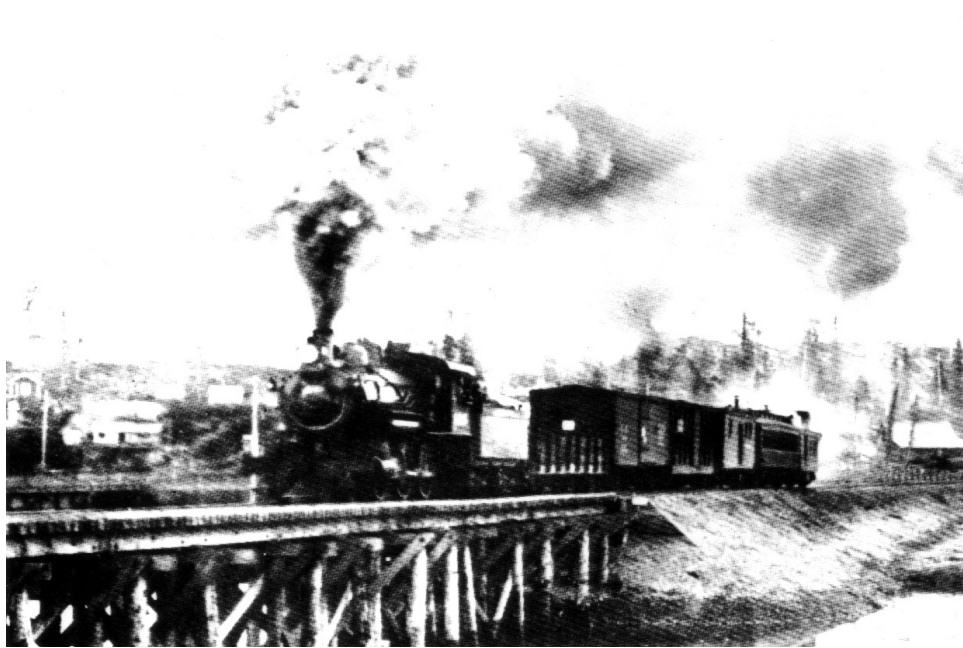


DISTRICT PROFILE

- 2.1 Development Patterns
- 2.2 Land Uses
- 2.3 Recreation/ Open Space/ Park trails
- 2.4 Environmental/ Natural Resources
- 2.5 Historic and Cultural
- 2.6 Transportation
- 2.7 Freight Mobility - Port and Rail
- 2.8 Community Facilities
- 2.9 Design-Sense of Place



Ship Creek, 1950



Alaska Railroad, 1914

2.1 DEVELOPMENT PATTERNS

Current Development Patterns

The Ship Creek area has been the site of significant human activity since serving as an important occupation and subsistence site for the Dena'ina people thousands of years ago. Ship Creek became a boomtown tent city in 1914 with the establishment of the Alaska Engineering Commission headquarters in Ship Creek. As railroad construction ensued in 1915, the community took shape around the railroad development, at first as a tent city in the Ship Creek valley bottom with that displaced by railroad-related activity as residential properties were developed in Government Hill and what is now the Anchorage downtown.

That railroad-related industrial development prevails for most Alaska Railroad property along Ship Creek. However, over the years some of the older facilities, particularly within the study limit boundaries, have been demolished. As structures have been razed they have provided some redevelopment opportunities. Among the developments since the 1991 Ship Creek/ Waterfront Land Use Plan have included a new headquarters site for the Alaska Railroad Corporation (ARRC), a new hotel, retail outlets and restaurants, redevelopment of a historic structure, a new park and plaza, and a new trail linking downtown to Mountain View.

The Alaska Railroad Corporation has facilitated and generated some adaptive reuse of key structures in the Ship Creek area. Notable efforts include the Bridge restaurant, Denali Park Resorts, and the renovated Freight Shed. The Bridge restaurant serves as a location for special events and as a catering kitchen. The freight shed provides professional office space, most notably as a headquarters for the USFS Chugach National Forest.

The construction of the new ARRC headquarters and the move of offices to its new building left empty space on the second and third floors in the old ARRC Historic Depot on 1st Avenue. This building has begun attracting tenants, most notably the offices of McCool-Carlson-Green Architects. This firm occupies the top floor of the historic building and helps fulfill the interests of the ARRC to attract professional services firms to the area to stimulate commercial and potentially residential growth in the Ship Creek area.

With the demolition of unneeded and deteriorating facilities, large pockets of vacant land have been created within the Ship Creek area. The largest of these parcels are located in the western portion of the

Ship Creek area, with parcels measuring 11.8 acres, 8.7 acres, and 6.9 acres. Smaller lease areas are located in the eastern portion of the study area with a small 1.6 acre parcel located east of the Comfort Inn. Smaller parcels are also available dedicated to parking within the eastern portion of the study area and these small parcels are also possible development sites.

Over the years there have been many efforts aimed at promoting development of Ship Creek lands for urban development. In 1991 LoPatin & Company was provided a long term lease with the intention of developing a number of renewal projects in Ship Creek Basin. LoPatin developed a master plan that was codified by the Anchorage Assembly in 1993 and served to promote a Salmon Learning Center and a number of other projects. Little came of those efforts and ARRC canceled the lease arrangement after a period of years.

ARRC hired Land Design North in the late 1990's to provide a more holistic look at the land and opportunities. Work included evaluation of tourism and mixed use development opportunities. The effort included a comprehensive public involvement and visioning process for the Ship Creek area. Coincident with that effort, and to some degree as the result of the ground work of that effort, the ARRC entered into leases with the Comfort Inn, Ulu Factory, The Bridge restaurant, new parking areas, and a new plaza. ARRC also embarked on efforts such as the historic retrofit of the historic freight shed. The end result of the Land Design North effort was the voiding of the LoPatin master plan and the codification by the Municipal Assembly of a new rezoned area accompanied by design guidelines that address all "Planned Community" zoned areas within the study area.

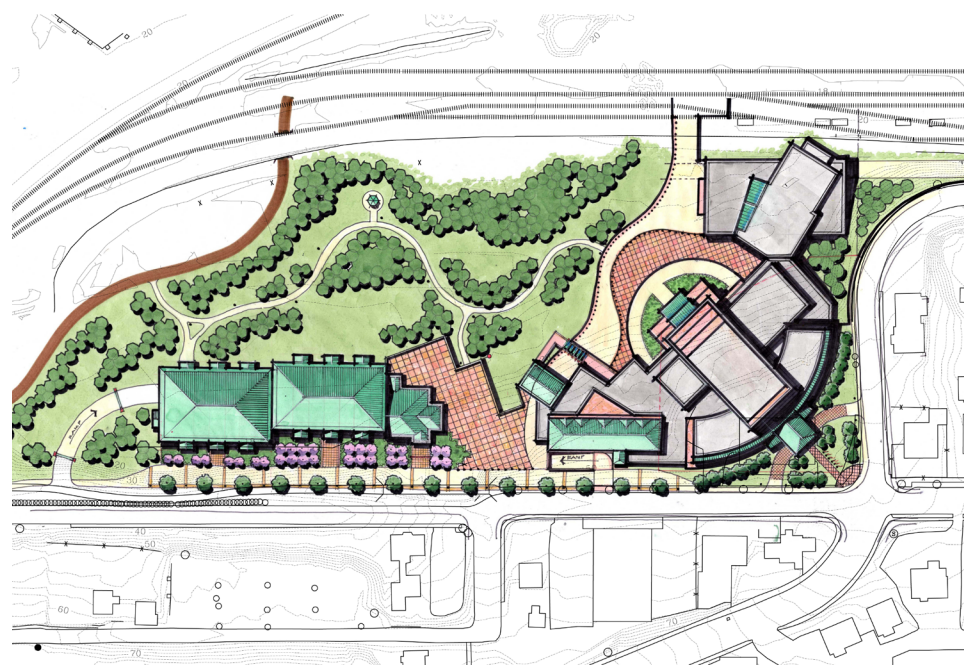
In 2002/2003 the Municipality of Anchorage and the Alaska Railroad Corporation studied the possibility of an intermodal connection from E Street, near the 2nd Avenue intersection, to the Historic Rail Depot. ECI/ Hyer was hired to study options to provide a facility that was inspiring but provided connection of pedestrians from the Anchorage downtown area to the Historic Depot.

A graduate student completed a thesis project in 2006-2007 that proposed potential mixed use development for a vacant ARRC parcel located northwest of the 2nd Avenue/Christensen Drive intersection. The graduate project proposed a stepped development of buildings and plazas with integrated parking that would bridge a change in elevation from the intersection to the lowlands. That proposal was integrated in the graphic shown on page 16 which has served as a general guide by the ARRC for future leasing of their lands.

The American Institute of Architects had an "AIA150" program that



Ship Creek Vision - Sketch by Land Design North from 1990's ARRC planning



Proposed mixed use development, 3rd Avenue and Christensen Drive

celebrated 150 years of architecture by awarding grants to model projects. With grant funding the AIA embarked in 2008 on an Anchorage Historic District Visioning Session. As part of that effort, AIA was challenged to envision a Salmon Learning Center, for which AIA Central Alaska Section held a design charrette that addressed the siting a learning facility along the banks of Ship Creek.

A current effort by the ARRC would construct an amphitheater in the buttress area, directly below the parking lot that serves Saturday Market, northeast of the 3rd Avenue and E Street intersection. The amphitheater would generally follow the slope of the existing buttress with a stage located near 2nd Avenue at its lower elevation connection to Ocean Dock Road.

Anchorage 2020 Comprehensive Plan Recommendation

The Anchorage 2020 Comprehensive Plan provides only general comments and recommendations with respect to the Ship Creek study area. The Plan recognizes that the area was "...the focus of a major master planning effort by the Alaska Railroad Corporation, which owns most of the property in this area. Proposed developments include road, rail, and utility improvements; trails and landscaping; and a mixed use of residential, commercial office, and retail development."

