigations and surveys as needed, obtain land/easements and permits as needed, develop design plans and specifications.
3. Construction
    - Develop a budget and schedule, hire contractor(s)/subcontractor(s), procure materials, mobilize equipment, construct project.
4. Operations & Maintenance (O&M)
    - Develop an O&M plan including a schedule and budget, monitor conditions, perform maintenance activities as needed.

5.2 FUNDING PROCESS

There are many ways to fund a project including with the City budget, federal or municipal grants and loans, City bonds, partnerships with regional entities, or a combination of sources. In general, it is easier to obtain federal grants for the Construction phase of a project after "shovel ready" design documents are complete. Therefore, many municipalities fund the Planning and Design phases of projects with the City budget, or by leveraging partnership funds. Often, funding programs will consider the funds spent on Planning and Design as the "match" for the grant.

5.2.1 Setting a Budget

The best way to estimate the cost of a proposed project is to evaluate the costs of past similar projects in the region. The City can use expenditure reports, receipts, financial statements, and maintenance logs to generate unit prices and apply them to estimated project quantities. Each project budget should include costs for materials and labor (including per diem) and should include administrative costs (typically 15-20% of the project total) and an added contingency (typically 5-15% of the project total). The cost estimate should include all phases of

construction from permitting and mobilization to demobilization and cleanup. Third-party contractors can be used to generate cost estimates. Material suppliers can also perform take-offs of design plans.

5.2.2 Financial Constraints

To assist with transportation planning, cost estimates for short-term high-priority projects selected during the public involvement process will be developed. Having cost estimates on hand will aid in procuring funding by showing preparedness, as well as assist the City's planning efforts for future transportation projects and budget allocation.

In the event that funding falls short or requires amendment, the City will use the following recommended procedure to determine the best course of action:

1. Determine the new funding requirement;
2. Evaluate current available funding;
3. Evaluate additional funding options;
4. Hold a meeting with council members to re-evaluate the transportation budget and make amendments as needed, while utilizing the priority list to ensure other priority projects stay on track;
5. Adjust the project schedule as needed, and;
6. Update the LRTP.

5.2.3 Funding Sources

The vast majority of funding for transportation projects arises from federal highway acts, which are authorized by Congress and determine transportation policy and spending levels for a set period of time. These acts determine funding for BIA Transportation, FHWA, individual states, and Tribal Shares. At this time the primary governing highway act is the Fixing America's Surface Transportation Act (FAST Act). On December 4, 2015, President Obama signed the FAST Act (PL No. 114-94) into law. The FAST Act authorizes $305 billion over FY 2016 to 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, research, technology, and statistic programs.

The next transportation funding bill was signed in November 2021. Additional information about the upcoming changes and funding will be provided in the Final-Draft LRTP.

This section discusses potential funding sources for the Community's prioritized transportation projects, types of projects eligible for funding, and the funding process for each funding agency. Potential transportation funding sources include funds from the USDOT, Public Lands Highway, Scenic Byways, the Denali Commission, and the Better Utilizing Investments to Leverage Development (BUILD) Grant, among others, as explained in further detail below.

5.2.4 Alaska Department of Transportation

The ADOT&PF provides services to Alaskans and visitors by designing, constructing, operating and maintaining the state's transportation infrastructure systems, buildings and other facilities. These included more than 5,600 miles of highway, 242 airports, 731 public facilities, and 10 ferries serving 35 communities throughout the state of Alaska. The department is divided into three regions, along with the Alaska Marine Highway System. The Community falls within jurisdiction of the ADOT&PF Southeast Region, Juneau office.

There are several funding options available through the ADOT&PF for transportation-related projects, which are established by and subject to the FAST Act funding allocation. These are described briefly below. More information is given on the ADOT&PF website.

- *STIP* – The Statewide Transportation Improvements Program is funded by the FHWA, FTA, and matching funds from the state and/or local sources. The STIP is ADOT&PF's four-year program for transportation system preservation and development. The Needs List is the foundation of the STIP and includes all the air, land and water transportation projects in Alaska that have been formally proposed by residents, elected officials, and transportation professionals every four years.
- *Safe Routes to School* – Grants are available to help plan, design or complete construction improvements that enable and encourage children to safely walk and bicycle to school. Eligible recipients include state, local and regional agencies, and nonprofit organizations with a sponsor. A 20% match is required for all projects.
- *Public Transit Funding* – The State of Alaska maintains various public transit programs to aid in funding across the state. These include the Non-Urban Formula Grants, Rural Transportation Assistance Program (RTAP), American Recovery and Reinvestment Act of 2009 (ARRA) Funding Distribution, and the Tribal Transit Program Funds.

5.2.5 Other Funding Sources

Apart from the TTP and ADOT&PF, additional funding sources are available for transportation projects, as listed and described briefly below.

- *Grants.gov* – www.grants.gov is a public website where all federal agency discretionary funding opportunities are posted for grantees to find and apply to them. The search function can be used to sort out transportation related grants. Some grant postings close after only two weeks, so it is important to check for opportunities frequently.
- *The Denali Commission* – The Denali Commission is an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska. Various funding opportunities are available through their Energy Program, Transportation Program, Health Facilities Program, and Training Program. Visit the Denali Commission website for more information.

- *BUILD Grants* – The Better Utilizing Investments to Leverage Development grant program is a highly competitive program through the USDOT that supports innovative road, rail, transit and port projects to improve safety and economic opportunity in the United States. This program was previously known as Transportation Investment Generating Economic Recovery (TIGER). Available funding is only for construction costs and may not be used for planning, preparation or design. A minimum of 20% of funds will go to projects in rural areas.

