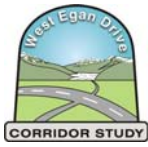


Section 5

Final Report Chapter 2 Appendix





Section 5: Final Report Chapter 2 Appendix

Technical Memo

Appendix A: Inventory of Existing Drawings, Maps, and Photos



Section 5 Final Report Chapter 2 Appendix

Chapter 2 Technical Memorandum



Technical Memorandum No. 2

Existing Physical, Environmental, and Socio-Economic Conditions

Prepared for
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June 2002

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SECTION 1

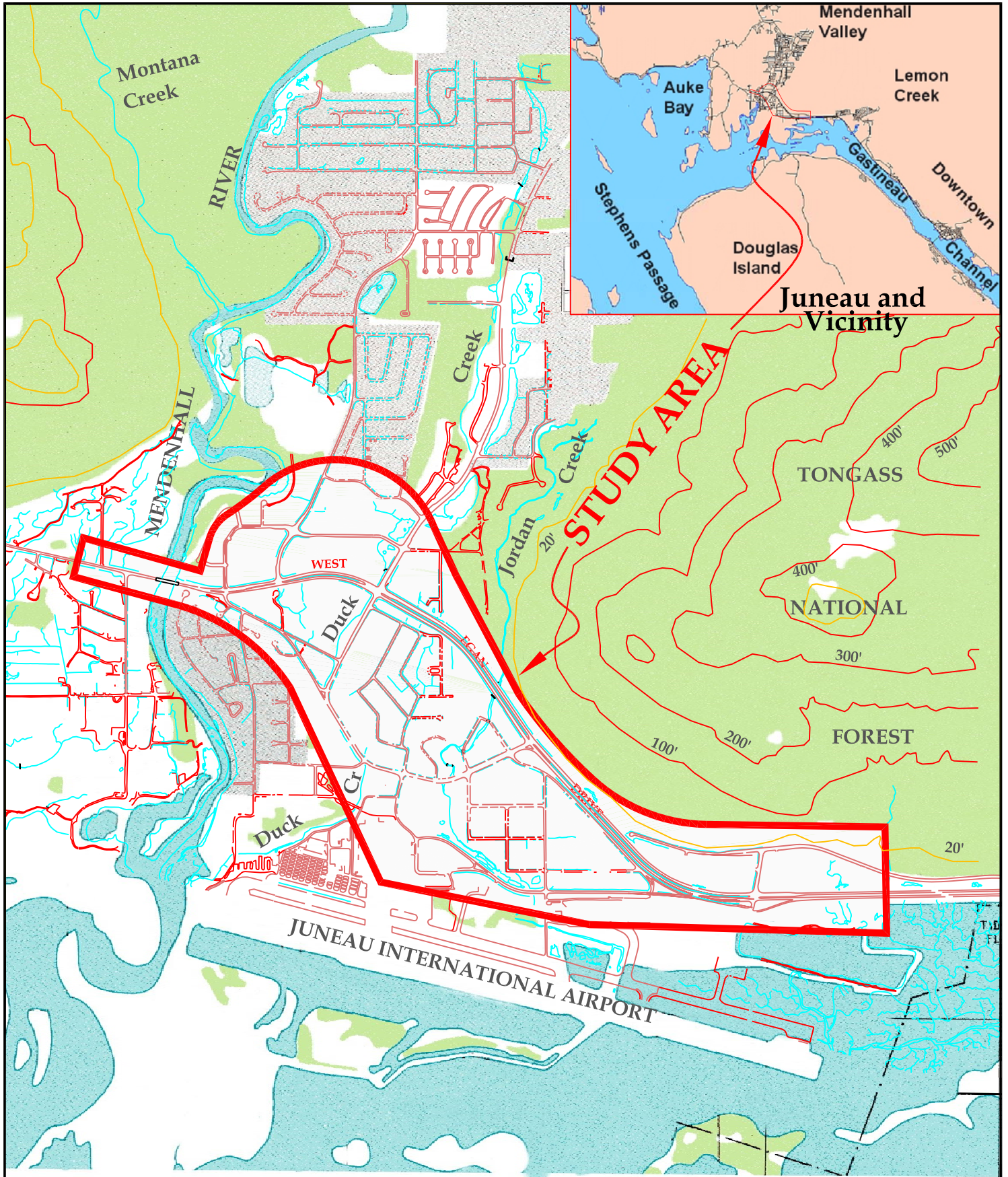
Introduction

The West Egan Drive Corridor Study (WEDCOR) project area is located in the lower end of the Mendenhall River valley (Figure 1-1) in Juneau Alaska. Most of the land in the project area has been developed, and is served by existing transportation facilities. Adjacent to or within the Egan Drive right-of-way and its associated network of intersecting streets are rivers, streams, wetlands, residences, and businesses. The purpose of Technical Memorandum No. 2 is to identify and describe environmental components of the WEDCOR project area as they currently exist, and that could be affected by alternative traffic/transportation systems developed as part of this project.

In order to identify the environmental components, various sources of information have been inventoried. Information gathering for this study consists of collecting technical drawings, maps, and photographic imagery from the Alaska Department of Transportation and Public Facilities (DOT&PF) and the City and Borough of Juneau (CBJ), conducting telephone interviews, and performing web based research. Specific inventories are listed in Appendix A, Information Inventories.

This study will result in an improvement plan for the study area. In order for the DOT&PF to carry that plan forward to design and construction of projects, an environmental document will be required. This environmental document is required by, and will be implemented according to the National Environmental Policy Act (NEPA) as currently administered by the Federal Highway Administration. The key components of the NEPA document are the “affected environment” and “environmental consequences”. This memo will focus on describing the affected environment. Environmental consequences will be described later in the study, after alternative actions are identified.