The Anchorage 2020 Comprehensive Plan provides a description of trends within the Anchorage Bowl that are germane to the efforts of this project. Among many other things, the Plan recognizes the following:

- Land available for residential development is limited within the Bowl
- The supply of land for multi-family housing needs to be retained and not diminished
- Industrial and commercial land can be used to address residential land demand
- Forecasts for growth by 2020 project a need to accommodate 31,600 more households and workplaces for 39,600 more employees
- Anchorage's port is tremendously important and needs:
 - i. Expansion of a petroleum terminal
 - ii. Additional cargo transit areas
 - iii. Construction of a south access route
 - iv. A north access corridor for truck and rail traffic

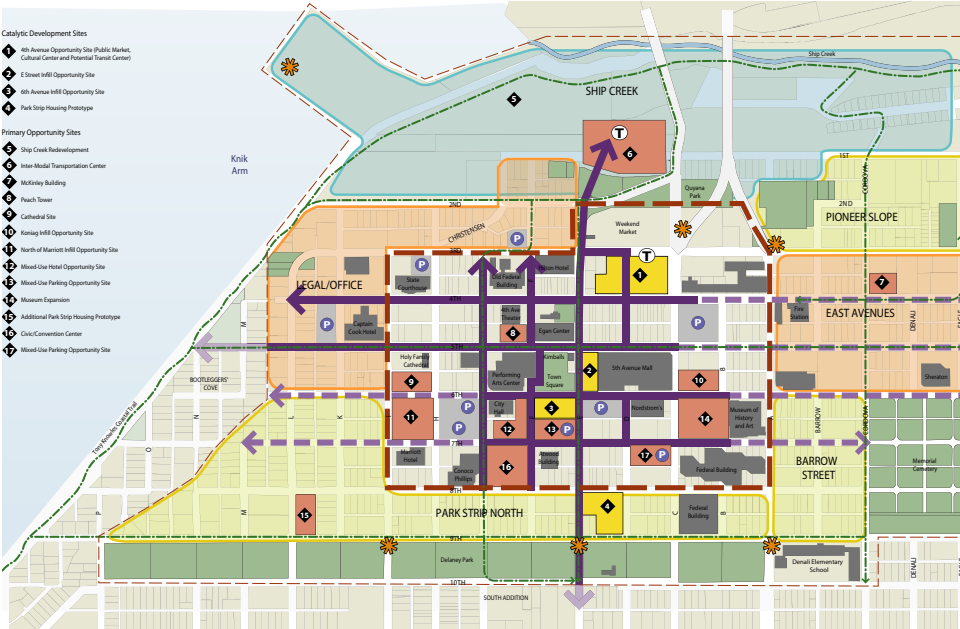
The Plan contains a “Land Use Policy Map” that designates areas north of Ship Creek, west of the study area, as “industrial reserves”. Areas within the study area are generally dedicated as “Redevelopment/Mixed Use”. Anchorage 2020 recognizes that the Ship Creek area is an important component of the continuation of the Anchorage Central Business District as a major employment center and contemplates a mix of uses in the study area.

The Plan provides policies and strategies to achieve its goals. The policies and strategies propose a community with much more efficient transportation corridors with emphasis on multi-modal transportation. It also describes a stronger emphasis on good design within the community and preservation of open space. It also includes emphasis on mixed use development to promote a walkable community with an offering of commercial uses to meet local needs for jobs, goods, and services.

Anchorage Downtown Comprehensive Plan

The Ship Creek area is proposed “...to accommodate medium density, residential development, supplemented by commercial uses such as restaurants, small scale hotels, arts production spaces, and railroad-related uses.” The Downtown Plan suggests that “...new development should reflect the industrial history of the area, incorporate live-work units and maximize Ship Creek as a recreational resource, while adhering to seismic constraints.” It also offers the following recommendations:

- Promote historic character and an arts corridor along 1st Avenue.
- 1st Avenue east of the A/C couplet should be a “slow” traffic street that provides a comfortable pedestrian environment with a street lined with galleries and shops.
- The Downtown Plan also offers other recommendations relevant to the Ship Creek study area. The area in the vicinity of the Historic Rail Depot is proposed to serve as an intermodal transportation Center.
- The “buttress area” is addressed in the plan with cautionary notes concerning development. It recognizes that the buttress area was created to stabilize potential sliding of downtown properties. The buttress area was established by the Alaska State Housing Authority as part of an Urban Renewal Study completed following the 1964 earthquake. Development restrictions were imposed concerning building height and weight, and limits regarding cut and fill. Covenants were placed on the land though these



Anchorage Downtown Comprehensive Plan

expired in 2005. The Downtown Plan recommends a new seismic risk assessment be conducted to address risk and development opportunities, and the possible need to again establish the covenants on the property that governed development.

- Transportation and circulation improvements proposed in the Downtown Plan could also affect development of the Ship Creek area. For example, the plan proposed that 3rd Avenue be converted to one-way westbound traffic as part of a 3rd/6th couplet, replacing the existing 5th/6th couplet.

Government Hill Neighborhood Plan

The Government Hill Neighborhood Plan is a district plan that provides land use plans and policies related to the Government Hill neighborhood north of the Ship Creek Basin. However, the boundary of the plan extends to the thread of Ship Creek. The plan designates land directly north of Ship Creek as “Parks Natural Resources”, from the thread of the creek to Whitney Road and industrial parcels that flank the creek. The plan also provides for continuation of industrial use of the existing industrial parcels, including areas north of Whitney Road where the Hobbes Power Plant is located. All land north of that to the base of the bluff is deemed to be “Major Transportation Facility” use.

With respect to the aforementioned uses, the plan proposes that the ARRC rail yard corridor minimize light and noise impacts to the Government Hill neighborhood, coordinate transportation

improvements, and preserve historic buildings. With respect to industrial lands, the plan proposes that pedestrian and bicycle access to downtown be improved, that abandoned buildings be redeveloped, that the Hobbes Power Plant be rehabilitated, and that foliage be planted along the railroad edge.

The plan also suggests that the “industrial knuckle where the Port of Anchorage and ARRC yards merge, provide for improved pedestrian walkways along the A/C Couplet bridge and roadways in the Ship Creek basin, that public art and winter lights be installed on the A/C Couplet bridge, and that amenities be provided for residents and visitors. It also suggests that the location provide a mix of office buildings, services, and some visitor facilities.

Knik Arm Bridge and Toll Authority

The Knik Arm Bridge and Toll Authority (KABATA) was established in June of 2003 by Alaska Statute 19.75 to “further the development of transportation systems in the Upper Cook Inlet region by providing improved vehicular access and surface transportation connectivity between Anchorage and the Mat-Su through the Port MacKenzie District...” The bridge would cross Knik Arm from the north, near Port McKenzie in the Matanuska-Susitna Borough. It would land north of the Port of Anchorage and would pass under the Government Hill neighborhood via a “cut and cover” tunnel. The project has a “build” Record of Decision from the Federal Highway Administration. Despite these steps, the proposal has moved forward with some concerns by individuals and groups. Recognizing some of the concerns, the 2013 Alaska Legislature passed a bill that folded the agency into the Alaska Housing Finance Corporation thus the funding of the project will be determined by that agency to a large degree.

Title 21 Impacts

Anchorage’s land use codes are contained within AMC Title 21. It describes the Municipal planning process, responsibilities and authorities of boards and commissions, zoning districts, allowable, conditional and prohibited uses, and supplementary requirements for specific actions. Title 21 went through an extensive re-write spanning a period of almost ten years and an updated Title 21 was adopted by the Municipal Assembly in February 2013.

The newly adopted Title 21 rewrite is not effective until 2014 at which time developers/proposals may choose to comply with either the old Title 21 or the rewrite version. After 2014 all developers/proposals must



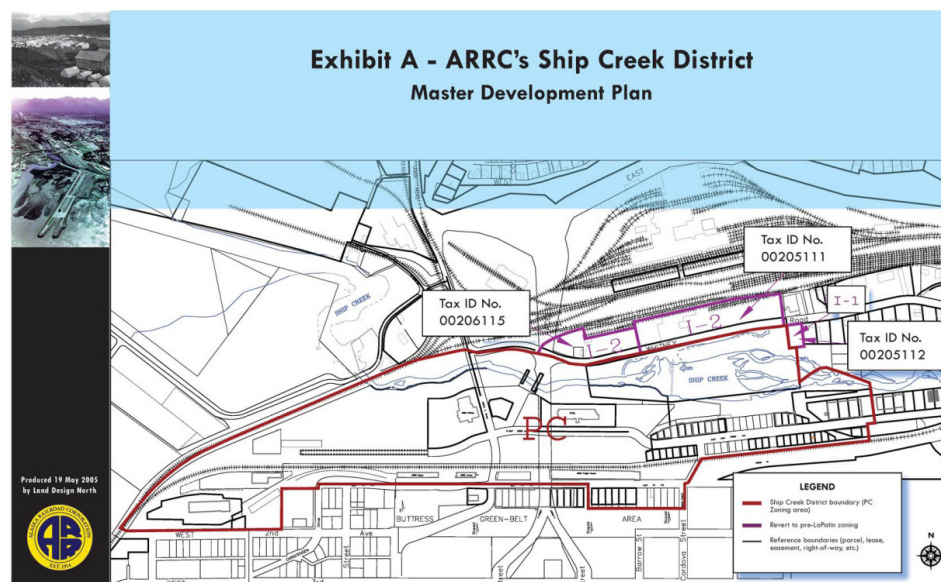
KABATA graphic

comply with the requirements of the rewrite version.

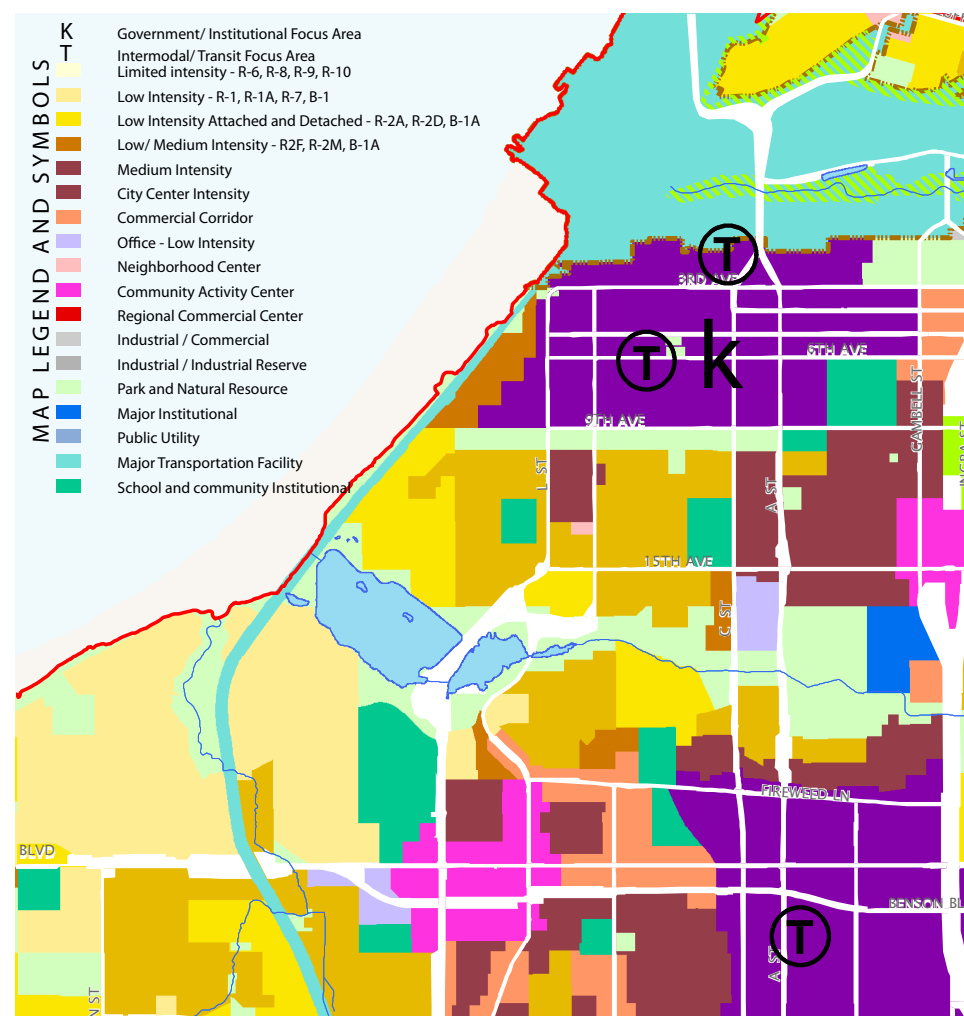
Regardless of the version, procedural requirements generally still apply with respect to actions in the Ship Creek area. However, the B-3SL zoning change in Ship Creek (AO 2006-046) provided specific requirements both procedural and with respect to land use. That ordinance in essence repealed the 1991 master plan by LoPatin and replaced it with a new master plan: “An ordinance repealing Ordinance AO 93-183(S1) concerning PC (Planned Community) Zoning and Master Plan and adopting a new Ship Creek Framework Plan for a portion of ARR Reservation located in the Lower Ship Creek...and amending the zoning map...” Thus the master plan produced in the 2006 rezone governs land use in the area and all actions must comply with both the zoning language and design guidelines that were adopted as part of that rezone action. Any contemplated actions in the Ship Creek area that do not comply with the zoning requirements would require a rezone and a change to the requirements of AO 2006-046 before it would be possible to implement those actions.