5.3 TECHNOLOGY AND INNOVATION

This section provides an overview of resources to help the City of Kodiak stay up-to-date with modern technologies and innovative strategies for road construction, maintenance activities, information management, and more.

5.3.1 FHWA Center for Accelerating Innovation

The FHWA Center for Accelerating Innovation (CAI) was established in 2012 to identify proven yet underutilized innovations for planning, design, building, and maintaining highways and road systems. There are countless resources online including information on proven innovations, success stories, funding opportunities, virtual workshops, training resources, and more. Some proven innovations that may be beneficial for Kodiak include:

- **Intersection and Interchange Geometrics** – Innovative intersection and interchange geometrics can accommodate traffic volumes efficiently while reducing or altering conflict points to allow for safer travel. These effective alternatives to traditional designs include modern roundabouts, diverging diamond interchanges, and intersections with displaced left-turns or variations on U-turns.

- **High Friction Surface Treatments** – High-quality aggregates that can be applied to existing or potential high-crash areas to immediately and dramatically reduce specific crash types and the related injuries and fatalities. HFST restore or maintain pavement friction, helping motorists keep better control in dry and wet driving conditions.

- **Geospatial Data Collaboration** – Geospatial data collaboration helps agencies save time on highway projects by making tools, data, and maps available on the Web. This shared access can improve the efficiency of working relationships among agency stakeholders, simplify data distribution among project participants, and enhance or streamline information flow for environmental and other processes.

- **Intelligent Compaction** – Intelligent compaction (IC) is a modern approach to compacting pavement materials that enhances pavement quality, uniformity, and long-lasting performance. IC uses vibratory rollers equipped with accelerometers, a continuous measurement system, Global Positioning System-based mapping, and an onboard computer reporting system so operators can monitor the compaction process in real-time and provide corrections if needed. IC rollers compact with greater efficiency with fewer passes than traditional modern vibratory rollers, producing

saving time, cost, and fuel. Continued use and improvement of IC technology will produce better quality roadways and allow agencies to operate more efficiently.

- **Pavement Preservation (When, Where, and How)** – Applying a pavement preservation treatment at the right time (when), on the right project (where), with quality materials and construction (how) is a critical investment strategy for optimizing infrastructure performance. The "when and where" component supports preservation by managing pavements proactively. Whole-life planning defines expectations for the long term and provides more stability to the cost of operation and maintenance. Identifying preservation strategies at the network level reduces the need for frequent or unplanned reconstruction. The "how" component promotes quality construction and materials practices, including treatment options that apply to flexible and rigid pavements. These practices contribute to improved pavement performance, providing smoother, safer roads and delaying the need for rehabilitation.

- **Road Weather Management** – Integrating Mobile Observations (IMO) and Path-finder are two distinct road weather management solutions that can help State and local agencies manage the surface transportation system ahead of, during, and after adverse road weather conditions. IMO is a cost-effective way to gather information on weather and road conditions using existing fleet vehicles that can then be integrated into decision support systems. Vehicle-based technologies provide agencies with data to manage transportation systems before the impacts of adverse weather occur. The Pathfinder process enables transportation departments, the National Weather Service, and private weather service providers to collaborate on clear, consistent road weather messaging for the public, helping drivers make informed travel decisions.

- **Safe Transportation for Every Pedestrian** – The majority of pedestrian roadway fatalities occur at uncontrolled crossing locations (such as midblock areas). The following countermeasures have known safety benefits for reducing those crash types:
    - Crosswalk visibility enhancements, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrians.
    - Raised crosswalks are a traffic calming technique that can reduce vehicle speeds and encourage drivers to yield to pedestrians.
    - Pedestrian refuge islands provide a safer place for pedestrians to stop at the midpoint of the road before crossing the remaining distance.
    - Pedestrian hybrid beacons provide pedestrian-activated stop control in areas where pedestrian volumes are not high enough to warrant a traffic signal.
    - Road Diets reconfigure a roadway cross-section to accommodate all users safely.

More information for each of these innovations, and others, can be found on the FHWA CIA website.

5.3.2 Professional Conferences and Trade Shows

Another great way to learn about new technologies on the market and stay current with transportation research is to have City personnel attend professional conferences and trade

shows. The following is a list of entities that typically host conferences, conventions, workshops, trainings, and other transportation-related events:

- American Association of State Highway and Transportation Officials (AASHTO)
- National Local Technical Assistance Program Association (NLTAP)
- Institute of Transportation Engineers (ITE)
- International Municipal Signal Association, Inc. (IMSA)
- American Traffic Safety Services Association (ATSSA)
- National Weather Association
- American Public Works Association (APWA)
- International Association of Chief of Police (IACP)
- Intermodal Association of North America (IANA)
- Western Association of State Highway Transportation Officials (WASHTO)
- American Meteorological Society (AMS)
- American Road & Transportation Builders Association (ARTBA)
- American Public Works Association (APWA)
- Association of Metropolitan Planning Organizations (AMPO)
- Operations Academy
- National Rural ITS
- National League of Cities (NLC)
- American Meteorological Society
- American Traffic Safety Services Association (ATSSA)
- National Association of County Engineers (NACE)
- National Association of Regional Councils (NARC)
- Northeast Association of State Transportation Officials (NASTO)

Other transportation-related conferences that take place in Alaska (Anchorage, Fairbanks, Juneau, Ketchikan) include:

- The Alaska Tribal Transportation Symposium
- The Alaska Trucking Association's Annual Meeting
- BIA Tribal Providers Conference
- Annual Alaska Community Transit Conferences
- Alaska Mobility Coalition Annual Meeting
- Alaska Tribal Transportation Work Group (ATTWG)

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