The affected environment includes both the natural environment and built environment. The natural environment description covers the physical and natural components (geology, water, and biotic communities) found within the project area. The built environment describes those aspects involved in supporting the public use of this area. The built environment includes such elements as land use, socioeconomic conditions, noise, and light emissions. Traffic and transportation systems are also considered part of the built environment, however, this element will be described in Technical Memorandum No. 3.



NO SCALE

**FIGURE 1-1
PROJECT LOCATION MAP AND AREA MAP
WEST EGAN DRIVE CORRIDOR STUDY
JUNEAU, ALASKA**

SECTION 2

Natural Environment

2.1 Land Forms (Topography) and Geology

The Mendenhall Valley and Gastineau Channel were glacially formed as the Mendenhall Glacier retreated. Much of the Mendenhall River valley contains glacial till and other glacial and river deposited sediments from the watershed. Much of the area to the south of Egan Drive, including the airport area and the eastern portion of the study area, are now or once were intertidal zones. Soils containing clay like marine deposits are common in this zone. The southern most portion of Egan Drive in the project boundaries was constructed on fill placed within this intertidal wetland. Approximately from the McNuggett intersection northwest to the Brotherhood Bridge, Egan Drive and connecting roads within the Mendenhall Valley proper were constructed on glacial till and fluvial deposits. Mapping of geologic features was published by the Department of the Interior, U.S. Geologic Survey in 1975¹, and is on file with the project records.

2.2 Hydrology

Annual precipitation in the Mendenhall valley during the last 5 years has varied between 49.5 inches in 2001 to 93.0 inches in 1998, for a five-year average of 73.2 inches. (based on National Oceanic Atmospheric Administration [NOAA] National Weather Service, Juneau Forecast Office data for Juneau Airport and other Mendenhall Valley reporting locations). Approximately 100 inches of snowfall occurs each year, however, the maritime climate of SE Alaska typically results in frequent snowmelts that limit snow buildup. Average temperatures in the winter range from the low 20s degrees F to the mid 30s degrees F. Summer temperatures range from the upper 40s to the mid 60s degree F.

According to the U.S. Geological Survey (USGS), the Mendenhall River drainage area is comprised of lakes (3 percent area), other water storage areas (3 percent), forests (8 percent area) and glaciers (66 percent area). Groundwater is an important contributor to the hydrology of the valley and its watersheds. The hydrogeology of the valley is changing, possibly due to isostatic rebound, a slow rising of the earth's surface caused by the removal of the massive weight of the retreating Mendenhall Glacier.