Current Zoning Requirements

The 2006 rezone stems from an eight year effort that evaluated the use of ARRC property and sought to establish a mixed use development that would recognize that ARRC lands were part of the Anchorage Central Business District. It also recognized that ARRC properties and vacant lands offered tremendous opportunities to create a housing, restaurant, and retail environment that did not exist in Anchorage. The many years



Land use designations according to AO 2006-046



Land Use Plan Map from the Anchorage Bowl Comprehensive Plan

of effort were codified in AO 2006-46 and established a new master plan, new zoning requirements, specific procedural requirements, and design guidelines that applied to development in the area.

The “master plan” as described is actually a simple line drawing that designates which lands are governed by planned community requirements and which lands are governed by the Title 21 requirements with respect to industrial land use designations. Any land designated I-1 or I-2 must comply with the requirements of Title 21 that govern “I” designated zoning. All land designated “PC” must comply with the requirements of AO 2006-46 and the design guidelines.

Key aspects of AO 2006-046 include the following:

- Some areas of land that were included in the original zoning language from 1993 were reverted to industrial zoning classifications recognizing their existing and foreseen use.
- Those lands designated as “PC zoning” are to provide a mixed-use, pedestrian oriented development and a visitor destination with a combination of:
 - i. Commercial mixed use
 - ii. Residential
 - iii. Government/Informational
 - iv. Warehouse/Light industry
 - v. Kiosk/vendor business
 - vi. Appropriate accessory uses
 - vii. Railroad operational use
- Height restrictions were imposed to ensure those in downtown offices and residences could maintain views to the north. Specifically, development between H Street (extended) and Cordova Street (extended) is limited to a height of 120 feet above mean sea level (MSL) by right, with a height of 150 feet above MSL via conditional use process. Lands outside of that corridor are restricted to a height of 85 feet above MSL.
- There is an allowable maximum number of housing units of 400 housing units in various configurations spelled out in the zoning language. The limitation is generally a function of the interest in providing a mixed use development, not overly residential in nature.
- New commercial and industrial floor area is limited to 3.5 million square feet, again, in the interest of ensuring that the area is not

overly commercial in nature.

- A Ship Creek District Review Board is established to review site plans. Final review authority lies with the Planning and Zoning Commission. Certain actions require an evaluation by the Geotechnical Advisory Commission.
- All development not within I-1 or I-2 zoning must comply with Design Guidelines which were attached to the rezone by AO 2006-046.

The Design Guidelines as adopted by the rezone provide definition with respect to procedures and govern the following uses within the PC designation:

- Off street parking
- Parking Structures
- Streets and vehicular traffic
- On street and off street loading
- Pedestrian circulation
- Rail and transit guidelines
- Landscape, open space, and amenities
- Lighting
- Signage
- Architecture

Port Expansion Impacts

The current port facilities are 50 years old and are in deteriorated condition which require replacement of the current dock. The Port of Anchorage is currently in the initial stages of a new master planning effort to address steps to revitalize existing facilities and provide for needed expansion. CH2M Hill released "Port of Anchorage Intermodal Expansion Project Study, 15% Concept Plan on February 28, 2013.

The study reviewed current conditions and through a design charrette process narrowed options to five with three options to be carried forward for further consideration. The preferred option provides 32 acres of new paved upland. It includes approximately 2050 linear feet of new dock including 1100 linear feet of Roll On/Roll Off (RO/RO) and Wet Barge Berth to support containerized RO/RO operations and 950 feet of Container Berth. The new berth would be constructed of pile-supported wharf with access trestles.

- The work includes the following components:
- Existing Terminals 2 and 3 are demolished and replaced
- Water service and fire suppression lines
- Sanitary sewer lines
- Storm drain piping and inlets
- Electrical, communication, security, and crane power lines
- Realignment of the Cherry Hill Haul Road with a new rail spur
- Paved upland of 32 acres

Construction is proposed to begin in 2015.

The environmental assessment for the project suggested that the project would have a significant beneficial effect on recreation and visual resources with a new interpretive center for public information. Also, the Coastal Trail could be extended as part of mitigation, helping to connect the trail network.

The environmental assessment did not foresee any adverse long term effects to traffic or transportation resulting from the Port expansion. There would be an increase in traffic, but it would not affect Level of Service of the road system.

Specific issues and project related to the Port of Anchorage and the overall study area are further discussed in the Transportation section of this report

.2.2 LAND USES

Goals/Objectives from the Commercial Development from the 2012 Commercial Land Assessment

In 2012, future commercial land supplies and demand were studied by the Municipality of Anchorage, taking into account economic trends, population growth, and market feasibility. The study determined that Anchorage has a buildable commercial land supply of 889 acres, and that this represents an adequate supply over the next 20 years. However, in terms of large size lots and lots in specific areas, Anchorage is under supply most notably mid-town.

Ship Creek was specifically analyzed in the study for its development potential, as it has the largest available sites for development in the Downtown vicinity. A multi-tenant retail project in the Ship Creek area

was tested in the study for tourism commerce on a 131,000 square foot parcel with 46,000 square feet of multi-tenant retail space. Income generated by the Ship Creek scenario was found to fail to justify the cost of the development based on specific market challenges:

The seasonal nature of tourism, and resulting high summer traffic/low winter traffic patronization, typically has a dampening effect on the achievable lease rate and presenting challenges to year-round or long-term leasing during weak, off-season commercial activity.

Second, the location of the Ship Creek area also presents challenges to maximum achievable lease rates for retail tenants. With significant industrial development in the vicinity, the area is somewhat isolated from households and typical household shopping patterns, and thus is significantly less convenient for non-tourism shopping.

Finally, to the extent that the lease rate or its structure is set in a manner that would reduce cost, as a matter of economic development strategy, such development could see enhancement in potential feasibility.

Plan recommendations that could be relevant to Ship Creek include a number of items. First, the plan recommends that the Municipality convert industrial lands to commercial designations that can support higher land values. Next the Municipality suggests looking for ways to

intervene in the markets to change the marginal form of development and help address developers’ economic and logistical challenges. Finally, the Municipality anticipates that it needs to better understand the scope and scale of necessary infrastructures and potential economies of scale and/or returns on investment for infrastructure serving clustered commercial (re)development compared to more dispersed, higher density development.

Goals/Objectives for Mixed Use – High Density Housing from the 2012 Anchorage Housing Market Analysis

This study concludes that Anchorage has a deficit of land for all housing types, except for large-lot single-family housing. The Anchorage Bowl is forecasted to need 18,200 new housing units in the next 20 years; multiple factors will make meeting this demand a challenge. Economics play a large role in dictating what is financially feasible in terms of denser, less traditional single family development. For example, town home prototypes are close to feasible, while mid-rise residential and mid-rise mixed-use rental developments are financially not feasible for a variety of reasons:

Construction is already 37 percent more costly in Anchorage than in the U.S. on average because of climate, geography and economic



View of Anchorage CBD

conditions; the need for the need to provide structured parking with this form of development adds even greater costs.

A conservative lending environment that does not favor this scale and complexity of project; and existing architectural forms and in some areas infrastructure that is less conducive to compact development.

Given these challenges, the report recommends that public investment and other creative solutions will be necessary to make mid-rise multifamily, mixed-use development and the other creative forms of development feasible in Anchorage that will help the region meet future demand. The plan also recommends focusing on more efficient land uses, increased residential densities, increasing the supply of buildable land, and facilitating redevelopment.

2.3 RECREATION/ OPEN SPACE/ PARK TRAIL

Goals/Objectives from the Anchorage Bowl – Park, Natural resource and Recreation Facility Plan

Anchorage’s plan for parks, recreation and open space provides a number of recommendations that are relevant to the Ship Creek area, and its future land uses:

- The Ship Creek waterway and its greenbelt are a primary natural resource within the Anchorage Bowl; securing waterfront public access (with the railroad and military), enhancing water quality, restoring the stream and improving habitat diversity are all identified needs.
- Park Access, trails, and connectivity priorities in the plan include developing trail connections along Ship Creek to link to the Tony Knowles Coastal Trail, Downtown, Government Hill, and Mountain View (to the south to Northway Mall). Specifically this includes connecting the Tony Knowles Coastal Trail to Ship Creek Point and to the Ship Creek Trail.
- In terms of parks, a number of broader goals are potentially relevant to the Ship Creek Area:

Park Strategy 3: Parks as Community Building Blocks:

- i. Develop additional specialized facilities and other world-class venues capable of hosting international events but designed to meet local needs at appropriate locations.

Park Strategy 4: Parks as Community Economic Engines:

- i. Encourage visitor stay in the Anchorage area by one additional day.
- ii. Explore investing in two or three high quality multiplex sports complexes for tournaments or elite-level play.

Park Strategy 6: Access and Connections

- i. Promote visitors to stay an extra day in Anchorage and play on our trails and parks
- ii. Acquire lands to complete any gaps in the existing system through land transfers from other municipal agencies through land purchase, negotiated easements, or new plat easements.

Park Strategy 7: Stewardship of Natural Resources

- i. Greenbelts will be established for all the major creeks (including Ship Creek)
- ii. Provide enhanced and dispersed coastal access through completion of the coastal trail system.
- iii. Promote the use of geologic hazard areas and marginal land for parks, recreation, and natural resource space
- iv. The Municipality shall establish natural resource preservation areas for the protection of unique land and water relationships, fish and wildlife habitats, high-value wetlands, riparian corridors, and vistas.
- v. Northwest Park and Recreation District (Downtown, Government Hill, Spenard, and Turnagain). As the oldest settled part of Anchorage, this area has the greatest potential for renewal and redevelopment and the second largest population base. Increased densities and aging population will change the recreational demand for this area over time with anticipated population growing to 61,592 by 2020.
- vi. The major issue with parks in this subarea is that most are mini-parks or neighborhood parks with acreage below the minimum recommended. Due to the historic settlement patterns of the area, additional land will be difficult to acquire.
- vii. The area will have a shortage of Natural Use areas due to the higher density of residential development and the limited supply of land.



Tony Knowles Coastal Trail

2.4 ENVIRONMENTAL/ TIDES, CURRENTS, EROSION, DEPOSITION

Hydrology, Flood Zones, and Water Quality

Hydrology. The north portion of the Ship Creek Plan planning area, north of East Harvard Avenue (including the Port of Anchorage and Government Hill) drains directly to Cook Inlet. The remaining portion is drained by Ship Creek, which runs for about 2½ miles from east to west through the planning area and discharges to Cook Inlet through the Ship Creek estuary. The entire Ship Creek watershed encompasses 117 square miles, from an elevation of 4,200 feet in the Chugach Mountains to sea level at the mouth of the creek. The planning area comprises 1.3 square miles of the watershed. There are several dams on the creek, one of which, the Knik Arm Power Plant dam, is within the planning area. Two dams upstream of the planning area were constructed to facilitate water diversions for hatcheries that no longer take water directly from the creek. A third, high in the Chugach Mountains, is a water supply dam. Due to the low volume of diversions and relatively small storage capacity of these dams, stream flow rates are only marginally affected by their operation. The annual hydrography is dominated by high flows during spring runoff and flashier flows through September due to late summer rain storms.

Flood Zones. The Federal Emergency Management Agency (FEMA) has mapped the 100-year flood hazard areas (areas that have a 1% or greater chance of flooding in a given year) for Ship Creek from the mouth to the military boundary at North Reeve Boulevard (which is also the eastern extent of the planning area). The mapped flood hazard area lies within a relative narrow (250 feet) riparian band straddling the eastern 1 ½ miles of the creek within the planning area, widening out downstream of the North Ingra Street alignment. In this lower 1-mile reach, areas on each side of the A-C Couplet overpass immediately south of Ship Creek, as well as a portion of the area surrounding the ARRC depot, fall within the 100-year flood hazard area. The Municipality of Anchorage regulates development in the flood hazard area in accordance with municipal and FEMA regulations.

Water Quality. Ship Creek is been listed by the Alaska Department of Environmental Conservation(ADEC) for water quality impairments due to fecal coliform. The listing process requires ADEC to establish Total Maximum Daily Loads (TMDL) for pollutants so that recovery plans for impaired waters can be implemented. ADEC has established a TMDL for fecal coliform which is implemented through storm water discharge permits.

Contaminated Sites. The ADEC lists 23 active contaminated sites within the planning area. In the north portion of the planning area, the contamination is most often associated with fuel storage facilities. Within the planning area along Ship Creek, there are a variety of sources, including Elmendorf Air Force Base and railroad yards on the north side of the creek and various industrial and commercial activities on the south. A remedial investigation conducted by the Alaska Railroad (ARRC) in 2008 sampled surface water and sediments in the creek and in off-channel areas along the creek adjacent to the railroad yards. The ecological risk assessment indicated no present significant or widespread risk to aquatic organism, birds, or mammals within Ship Creek. Off-channel areas were to be further evaluated during a follow-up Feasibility Study.

Storm water Runoff. There are numerous out falls that discharge storm water into receiving waters (Cook Inlet and Ship Creek) within the planning area. The planning area is served by a storm drainage system that includes piped and ditches, which are maintained by different entities, including the ARRC, the Port of Anchorage, the Municipality of Anchorage, the Department Transportation and Public Facilities and by owners of private land whose runoff discharges directly to receiving waters rather than passing through public storm drainage systems. Storm water is regulated in this area by a number of different storm water discharge permit types, all administered by the ADEC:

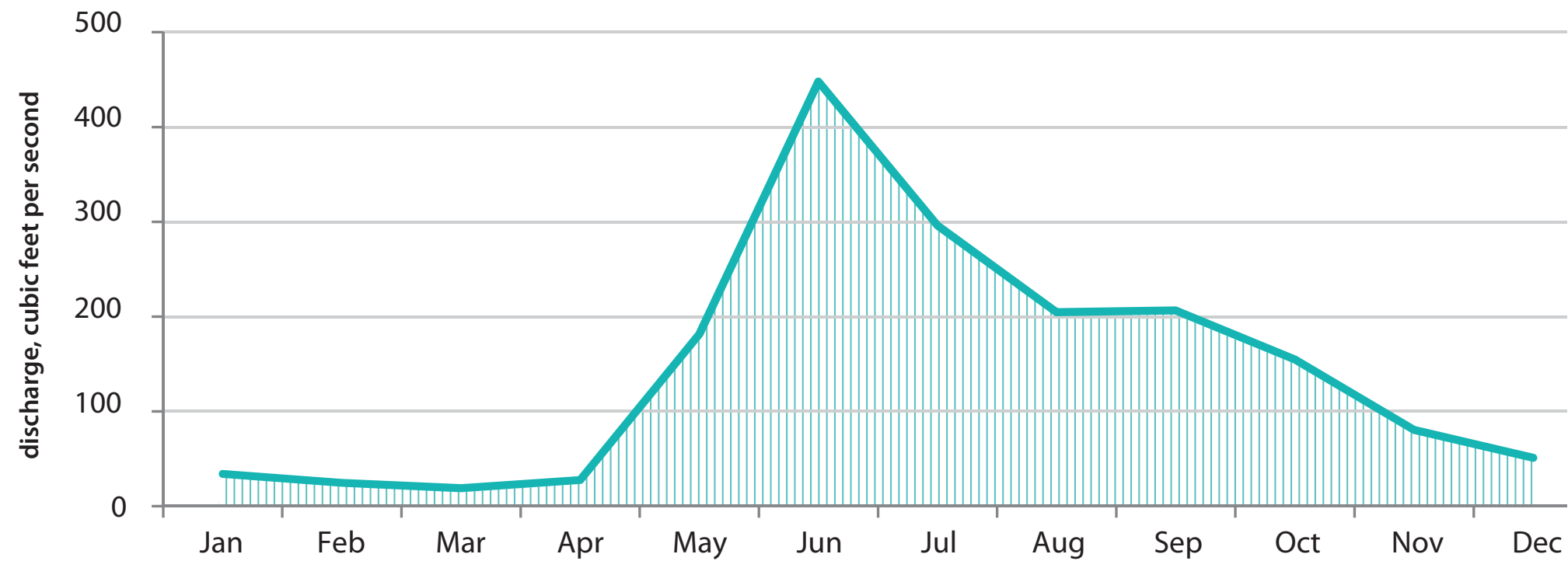
- Discharges from the Port of Anchorage are subject to an individual Municipal Separate Storm Sewer System (MS4) permit
- Discharges from the MOA and DOT&PF systems area subject to anMS4 permit issued to them as co-permittees
- Discharges from the industrial portions of ARRC’s operations and from a number of industrial sites within the planning area are permitted under ADEC’s Multi-Sector General Permit

Groundwater. This reach of Ship Creek is a gaining stream, meaning that groundwater discharges to the creek (rather than the creek losing water to groundwater). There are no drinking water supply wells within the planning area. Groundwater is used for the hatchery immediately upstream of Reeve Boulevard and AWWU operates domestic water supply wells further upstream.

Wetlands. Within the planning area, the MOA’s march 2012 Public Hearing Draft Wetlands Management Plan identifies one mapped wetland unit, referenced as Wetland Unit #2, which has been further differentiated into four segments that are all classified as “A” wetlands, totaling 3.29 acres. That plan classifies wetlands within the municipality into three classes (A, B, and C) based on their relative functional values. Activities affecting those classed as A and B wetlands are subject to



Ship Creek provides one of the world’s best known urban fisheries



Ship Creek Near Anchorage Average Annual Hydrography



Fishing at Ship Creek

individual Corps of Engineers regulatory permitting. For those wetlands classed as C, the Corps Engineers issues five regional general permits which are administered by the MOA. Within the planning, riparian wetlands are generally classed as A or B wetlands while the wetland north and south of Terminal Road are classified as B and C.

Knik Arm Tidal Environment. The US Army Engineer Research and Development Center (COE) evaluated field conditions and provided modeling of dredging and sedimentation in the wider Ship Creek area in 2010 as part of the evaluation of Port of Anchorage expansion plans. That study describes large tidal swings with a mean tidal range of 26.2 feet with a spring tide range of approximately 39 feet. This produces strong currents through Knik Arm on alternating flood and ebb flows.

Most suspended sediment is present during the spring and summer months associated with melting snowpack and glaciers. The Ship Creek area is subject to ice cover from November through March and sediment loads are reduced during that period.

Knik Arm is described in the COE study as being “dynamic” resulting in large variations in dredge volumes over time. In the summer, basin average sedimentation in August 2006 measured 1.6 inches per day. Between 1980 and 1998 annual dredge volumes at the Port of Anchorage varied between 260,000 and 390,000 cubic yards. However, in 1999 dredging volumes increased to 2 million cubic yards per year and in recent years has declined to approximately 1.3 million cubic yards per year.

Erosion is an issue with respect to currents during ebb and flow periods. The design criteria for the Port of Anchorage expansion was reported to be a maximum average of three knots. There are concerns expressed by

the COE relative to scour generated by currents and the changing floor of Knik Arm through the area.

Ice forces are also an issue with respect to the Port of Anchorage area. Ice is propelled by the tidal currents and can create stresses on any structures within Knik Arm. Ice creates problems both for propellers and from impact of floating ice and impacting berthed ships. Further, there are reports of large pans of ice pushing ships and parting mooring lines

Channel Properties

The channel of Ship Creek within the planning area has been highly altered and modified since development of the railroad began in the 1920's. This development channelized the creek on the south side of the valley and, as a result, large portions of the vegetated riparian areas were lost.

The Knik Arm Power Plant (KAPP) dam (also known as the Chugach Electric Dam) spans Ship Creek about ½ mile upstream of the mouth and divides the creek into a distinct upper and lower portion within the planning area. Although a fish ladder allows fish passage, the dam acts to limit the length of the estuary up Ship Creek, reducing the extent of salt water movement and tidal influence.

The dam provided cooling water for the power plant, which was operated by various entities from the early 1950's until it discontinued producing electricity in the mid- 1980's. Various scenarios have been proposed for the now-idle plant, including full or partial removal, alterations to enhance fish passage (such as notching or removing the weirs or constructing a bypass channel), and full-scale renovations that would bring the plant back into electrical production.

Upstream of the dam, riffle-pool complexes and riparian vegetation exist, and the stream has created meander patterns, although the creek is highly channelized and contained by riprap under the upper railroad bridge. The channel substrate consists of cobbles and gravel with few fines, reflecting the high energy of the system. Cottonwood and aspen woodland and scrub-shrub communities comprise the riparian vegetation. Stream bank stability is reduced in various places due to a number of related causes, including channelization, bank trampling, the presence of trails, dams, bridges and other crossings, and shifting of the creek channel due to sediment transport and deposition. Bank restoration efforts were carried out in 1998 and 2003 east of the A-C Couplet overpass.

Downstream of the KAPP dam, the stream channel is broad and flat and both banks are confined by riprap or concrete. Due to the high tidal range, the channel is deeply downcut into mud flats and the floodplain in

this reach is dominated by fine grained sediment. Little or no riparian vegetation is present in this reach.

Aquatic Habitat

The Alaska Department of Fish and Game (ADF&G) lists this reach of Ship Creek as waters important for anadromous fish, including coho and chinook salmon. Beaver are common above the KAPP dam. The mud flats downstream of the KAPP dam and along Cook Inlet host migrating shorebirds in the spring and fall.

In 2008, the National Oceanic and Atmospheric Administration (NOAA) listed the Cook Inlet population of beluga whales as endangered under the Endangered Species Act. In 2011, NOAA designated portions of Cook Inlet, including the mouth of Ship Creek, as critical habitat for belugas. However, the designation excluded the Port of Anchorage.