There are currently several regulatory floodplains described by Federal Emergency Management Agency (FEMA) maps². There is extensive data on the hydrogeology of the Mendenhall Valley. Several continuous reading stream gauges exist on the Mendenhall River, Duck Creek, and Jordan Creek. In addition, the waterways are monitored at many locations via intermittent manual stream gauge readings. A groundwater monitoring program in the Duck Creek watershed is being conducted by the USGS. The USGS published the *Hydrology, geomorphology, and flood profiles of the Mendenhall River, Juneau*

¹ SURFICIAL GEOLOGIC MAP OF THE JUNEAU URBAN AREA AND VICINITY, ALASKA, Robert D. Miller

² Consultation with Mark Miles, DOT&PF Bridge Design Hydraulics Engineer, Flood Map references on file.

Alaska in 1999³, and has performed computer modeling of the Mendenhall River. In addition, the USGS is conducting a quarterly water sampling and stream flow data gathering program in conjunction with the City and Borough of Juneau's sewer treatment facility monitoring program.

2.3 Surface Water

Three main surface water bodies lie within the project area: the Mendenhall River, Duck Creek, and Jordan Creek (Figure 2-1). The Alaska Department of Fish and Game (ADF&G) catalogues all three as anadromous fish streams.

Mendenhall River is primarily glacial fed, its source being Mendenhall Lake and Mendenhall Glacier. The river is 5 miles long from the Juneau Airport to Mendenhall Lake, with flows between approximately 100 cubic feet per second (cfs) during winter to 3,000 to 5,000 cfs at spring breakup. At the point where it flows under the Brotherhood Bridge, the river is about 250 feet wide.

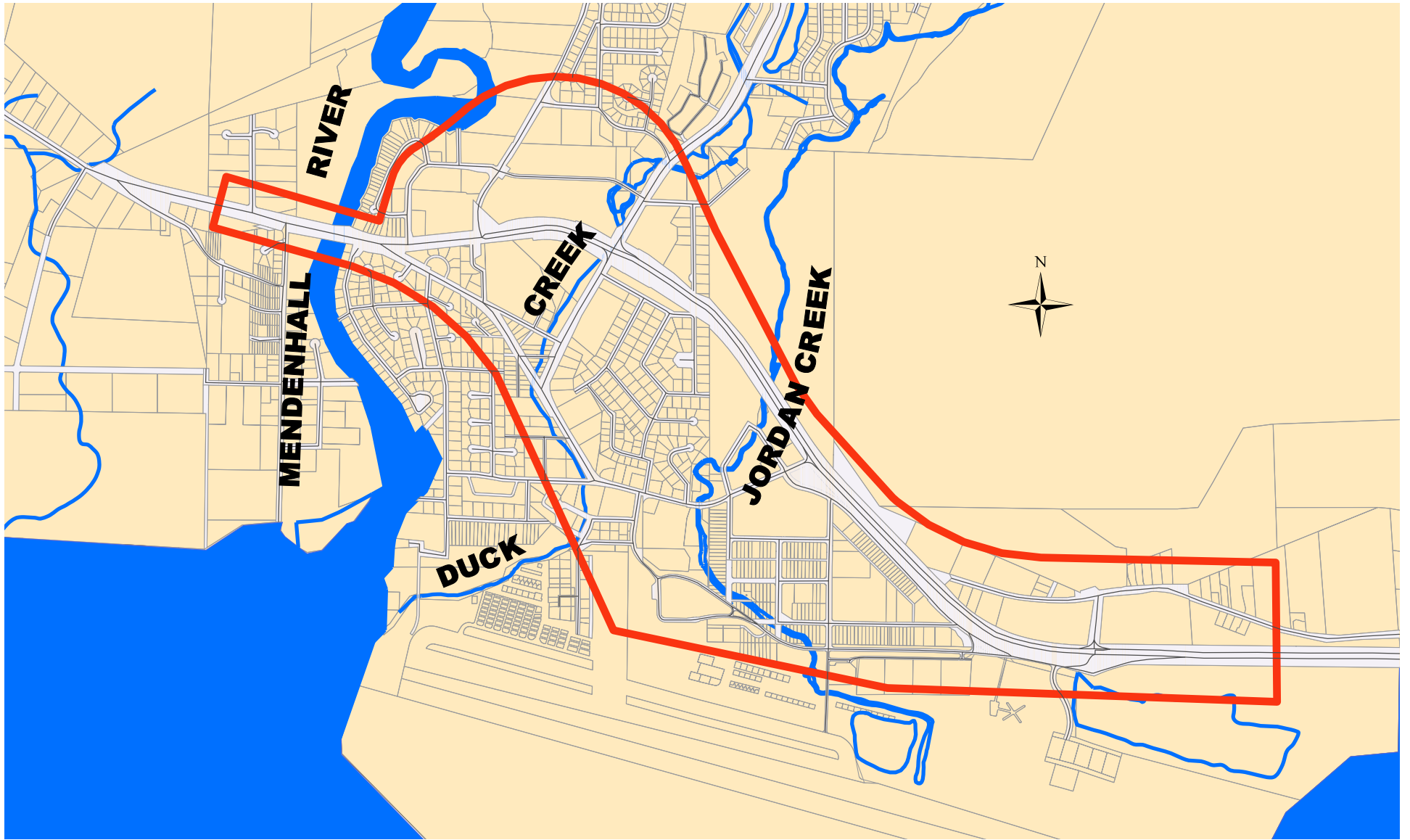
Duck Creek crosses the study area, discharging into the Mendenhall River near the Juneau International Airport (JIA), south of Egan Drive and the Mendenhall Valley sewage treatment plant. It is a spring and groundwater fed system, approximately 3.5 miles long, originates from the Dredge Lake system below the Mendenhall Glacier and Lake. It flows through the middle of the developed portion of the Mendenhall Valley and crosses Egan Drive at the eastside of the Mendenhall Mall. In the project area it ranges in size from 5 to 15 feet wide with a water depth varying from 6 inches to 2 feet⁴. In addition to springs, surface water runoff feeds the lower portions of this creek. There are many road crossings of Duck Creek with various types of culverts. Duck Creek is listed as an impaired waterway under the Clean Water Act 303(d) regulations. The pollutants for which it was so listed include turbidity, dissolved gas, residues, metals, and fecal coliform bacteria. In addition to these parameters, low water flows further diminishes the habitat value of Duck Creek.