Recreation

A pedestrian and bike trail along Ship Creek from the A-C Couplet underpass to Richmond Street, east of Reeve Boulevard, was completed in the early 2000's as one of the newest links in the MOA's greenbelt and trail system.

Ship Creek is a popular urban fishery, attracting visitors and residents alike. Fishing access is provided by the Ship Creek trail, at the KAPP dam, and from several bridges, including the C Street bridge. The Municipality has begun design for the first phase of King's Landing, which will provide access to Ship Creek downstream of the C Street bridge on the south side of the creek and a platform accessible on the north side of the creek from the wood trestle bridge. Subsequent phases may include pedestrian improvements, storm drain modifications, or plaza or parking lot development in the vicinity of North C Street and the KAPP dam.

The ADF&G operates a fish hatchery immediately upstream of the eastern boundary of Reeve Boulevard. This hatchery, opened in 2011, replaced the combined production of two previous hatcheries: one that existing at this location since 1964 and one that operated 3 ½ miles upstream since 1958. Public viewing areas are provided in the hatchery building and there is a foot path outside the facility allowing access to view Ship Creek. From early July through September adult salmon can often be seen in this stretch of the creek.

At the west end of the study area, south of the mouth of Ship Creek, the Municipality maintains the Ship Creek Small Boat Harbor, which

provides boat launch facilities. The MOA conducts periodic dredging to maintain safe access. A new road to the small boat harbor is on the MOA's long-range capital improvement plan list.

Soils Analysis

The Ship Creek study area is generally composed of estuarine deposits of well sorted sands and gravels, poorly sorted sands and gravels, and low plasticity silts overlaying Bootlegger Cove Clay. The area has been highly disturbed over the years rendering a patchwork of imported soils of varying quality, depending on the specific area of interest. The estuarine deposits range in thickness from five to thirty feet or greater.

The Bootlegger Cove Clay formation consists of silty clay with interbedded lenses of fines, clay, and silt. It tends to be stiff to very stiff and of low plasticity. The layer extends to an elevation of as much as approximately -200 feet MLLW.

Seismic Analysis

The “Downtown Anchorage Seismic Risk Assessment & Land Use Regulations to Mitigate Seismic Risk” was prepared for the Municipality of Anchorage and the Geotechnical Advisory Commission to address future development proposals in the Anchorage Central Business District. Though the study area extends to only the main passenger line of the ARRC, the mapping and recommendations do illustrate seismic zones within most of the Ship Creek Redevelopment Plan area including the full study area of the Plan.

The study area includes lands that range from low to very high and some very high seismic risk. Most land within the Plan area in the Ship Creek basin bottomlands are of low-moderate to moderate risk seismic zones (zones 2 and 3). Lands that are at or near the bluffs range from high to very high risk (zones 4 and 5), with those areas east of A Street and west of F Street, along the south bluff of Ship Creek, being of very high seismic risk.

The Risk Study recommends that an overlay be provided to minimize development in areas with “Very High Vulnerability and High Vulnerability”. It proposes to restrict emergency service providers, occupancies generating potentially high demand for emergency services, and very high and high vulnerability buildings such as large offices, large hotels, and certain types of construction of large multifamily residential occupancies.

The Risk Study also identifies appropriate structural design to address

the seismic issues within the area. It recommends that large offices or large hotels in zone 4 not use concrete moment frame high rise or concrete sheer wall high rise construction. This would apply to much of the proposed development on the western end of study area, particularly applying to the area shown as fill into the tidelands.

The study area includes tidelands west of the current Knik Arm Shoreline. The Port of Anchorage Intermodal Expansion Project identified seismic issues for construction in “reclaimed” areas that would be used for the port and it would be appropriate to assume those provisions might be appropriate for fill for the project that would extend into the tidelands. The port study identified loose granular fills and estuarine deposits near the surface that are assumed to “undergo partial liquefaction during seismic loading. The development of excess pore water pressure will cause shear strength degradation.”

Seismic parameters used for the 15% design for the Port of Anchorage Intermodal Expansion Project include:

- Peak Ground acceleration at the ground surface
- Operating level earthquake seismic event (72 year return period): PGA = 0.17g
- Contingency level earthquake seismic event (475 year return period): PGA = 0.31g
- Maximum considered earthquake seismic event (2,475 year return period): PGA = 0.39g
- Seismic lateral coefficient: $k_h = 0.5 \cdot PGA$



Existing view looking south from Government Hill

An area at the south bluff that was subject to sliding during the 1964 Great Alaska Earthquake was subject to restrictions established by the Alaska State Housing Authority as part of an Urban Renewal Study completed following the 1964 earthquake. Development restrictions were imposed concerning building height and weight, and limits regarding cut and fill. Covenants were placed on the land though these expired in 2005. Regardless, the Municipality of Anchorage has restricted development of the area with no development allowed to impose loading at the head or elsewhere in the buttress area.

View shed Analysis

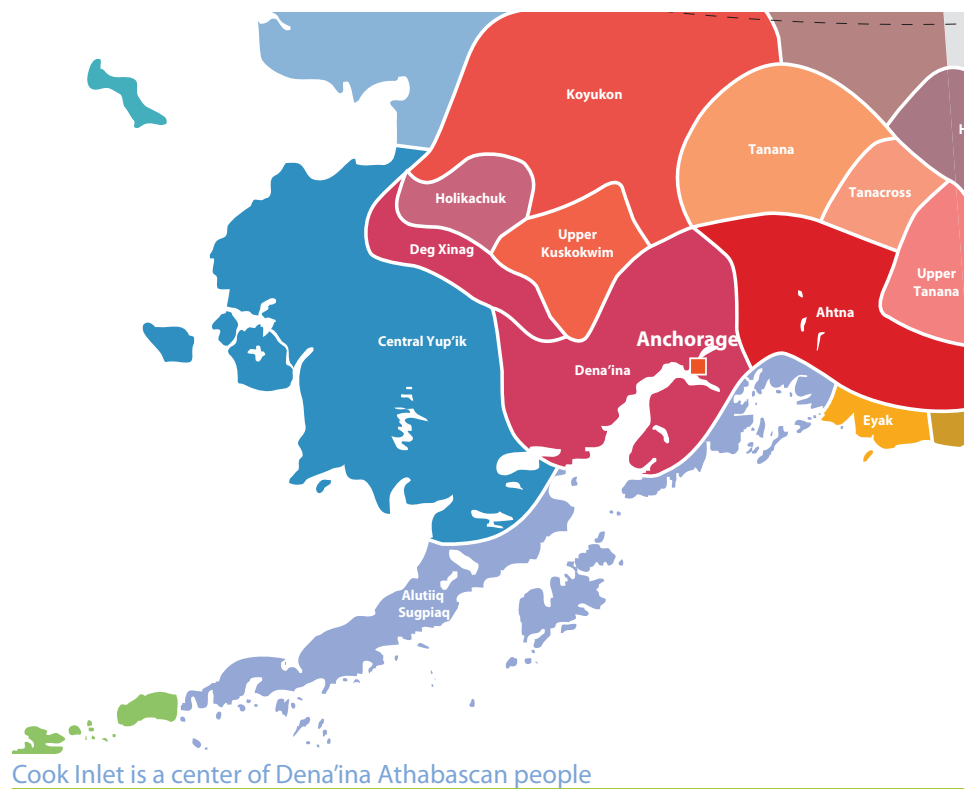
The Planning and Zoning Commission and the Assembly hearings for AO 2006-046 required careful consideration of the impacts of new structures on views from the Anchorage Central Business District. The primary views of concern were those in the Anchorage Central Business District from the south bluff overlooking Ship Creek, looking to the north towards Denali. As a result, the ordinance language restricted heights to 120 feet above MSL by right and 150 feet above MSL via conditional use approval, for those areas between H Street (extended) and Cordova Street (extended). Outside of that area (west of H Street extended and east of Cordova Street extended) buildings are restricted to a height of 85 feet by right and 120 feet by conditional use approval. As an example of what would be allowed, the following graphic illustrates what the Historic Rail Depot would look like from different vantage points if the top of the structure were 120 feet above MSL.



Simulation of south view- 120 foot high building



Alaska Railroad Depot, 1930



Cook Inlet is a center of Dena'ina Athabaskan people

2.5 HISTORIC AND CULTURAL

Historic Buildings, Places, Systems

The 2013 Historic Preservation Plan (HPP) for Anchorage's Four Original Neighborhoods, including the Ship Creek Area, is a tool for empowering the Municipality to create stronger historic preservation policy at the local level, while supporting the goals identified in the State Historic Preservation Plan.

The HPP highlights specific known historical buildings within the Ship Creek area that were documented within a Ship Creek Architectural Survey conducted by Anchorage Historic Properties, Inc. (AHPI) in 1989.

AHPI identified eight age eligible buildings that were highly significant, and recommended these buildings for listing in the National Register of Historic Places. The Ship Creek Architectural Survey also recommended that a railroad warehouse district be formed along Warehouse Avenue just east of C Street, including the Freight Depot on First Avenue (period of significance 1916-1950). However, the railroad properties and district recommended by AHPI were never formally listed in the National Register, and many of these buildings are no longer extant today.

The Anchorage Depot (Alaska Railroad Depot) was identified as a significant building in 1989. It is currently owned by the railroad and maintained in accordance with a Building Preservation Plan prepared in 2011. The Freight Depot was identified as a significant building in 1989. It was recently renovated, and is Alaska's first historic building certified under the U.S. Green Building Council's Leadership Energy and Environmental Design (LEED) program. Three other buildings identified in the 1989 survey still exist, but may not be feasible to preserve if they are found to be functionally obsolete or are unable to meet the Alaska Railroad's safety and program requirements: AEC Power Plant (Anchorage Railroad Yard), Warehouse 3, and Engine Repair Shop.

Two buildings identified in the 1989 survey are no longer owned by the railroad: AEC Cold Storage Facility (Warehouse Avenue) and B&B Carpenter Shop (Whitney Road). Three buildings identified in the 1989 survey have since been demolished: W.J. Boudreau Co. (222 Warehouse Avenue), Emmard Cannery (658 Ocean Dock Road), and Anchorage Section House (Whitney Road).

Alaska Native Group History

The Ship Creek planning area is located in the traditional subsistence use area of the Knik and Eklutna tribes. Ship Creek was called Dgheyaytnu, or 'Stickleback Creek' by the Dena'ina Athabaskan people

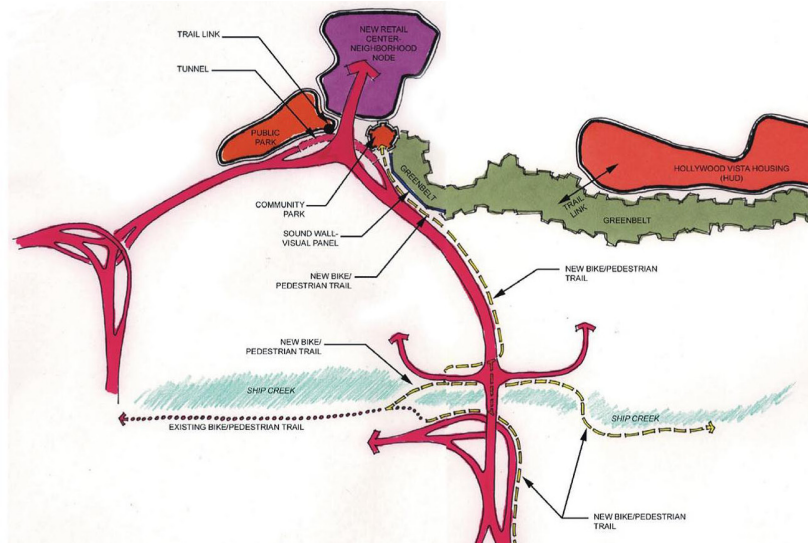
who lived in Upper Cook Inlet. Ship Creek was specifically the site of a fish camp, cemetery and winter village with cache pits and trails spread across the landscape. The following section about the history of the Dena'ina Athabaskan people from prehistory to the present was written by the Cultural and Education Department of the Knik Tribal Council, and is taken directly from the [Historic Preservation Plan for Anchorage's Four Original Neighborhoods](#) (pp 66-71).