Jordan Creek is located along the eastern border of the Mendenhall Valley at the foot of Thunder Mountain. Water sources include springs and surface discharges both from the mountains and from storm water runoff from residential neighborhoods. Jordan Creek is about 3 miles long and is a low gradient stream. Its size ranges from 5 to 20 feet wide and 4 inches to 6 feet deep³. North of Egan Drive, the stream is a relatively good salmon spawning and rearing habitat. South of Egan Drive, Jordan Creek has been channeled to allow for industrial and commercial use of the lands. The discharge point for Jordan Creek into Gastineau Channel is south of the JIA Airport. Jordan Creek is also listed under 303(d) as an impaired waterway because of sediment, debris, and low dissolved oxygen.

In 1998, citizens of Juneau founded the Mendenhall Watershed Partnership in an effort to join concerned citizens and state and federal resource agencies into a forum that can more effectively identify areas of concern and improvement plans for this important watershed. In 1993, prior to the Mendenhall Watershed Partnership, the Duck Creek Advisory Group (DCAG) was formed. DCAG is comprised primarily of local, state and federal agencies.

³ On file with project records.

⁴ Bethers, et al., 1995



NO SCALE

**FIGURE 2-1
SURFACE WATERS OF THE
MENDENHALL VALLEY**

The Duck Creek Watershed Management Plan was written to guide efforts to improve salmon habitat in this creek. In 1999, the Duck Creek Advisory Group was awarded Coastal America's National Partnership Award for its success in developing cooperative partnership programs in restoring important coastal resources. This endorsement by Coastal America helps in positioning for 206 Grants from the U.S. Army Corps of Engineers, Alaska District. Portions of the Duck Creek Plan are being implemented, as funding becomes available.