The Dena'ina Athabaskan people are the indigenous people of Tikahtnu (Cook Inlet) area and southcentral Alaska. There are four distinct dialects of Dena'ina; Upper Tikahtnu, Outer Tikahtnu, Lakes region, and Interior (middle Kuskokwim; near the Stony River). The lands and waters of Upper Tikahtnu: Anchorage, Eklutna, Knik, Wasilla, Palmer, Girdwood, and Chickaloon lie within Dena'ina Etna (Dena'ina Country). Specifically, it is home to the K'enaht'ana, the indigenous people of Nuti (Knik Arm), who today are members of Eklutna (Idlughet) and Knik (K'enahtnu) Tribes.

Around 2,000 years ago the Dena'ina Athabascans were a thriving culture in Tikahtnu. Protected by the Chugach and Talkeetna Mountains and the great Alaska Range, they fished, hunted, trapped and gathered wild plants in and around numerous glacially fed rivers, streams and lakes. By the time the British and Russians came ashore in Outer Tikahtnu during the late 1700's the Dena'ina were already a dynamic, a socially complex, and wide-spread people, with a matrilineal clan system. Their language "is one of the most complex languages in the world. It's harder than differential calculus."

The Dena'ina Athabascans transitioned from nomadic people following the seasonal cycles of migratory games, to becoming a semi-sedentary people, taking advantage of the abundant resources in the rich Matanuska-Susitna Valley. They established many villages in Upper Tikahtnu area: winter quarters were near the confluence of a lake with a river or stream for fresh water and fish; fish camps in the spring and fall were often located on the coast, at the mouth of a river; the Dena'ina took advantage of salmon runs from the ocean; and hunting camps in the mountains; the men often established observation points for locating large game and sometimes people from other clans and tribes while the women collected berries and small game. Their villages, composed of small hamlets, were generally clustered around the numerous lakes, rivers and streams that cover the landscape. During pre-contact, the estimated population for the Dena'ina Athabaskan in Tikahtnu was about 3,000-5,000.

In 1915, the Federal government started to build a railroad that cut straight through the Dena'ina territory into the interior of Alaska. Anchorage was selected as the headquarters. Many Dena'ina helped



Accommodation of Bicycle and Pedestrians in the preferred plan

build the railroad, especially during the time between World War I and World War II. In 1918, a large influx of railroad workers brought with them a fatal influenza epidemic. This epidemic hit South-central Alaska especially hard and as a result, almost 50% of the Dena'ina people perished in a short period of time; the second viral epidemic to devastate the Dena'ina. The Dena'ina that survived watched as their traditional homeland slowly became engulfed and expropriated by an ever-increasing number of newcomers. With the "founding" of Anchorage in 1915, and with the two military installations built during World War II, in addition to public and private development, the dwindling Dena'ina became enveloped in modern Western culture.

Factors that decimated the Dena'ina were primarily diseases, in addition to the encroachment and colonization of their traditional territory, and loss of traditional hunting and fishing rights. Although having to endure hardships over the past 200+ years, the Dena'ina people still have a strong sense of traditional values and responsibility. The Tribes are tirelessly working to rejuvenate their Dena'ina tribal identity. Working through the federally recognized tribal governments and village/regional corporations, the Dena'ina people are continuously working to assert their tribal sovereignty. Currently, in 2011, approximately 400 people are enrolled as original descendants of the Knik Tribe, together with members of the Native Village of Eklutna. It is but a small increase from the 1880 Russian census, but a dramatic decrease from pre-contact population, which were estimated to be 3,000-5,000 Dena'ina in Tikahtnu.

2.6 TRANSPORTATION

2035 Metropolitan Transportation Plan

Following are proposals for improvements as proposed in the 2035 Metropolitan Transportation Plan.

Knik Arm Crossing

The portion of the project that intersects the Ship Creek and Government Hill areas would include a 4-lane extension of the Ingra-Gambell couplet on the viaduct over Ship Creek and would tie into the 6-lane Government Hill cut-and-cover tunnel proposed by the KABATA project. After completion of construction the connection would be classified as an NHS Intermodal Connector.

Commuter Rail Service

The Alaska Railroad mainline runs from Ship Creek to Wasilla and provides the prospect of a commuter rail option from the Mat-Su Valley to Downtown Anchorage. Commuter rail service between Wasilla and Anchorage is projected to have between 900 and 1,600 users per day by 2020.

Non-Motorized Transportation Projects

Following are other miscellaneous non-motorized projects that have been proposed.

Knik Arm Ferry Service – Anchorage Terminal: Ship Creek Area

Coastal Trail: Connection to Ship Creek Trail. Separated pathway linking Coastal Trail to Ship Creek Trail

Ship Creek Trail: Glenn Hwy to Tyson School. Separated Pathway.

Road Projects

Glenn Hwy HOV Lane – Boniface Pkwy to Artillery Rd Interchange.
Includes Ship Creek bridge improvements.

C St/Ocean Dock Rd Access Ramp: C St. Viaduct to Ocean Dock Rd.
Reconstruct the ramp at Ship Creek.

Ingra-Gambell Couplet Extension-3rd Ave to Whitney Rd: 3rd Ave to Whitney Rd. Extend Ingra St/Gambell St to Ship Creek Ave and Whitney Rd.

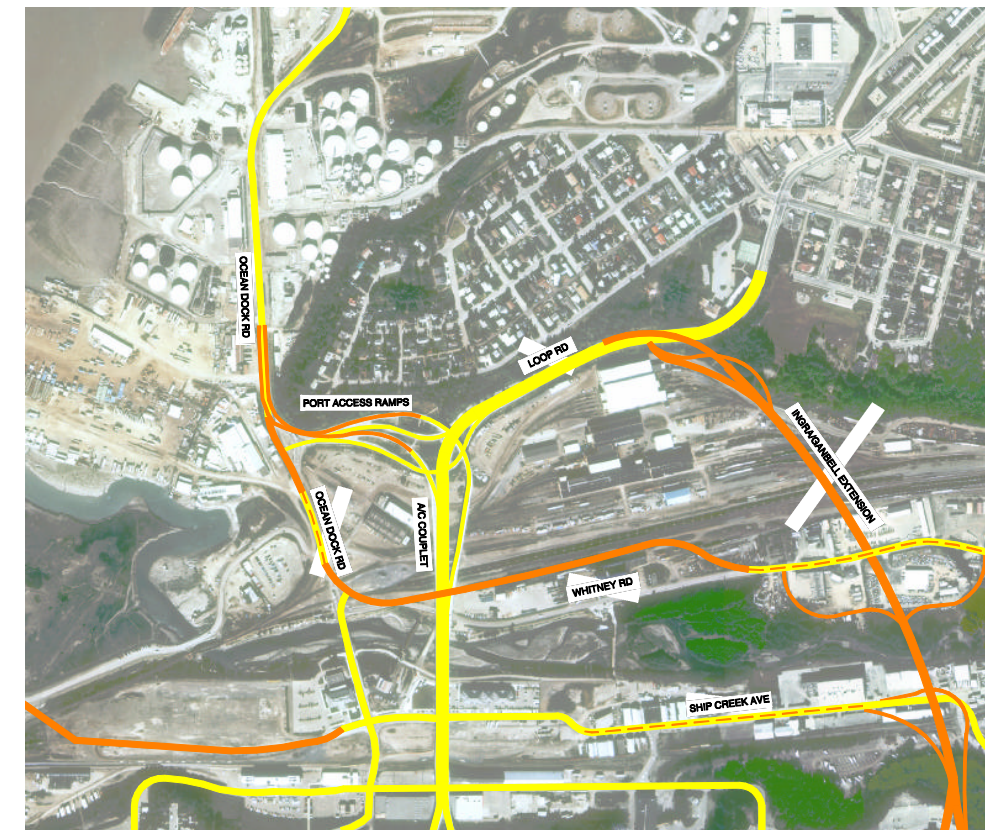
Knik Arm Crossing Phase II: Ingra-Gambell Couplet Connection. Add new connection from Government Hill tunnel to Ingra-Gambell Couplet over Ship Creek.

There are a number of plans that address the full spectrum of transportation facilities within the Ship Creek area

Multi-Modal Facility Studies and Transit Plans

Ship Creek Multi-Modal Transportation Plan

- This plan provides specific guidance with respect to transportation issues and facilities.
- The Ingra/Gambell couplet will be a four-lane facility across the rail yards to connect with Loop Road. The extension will include access to Ship Creek Avenue and Whitney Avenue. It will also provide a separated pedestrian/bicycle path to provide ease of access from government hill to downtown.
- There will be direct access from the Port of Anchorage to the A/C couplet through a series of elevated ramps that cross over Ocean Dock Rd/Port Access ramps intersection. These new ramps will connect the existing port access ramps and a point north of the existing intersection of Ocean Dock Road/Port Access Ramps on Ocean Dock Road.



Preferred transportation solutions for Ship Creek are shown in orange
Source: Ship Creek Multi-Modal Transportation Plan, December 2000

- Whitney Road will be realigned north to be further removed from the north bank of Ship Creek. The realignment along with the construction of an elevated timber boardwalk along the bank of the creek will enhance recreational access for the area.
- Christensen Drive will be widened from 3rd to 1st Avenues and will include sidewalks and pedestrian amenities.
- Sidewalks and other pedestrian amenities will be constructed between the ARRC Depot and Ship Creek.
- The Ship Creek Trail exists from the Dam to Tyson Elementary School in Mountain View. It will also include an extension of the trail from North C Street Bridge to Government Hill.
- The Tony Knowles Coastal Trail will be extended from 2nd Avenue to Ship Creek Point. The project will also include a connection leading to Government Hill.
- If ARRC develops a commuter rail from Wasilla to Ship Creek, an intermodal transit facility will be developed within Ship Creek to serve commuter passengers. A covered pedestrian overpass will also be needed to connect the transit facility to 3rd avenue.
- As part of a Fisheries Center project, a walkway with fishing access ramps, lighting, and other amenities will be constructed along the south bank of Ship Creek between the ARRC Bridge and North C Street.
- A two-lane extension of Ship Creek Avenue will be constructed from the ARRC Headquarters building to Ship Creek Point. It will also include an at-grade railroad crossing with signal and crossing grate, tour bus loading on wide shoulders, landscaping, lighting, and other amenities.
- A new bus route will be established that will connect the major downtown to the new ARRC intermodal transit facility.

Nearhood Connectivity Analysis

Connectivity of possible development within the Ship Creek area to adjacent neighborhoods is critical to any project's success. The area is separated from other neighborhoods by a combination of slopes, distance, freight traffic and railroad tracks.

There are three Municipal plans that address neighborhood connectivity; The Area wide Trails Plan, the Anchorage Bicycle Plan, and the Anchorage Pedestrian Plan. Together these plans comprise the Non-Motorized element of the Comprehensive Plan

Areawide Trails Plan

The Areawide Trails Plan provides for a network of trails that help connect Government Hill, through the Ship Creek area, and to the Anchorage Downtown and to the Ship Creek Trail. It calls for a "multi-use paved trail" For this trail, generally following the bluff of Government Hill, crossing the Port of Anchorage access road via a grade separated crossing, and then crossing through the northwestern industrial area, to Ship Creek Landing, and then to the Ship Creek Trail. This would connect the Ship Creek Trail to the Tony Knowles Coastal Trail via a grade separated crossing. It also calls for a multi-use paved trail along 1st Avenue, connecting to the Tony Knowles Coastal Trail at 2nd Avenue.

Anchorage Bicycle Plan

The Anchorage Bicycle Plan seeks to expand the bicycle infrastructure and the use of bicycles for transportation. Within the study area, it recognizes Ship Creek as one of Anchorage's premier trails and highlights that it misses a key connection to the Tony Knowles Coastal Trail. The "Proposed Bicycle Network" calls for a connection of the two trails, as well as "shared use roadway" along Christensen Drive, 1st Avenue, and Ocean Dock Road and a shared use connection from Cordova Street to the Ship Creek Trail.

Anchorage Pedestrian Plan

The Anchorage Pedestrian Plan addresses provision of suitable pedestrian environments. While the plan documents numbers of pedestrian/vehicle accidents in Downtown Anchorage, it reports only one incident in the Ship Creek area, on the A/C Bridge. According to the document, residents of Government Hill are very concerned about safety on the bridge and wish to have a better connection to the Anchorage Downtown from their neighborhood. There are no specific projects listed in the Plan that would address this issue and there are no projects that are located in the Ship Creek study area.

Railroad Plans and Track Usage

ARRC Ship Creek Intermodal Transportation Center

ARRC is pursuing an Intermodal Transportation Center (ITC) and associated pedestrian improvements in the Ship Creek area. The purpose of the facility is to connect various transportation modes to meet passenger transit needs. It will also serve as a safe and efficient way to connect downtown Anchorage and the Ship Creek area. Project components include: An Intermodal Transportation Center with



Model of Intermodal Transportation Facility

baggage and passenger service, boarding zones, arrival and departure zones, platforms, signage and security, along with retail and office space; Pedestrian connections between ITC and Anchorage downtown, and between Ship Creek and 2nd Avenue; and public parking improvements and expansions.

- The project will accommodate an estimated 3% annual growth in rail mass transit over the next 30 years. Projected rail traffic increases would require multiple trains on the platform, and construction of additional tracks and platforms.
- Long-term projections consider increased train activity via shuttle service from downtown to the Ted Stevens Anchorage International Airport (TSAIA), where ARRC's rail station opened in May 2003. By 2030, up to 60 trains may depart/ arrive from the Ship Creek ITC per day — 10 trains would run in the critical morning time frame. This figure includes the shuttle service between TSAIA and downtown Anchorage, trains running between Anchorage and Seward, and between Anchorage and Whittier. The long-term shuttle service projection assumes 30- minute headways (4 trains/hour), 12 hours per day.
- Long-term projections also anticipate increased rail activity from development of commuter rail service to the Mat-Su Valley. By 2024, such service may handle 40,000 passengers / week, translating into



Port of Anchorage

- an additional 1,000 commuters per day moving through the depot. The morning commuter period alone may include four train arrivals /departures between 7:00-9:00 a.m.
- The project takes into account other impacts from commuter service, including the need for parking for commuters that drive a vehicle into Anchorage at the beginning of the week, commute via train throughout the week, then drive their vehicle home at the end of the work week.
 - The project recognizes that the current depot was designed as a train passenger waiting area, and is ill-equipped to interface with other modes of transportation. Project infrastructure will accommodate pedestrian and vehicle traffic circulation and efficient intermodal transfers.

2.7 FREIGHT MOBILITY-PORT AND RAIL

Downtown Truck Routes

Current truck routes allow double load trucks access to and from the port to the rest of the city via Ocean Dock Rd and Whitney Rd. Several alternative routes are available from Whitney road to access downtown and the Glenn Highway. Access to downtown is available via Post Rd which connects to 3rd Avenue. The Glenn Highway is accessible through Post Rd which connects to Reeve Blvd. and connects to 5th Avenue. Single load trucks have the same access to and from the port as double load trucks, but also have the option of accessing downtown via the ship creek bridge.

Port of Anchorage

Due to expansion of commercial trade through Anchorage, future port expansion will have to accommodate 3,000 unit container vessels and provide wider and faster cranes for container handling. Improved transportation links will be needed between the port and freight destinations in order to distribute goods more efficiently to the city and the rest of the state. The Anchorage Intermodal Expansion Project will provide a new connection near Ingra-Gambell streets as a couplet and ramps that will connect to a proposed freeway that would tie together the Glenn and Seward highways. The expansion and freeway connections would improve efficiency of regional freight distribution from the Port of Anchorage to the north and south.

AMATS Freight Mobility Study

The following Long Term Capital Improvements for Ship Creek 2005-2020 are contained in the AMATS Freight Mobility Study:

Freight Terminal

One consideration that has been considered and described within this plan to enhance freight mobility would be a consolidated freight terminal in the Ship Creek Area in conjunction with the ARRC-Trailer on Flat Car (TOFC) facility. This would also require a relocation of Whitney Avenue and development of an alternative Ingra/Gambell route.

Ocean Dock Road

Currently, Ocean Dock Road has limited capacity for trucks transiting from the POA to other areas. The road is crossed six times with at-grade rail tracks, is rough and narrow, with no shoulders. It is an older road and was last reconstructed in the summer of 1999. Many of the concerns for

the facility would be addressed by an improvement project, including relocating the rail lines to eliminate the multiple rail crossings of the road.

Whitney Road

Whitney Road is the major link between the POA and the ARRC as well as the industrial / warehouse district in the east Ship Creek basin. Whitney Road has limited capacity for the existing volume of freight transported over it. It is crossed a number of times with rail tracks, is rough and narrow with no shoulders. Additionally, Whitney Road parallels Ship Creek on its north bank where sport fishermen access the creek. Sports fishermen park their cars along Whitney Road and often cross the road without looking for opposing traffic. Whitney Road is designated as a Commercial / Industrial Collector Class IA facility in the Official Streets and Highways Plan. The Draft ARRC Master Plan recommends reconstructing Whitney Road as well as realigning it to eliminate these conflicts.

Ship Creek Avenue

Ship Creek Avenue is an intermediate route on the south side of Ship Creek. It ties North C Street to the east Ship Creek basin and industrial and warehouses in that area. The road has poor alignment, is narrow and rough. Ship Creek Avenue is undesignated in the Official Streets and Highways Plan and considered a local street.\

1st Ave.

East 1st Ave is an intermediate route on the south side of Ship Creek. It ties North C Street to the east Ship Creek basin and industrial and warehouses in that area. The road has poor alignment and is narrow and rough. 1st Ave. is designated as a neighborhood collector Class IC facility west of North C Street in the Official Streets and Highways Plan

Post Road

Post Road links 4th Avenue and Ingra/Gambell Streets to the east Ship Creek basin industrial and warehouse district. The road is congested and has numerous driveways. It is posted at 35 miles per hour. The surface of Post Road is rough. Northbound traffic on Post Road turning west onto Whitney Road faces difficulty for a number of reasons. The sight distance may be inadequate for that turning movement. Also, large vehicles require more time to accelerate and the relatively higher speeds for traffic on Post Road cause problems. Post Road is designated as a minor arterial Class II facility in the Official Streets and Highways Plan

C Street / A Street

C Street, from its origin at the intersection with Port Access road (Ship Creek Overpass) near the POA, to its southern terminus almost eight



View from above F Street, looking towards the Anchorage port

miles to the south, is the main north/south freight route for deliveries in Anchorage. Industry estimates that approximately 80% of the freight distributed in Anchorage transits this road for some part of its length. The major concern is peak hour and intermittent congestion with overall traffic volumes at points along the street's length. Additionally, some of the traffic turns off C Street onto east/west thoroughfares is a concern for tractor-trailer traffic. C Street / A Street from 3rd Ave to O'Malley Road is a major arterial Class IIIA and IIIB for two segments in the Official Streets and Highways Plan. This facility is being reconstructed in phases. Currently, the section from Tudor Road to International Airport Road is under construction as a 6-lane section. The section from International Airport Road to Dimond Boulevard will be reconstructed as a 6-lane section in a few years and the six lane section extended to O'Malley Road in the future.

2.8 COMMUNITY FACILITIES

Public Safety Facilities

The study area lies within the jurisdiction of the Anchorage Police Department (APD). While the Port of Anchorage also has security, the Port authority does not extend to the Ship Creek study area. The ARRC also maintains a security force but their interest generally lies with the protection of railroad property, not with common property or person on person crime. The nearest APD substation is located at Fire Station #1, located at 122 East 4th Avenue. APD maintains officers on foot or bicycle during the summer months in the Anchorage Central Business District but that coverage does not extend to the Ship Creek area in general.

The nearest Anchorage Fire Department (AFD) facility, Fire Station #1, is located between 4th and 5th Avenues, east of A Street. AFD provides fire suppression as well as Basic Life Support, Emergency Medical Technicians, and Advanced Life Support care and transport. Fire Station #1 provides two fire engines, a truck, and a medic vehicle.

The Anchorage Correctional Facility is located east and south of the study area, at 1400 East 4th Avenue. The facility is part of the State of Alaska Department of Corrections and addresses pre-trial detainees as well as those convicted of crimes.

Homeless Shelters and Services

Brother Francis Shelter, located at 1021 East 3rd Avenue provides shelter for the homeless on a non-permanent basis, with the goal of moving the residents towards self-sufficiency. The shelter is a mission of Catholic Social Services and served 3,356 people in 2012, providing 73,755 meals and 85,058 nights of shelter.

Catholic Social Services is located at 225 Cordova, just south of the study area, and offers many other services beyond Brother Francis Shelter, including homes for homeless youth, and abused women, as well as a food pantry. These services are located throughout Anchorage. None of the facilities are located in the Ship Creek area.

Beans Café is located directly across from Brother Francis Shelter and provides breakfast and lunch for the needy. The facility also provides day time shelter as an alternative to the street for homeless individuals.

Universal Design/Access Plans/Opportunities

By federal law, all facilities must comply with the Americans with Disability Act Accessibility Guidelines (ADAAG, 2010). Further, all roadways must comply with the ADA Standards for Transportation Facilities, (2006). Should a transportation facility be constructed with federal funds the US Department of Transportation maintains guidelines with some exceptions and the standards that must be adhered to are the Public Rights of Way Accessibility Guidelines (PROWAG). Both the ADA Standards for Transportation Facilities and PROWAG provide specific guidance with respect to the planning and design of pedestrian facilities as well as streets and highways.