ADOT&PF is also implementing a Duck Creek enhancement project as part of the road improvements along Glacier Highway from the Egan/Nugget Mall intersection to the Egan/Mendenhall Loop Road. This ADOT&PF project is located within the WEDCOR's project area—the southwest corner of Mendenhall Loop Road and Egan Drive intersection. Under this ADOT&PF project, a stream cross-section design (by the Duck Creek Advisory Group) was used to recreate the riparian zone along a 500-foot section of Duck Creek that was moved away from Glacier Highway. In the project area the creek was narrowed and lined to improve stream flow and minimize water loss. With the additional buffer area between the road and creek and the channel work, these actions are intended to reduce water quality impacts from traffic and maintenance along Glacier Highway and improve salmonid migration success through that stretch of creek.

Transportation issues affecting surface water quality and quantity in the project area primarily relate to direct storm water runoff, snow removal, stockpiling of snow, and treatment of roads and sidewalks during winter months (plowing, deicing additives, and sanding). As project alternatives are developed and considered, specific details regarding the potential for impacts or improvements to surface water quality will be analyzed and best management practices incorporated into the alternative designs.

2.4 Biotic Communities

2.4.1 Fish

The three surface water bodies in the project area, Mendenhall River, Duck Creek, and Jordan Creek are catalogued as anadromous fish streams, important for spawning and rearing of salmon and trout species. Table 2-1 summarizes the salmonid fish species and habitat categories for the project area streams.

TABLE 2-1
WEDCOR Area Streams' Salmonid Species and Habitat Resource Quality

Stream	Species	Anadromous Fish Habitat Quality	Resident Fish Habitat Quality	Fish Barriers
Mendenhall River	Coho (Silver) salmon	Spawning – good	Spawning – good	none
	Pink salmon	Rearing – fair	Rearing – fair	
	Chum salmon			
	Sockeye (Red) salmon			
	Dolly Varden			

TABLE 2-1
WEDCOR Area Streams' Salmonid Species and Habitat Resource Quality

Stream	Species	Anadromous Fish Habitat Quality	Resident Fish Habitat Quality	Fish Barriers
Duck Creek	Cutthroat trout			
	Steelhead			
	Rainbow Trout			
	Coho (Silver) salmon	Spawning – fair	Spawning – fair	none
	Pink salmon	Rearing – poor	Rearing – poor	
	Chum salmon			
	Dolly Varden			
Jordan Creek	Cutthroat trout			
	Coho (Silver) salmon	Spawning – excellent	Spawning – excellent	none
	Pink salmon	Rearing – excellent	Rearing – excellent	
	Dolly Varden			
	Cutthroat trout			

Source: Bethers, et.al., Juneau Fish Habitat Assessment, Alaska Department of Fish and Game. June 1995

2.4.2 Wildlife

Apart from the developed portions of the project area, there are three different wildlife habitat types. All are edge habitats with little continuity. The riparian habitat along Mendenhall River and the other two small streams, edge forested habitat along roadways and developments, and various-sized wetlands along Egan Drive (Figure 2-2). Salmon returning to spawn bring raptors into the vicinity to feed; the most common is the bald eagle. Other bird species commonly found in the project area are ravens and numerous small birds residing in upland habitats along the roadways and creeks. Just outside the project boundary is the Mendenhall Wetlands State Game Refuge (MWSGR). Wildlife frequenting the MWSGR includes eagles, ravens, Canada geese, mallards, and other waterfowl as well as small mammals and fish in the ponds and intertidal channels.

Small mammals in this general vicinity include mink, river otter, moles, and shrews. Summer season brings black bears out of hibernation; however, they are very rarely seen along the highly utilized Egan Drive corridor, preferring to remain in the mountains and along upper streams and ponds feeding on berries and other natural vegetation. Juneau does have urban bears that prowl residential and commercial areas looking for food. This situation is being addressed through enforced proper garbage storage and public education. Again, the high degree of activity along Egan Drive and fences appear to keep bears from entering this major transportation corridor. Deer occasionally cross the roads in the area.

2.5 Endangered and Threatened Species/Protected Species

There are no endangered or threatened species known to exist within the project area. There are no catalogued raptor nests within the project boundaries.

2.6 Essential Fish Habitat

Proposed projects involving Federal agencies are required to undergo a review of potential effects to essential fish habitat (EFH). The National Marine Fishery Service (NMFS) is responsible for that review. Essential fish habitat is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Species managed by the North Pacific Management Council, and their prey species, are the focus of this review. These species include salmon, therefore NMFS has designated catalogued salmon streams as EFH. As discussed above, the three streams within the WEDCOR are catalogued anadromous fish streams with habitat values cited by ADF&F as fair (Duck Creek), good (Mendenhall River), and excellent (Jordan Creek).