With respect to recreation facilities, constructed improvements must also comply with supplements to ADAAG that govern such things as fishing piers (2002). Thus any improvements that will be providing public access to Ship Creek for fishing must recognize those requirements. Likewise, anything that provides for public access at the boat ramps must also comply with those requirements of the recreation supplements.

Utilities

Multiple sewer, water, and gas mains and overhead and buried electrical, lighting, and communication utilities exist throughout the project area. The appendix includes utility layouts from data gathered during a previous evaluation for ARRC (DOWL Engineers, 2002) and the MOA (CH2MHill, 2002). As with the majority of Anchorage, the Anchorage Water and Wastewater Utility (AWWU) provide the water distribution and the wastewater collection systems. Anchorage Municipal Light and Power provides electricity and Enstar Natural Gas Company provides natural gas.

Electric Utility

Municipal Light and Power (ML&P) is the electric utility serving the Ship Creek district. ML&P has five power sub-stations within or bordering the study area, and the power distribution is well developed for the high concentration of heavy commercial and industrial service customers in the area, which include the railroad, port facilities, several bulk fuel tank farms, and the adjoining JBER and downtown Anchorage Central Business District. Electrical service for any new development project contemplated in the Ship Creek district with up to a 2000kW (2.0 MW) demand load requirement could be readily supplied from existing infrastructure; larger loads could be supplied but may require some degree of distribution system upgrade depending on the location.

ML&P’s power plant #1 with 90MW generation capacity is located in the Ship Creek district near the utility headquarters on 1st Avenue, however, most of the district power requirements are supplied from remote power plants via high voltage transmission lines into the substations from the south and east.

A private developer has proposed reactivating and modernizing the old Knik Arm Power Plant (KAPP) on Ship Creek (201 E. Whitney Road) for cogeneration with power and heat supplied to local customers, but that development has been stalled and inactive since 2010.

Water

The Ship Creek area is the northernmost portion of the Anchorage Bowl water system. Pipe sizes within the area range from under 12” services to several 16”-24” trunk mains. The area is generally well covered, except around RR tacks and to the west. Expansion to the west would require extension of service to that area.

Ship Creek Water Treatment Facility (SCWTF):

Beginning in the 1920’s, Ship Creek was the original water supply for Anchorage. Now the SCWTF provides water during summer months to meet peak demands and standby for emergencies. The facility has a treatment capacity of 14 mgd at current turbidity regulations. Water treatment at the plant uses the following processes:

- Debris removal
- Flocculation
- Sedimentation
- Filtration
- Chlorination
- Fluoridation
- Storage

Water

Water rights for the use of Ship Creek water have been issued to the U.S. Army and AWWU. These rights specify the amount of water the user has the right to draw and the ascendancy of the rights. The Alaska Department of Fish and Game (ADF&G) has applied for an in-stream flow reservation in 1989, and this application is currently in adjudication. Withdrawal of water during flows in excess of these issued rights is not regulated. The existing water rights and in-stream flow applications dictate priority uses as follows:

- The Army’s first right is for 6.4 mgd; this right supersedes AWWU’s earliest water right.
- A second U.S. Army right for 1.1 mgd has a priority date later than a portion of AWWU’s rights. The U.S. Army water right does not vary during the year.
- AWWU’s water right from Ship Creek varies seasonally and with the creek flow. The water right varies from a maximum of 24 mgd from June to October to a minimum of 10.5 mgd in January to April, as shown in Table 12.

Future AWWU Projects:

East Bluff Water Rehabilitation - Phase II: Replace 1712 LF of woodstave water pipe in Vine Avenue and welded steel water pipe in Cunningham Street using cured-in-place pipe and abandon 759 LF of water pipe south of Cunningham Street.

Alaska Railroad Anchorage Equipment Yard Water Line Rehabilitation: Rehabilitate 2000 LF of water pipe within Alaska Railroad’s equipment yard using cured-in-place.

1st Avenue Water Upgrade: Replace 400 LF of corroded water main in 1st Avenue west of Post Road.

North Sitka Drive Water Upgrade: Replace 593 LF of corroded 16-inch water main in North Sitka Street and 756 LF of corroded 8-inch water main extending west and just north of Ship Creek where it dead-ends.

Whitney Water Main: Construct a new backbone main in Whitney Road to replace an old main under the ARRC Ship Creek yard.

North Yard: Relocate backbone transmission main crossing ARRC north rail yard in conjunction with ARRC rail yard redevelopment.

ARRC Yard Transfer: Transfer ownership of the water pipes under ARRC Ship Creek rail yard to ARRC.

Sewer Lines

The Anchorage Bowl has had a sewage collection system since 1917. The collection system began with service to Ship Creek and the central business district or downtown Anchorage and expanded gradually southward as the city grew. The growing system was severely damaged during the 1964 earthquake and required quick repair to maintain service. Expansion continued after the earthquake, and major interceptors were constructed to collect sewage and deliver it to the new Asplund WWTF at Point Woronzof, built in 1972.

The Knik Interceptor basin serves the northern part of the Anchorage



Knik Arm Power Plant

Bowl, including downtown, lower Ship Creek, lower Chester Creek, and lower Fish Creek, as well as Spenard, Mountain View, and the University district. Elmendorf Air Force Base sewage is delivered to the interceptor basin through two metering stations, one at Government Hill and one at Post Road. The Ship Creek area is served by Trunk B-11 and includes sewage collected from the Mountain View area (Trunks B-12 and B-5-4). Trunk B-11 also serves Elmendorf Air Force Base.

The Ship Creek area is designated as Basin1 in AWWU sewer utility plans. Pipe sizes in the area range from 8” to a 36” trunk main. The area is generally well covered, except around RR tacks and to the west. There would need to be small size network expansion in the western portion of the study area if developed. There are not many upgrades currently planned in the area by AWWU. However, the utilities are old -- there are wooden sewers in some places. The Alaska Railroad is working on upgrading them on their property.

The Alaska Railroad Corporation (ARRC) proposes to extend the existing Anchorage Water and Wastewater Utility (AWWU) sewer system to provide sewer service to railroad parcels located on the east side of the Anchorage Railroad Reserve, south of Post Road and north of Viking Drive. Currently, most of the parcels located on the south side



The port and the Alaska Railroad have a symbiotic relationship



ARRC has recognized the importance of its lands in the urban framework

of Post Road do not have access to the sewer system, and must use private septic systems and holding tanks to process facility sewage. In coordination with a number of railroad land leaseholders, the Alaska Railroad proposes a four-phase approach to extending sewer infrastructure. The first phase would construct a connector from the existing AWWU sewer line (located on the north side of Post Road), to a proposed utility corridor located along a section of old railroad right-of-way (ROW) parallel to and south of Post Road. The ROW includes a narrow roadway — Railroad Avenue — used primarily by property owners and leaseholders. Subsequent phases would be located along this avenue. Phase Two is proposed to be constructed along Railroad Avenue from the connector, east to Sitka Street. The third phase will follow Railroad Avenue east from Sitka Street to Reeve Blvd. The fourth phase would run from the connector, west along Railroad Avenue, crossing over Post Road.

The order of Phases Two, Three and Four may be modified with future input from tenants, and other factors.

Project Benefits

Extending the sewer system will provide important utility access to approximately 30 Ship Creek area leaseholders who are not currently connected.

Providing access to the sewer system will allow some leaseholders to expand the size and scope of their facilities, as well as the diversify the their facility uses. Such expansions can equate to economic benefits including new jobs, new or increased business services, and more efficient operations.

Access to the sewer system will lower the cost of business for some leaseholders by eliminating or reducing the need to operate and maintain private septic systems.

The Alaska Railroad continues to seek ways to invest in non-operating railroad land to improve its value to potential and existing leaseholders. Railroad customers comprise a critical business segment that provides financial stability and a means for self-sustaining operations for the railroad.

Storm Drain Lines

Surface drainage in the project area is generally by sheet flow or percolation to the underlying soils. Some storm water runoff collects in the storm water drainage systems that discharge to Ship Creek. The water quality of Ship Creek is degraded as it flows from its source to its mouth. Urban runoff from storm drain out falls and industrial activity are thought to be the major contributors to the degradation.

There are three drainage systems in the Ship Creek area of downtown. These storm drain lines consist of the ARRC Line, the Covered Bridge Line, and the C Street Line. The ARRC Line includes the west parking lot of ARRC Headquarters and the area surrounding the Depot. The ARRC storm drain system consists of 8 manholes and approximately 2,020 feet of piping consisting of 12-, 18-, 24-, and 36-inch corrugated metal pipe. The ARRC line discharges directly into Ship Creek near the ARRC steel truss bridge. The Covered Bridge storm drain system runs along North C Street from West 1st Avenue to its discharge point at the banks of Ship Creek. This system consists of five manholes and approximately 1,250 feet of 36-inch corrugated metal pipe, discharges directly to Ship Creek at an outfall located between the covered bridge and wooden ARRC Bridge. The C Street storm drain system contains 11 manholes and approximately 1,475 feet of corrugated metal pipe ranging from 12-inch to 24-inch. The C Street storm drain system starts on the abandoned section of North C Street, heads east along West 1st Avenue, then continues north under the AC Bridge until it terminates at Ship Creek. The C Street line discharges to Ship Creek at an outfall located under the C Street Bridge, upstream of the covered bridge (MOA, 2002a).

2.9 DESIGN-SENSE OF PLACE

Design Context from the 2007 District Design Guidelines

Ship Creek has always been an eclectic collection of structures, owing much to the architectural style during the period of construction of any particular building. Much of the “style” of existing architecture owes to the simple economies of materials availability and urgency of the need. While some buildings maintain strong architectural design elements, such as the Historic Rail Depot, the new ARRC headquarters, and the Historic Freight Shed, other structures are clad in sheet metal, plywood, or other materials of convenience. This lends to an eclecticism that is hard to pinpoint with respect to “style”.

The 2006 District Design Guidelines offer specific guidelines fully intended to identify Ship Creek as a distinct and unique experience. It eschews any suggestion of a “quaint historic village”, reserving that treatment only for those structures that merit such treatment. In contrast to that direction, the guidelines suggest unique architecture that captures the spirit of the place, that of the mountains in the distance, the presence of Ship Creek as a strong identifying element, and of course, the presence of the railroad. The guidelines address virtually every component of design, from parking lots and sidewalks to

signage, street furniture, and architecture.

The Guidelines provide the following statements with respect to Intent language:

- Establish design principles that will ensure a quality development that is aesthetically pleasing, and that contribute to the unique character of the District;
- Maximize harmonious relationships among buildings that may contain a variety of uses and to minimize any negative impacts these uses may have on neighboring properties;
- Encourage innovative site design that provides pedestrian and vehicular circulation while connecting the buildings with “winter cities” concepts
- The Guidelines also provide the following General Policies:
- Projects should demonstrate a high standard for design, materials
- New development should reinforce pedestrian activity at the street level, present an attractive and varied profile on the skyline, and provide opportunities for artistic expressions that contribute to the unique character of the Ship Creek District.

The Guidelines encourage a strong use of pattern, form, color, and texture to achieve desired outcomes. They suggest the incorporation of art into street furniture and into other opportunities, including signage and architecture. With respect to architecture, the Guidelines encourage unique architecture, individual to each structure, as opposed to a unifying strong singular architectural theme.

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