2.7 Wetlands

A significant portion of the Juneau area is wetlands. Within a 15 square mile area encompassing the Mendenhall Valley, Auke Bay, Lemon Creek, and North Douglas, approximately 2,900 acres were classified as wetlands (excluding the 3,800 acre Mendenhall Wetlands State Game Refuge (MWSGR)).

Within the WEDCOR project boundaries there are approximately 20 wetlands of varying size and value. Table 2-2 lists available information about these wetlands. Figure 2-2 shows the existing wetlands catalogued in the project area.

Wetlands have been classified into four different management categories within the Juneau Wetlands Management Plan (February 1997) for the purpose of differentiating high value wetlands that should be protected from development (Categories A and B) from lower value wetlands where development, if necessary, is more suitable (Categories C and D). Other wetlands are classified as having enhancement potential (EP). Wetlands in this category often are manufactured wetlands (gravel quarries for example) that could be higher value if the system functioned as a natural wetland. Under General Permit 92-1 the US Army Corps of Engineers (COE) authorized CBJ to manage category C and D wetlands while retaining management responsibility over category A and B wetlands.

In the general vicinity but outside of the project area lies the MWSGR. This game refuge is managed by the Alaska Department of Fish and Game for use as wildlife and fisheries habitat, a recreation area (including hunting and fishing), and for its biological productivity, and aesthetic value. At this time, the project is not expected to affect the MWSGR.

TABLE 2-2
Project Vicinity Wetlands

Wetland ID	Management Category	Size	Description
M2	EP	28 acres	Pond created by gravel pit excavation; has enhancement potential. Is located primarily outside the project area
M3	B	13 acres	Emergent vegetation adjacent to M2; also has enhancement potential.
M5	A	3 acres	Site includes Jordan Creek; has received stream enhancement as mitigation for airport improvements.
M7	B(S&C(S))	12 acres	Emergent vegetation; eastern portion is C and western portion is B. Jordan Creek runs down the middle of this narrow wetland and is surrounded by a category A stream corridor. The eastern portion of the wetland is in the CBJ-owned Jordan Creek greenbelt.
M9	C	5 acres	Emergent vegetation
M10	C	1 acre	Emergent vegetation
M13	C	1 acre	
M14	B	3 acres	Scrub shrub wetland vegetation
M15	C	< 1 acre	Scrub shrub wetland vegetation
M17	C	2 acres	Scrub shrub wetland
M18	C	1 acre	Emergent growth wetland
M26	B	5 acres	Emergent vegetation
M49	C(S)		Duck Creek Greenbelt; Classified as C in the event that Duck Creek is relocated.
J6	B(S)	21 acres	Forested wetland surrounded by roads. Jordan Creek crosses the length of the wetland unit and is protected by a Category A stream classification
J7	B(R)&C	8 acres	Forested wetlands bordered by roads.
D6	EP		Dredge pond from Mendenhall Loop Road construction; little or no connection with Duck Creek. High potential for enhancement.
D7	B(S)	< 1 acre	Small pond, formerly a fire pond; most of the wetland is within the Category A stream corridor.
D8	B(S)	1 acre	Small pond, most of the wetland is within the Category A stream corridor.
MW-6	B	40 acres	A relatively high value wetland primarily within the CBJ Brotherhood Park
MW-60	C	5 acres	Forested wetland

TABLE 2-2
Project Vicinity Wetlands

Wetland ID	Management Category	Size	Description
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Management Categories:

A and B = higher value wetlands; least suitable for development; higher mitigation required

C and D = lower value wetlands; more suitable for development; moderate amount of mitigation required

EP = enhancement potential for wetland

S = Shoreline Corridor Rule employed in classification

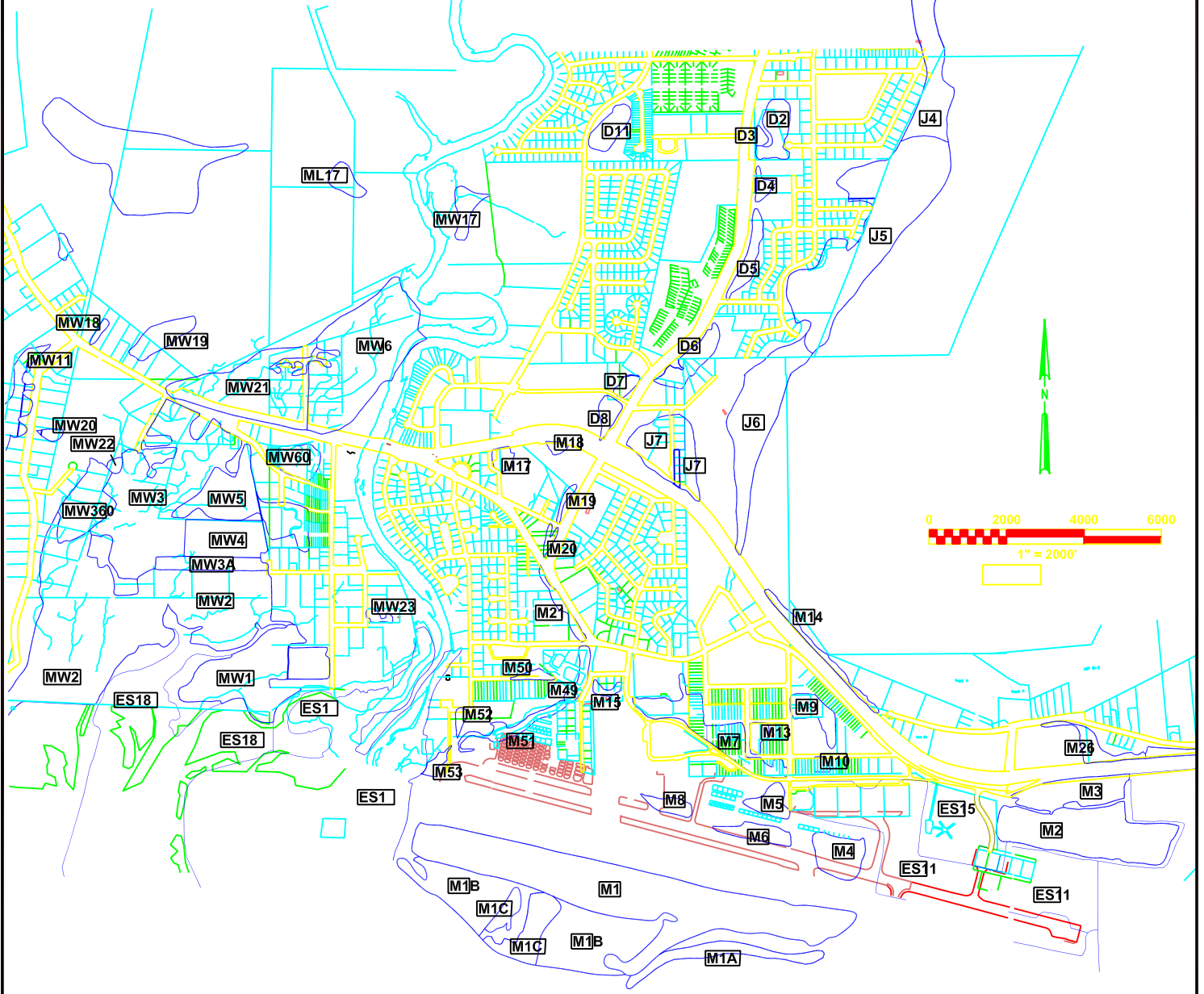
R= Residential Road Corridor Rule

Total wetland acreage for general project vicinity is approximately 150 acres

Source: Juneau Wetlands Management Plan, February 1997

WETLANDS CLASSIFICATION

A1 = C	J5 = A(r)	M10 = C	M21 = GREENBELT	MW2 = B(s)	MW20 = B(s)
A2 = LAKE	J6 = B(s)	M11 = C	M26 = B	MW3 = B(s)/C	MW21 = B(s)
D2 = EP	J7 = B(r)/C	M12 = C	M27 = B	MW3A = B	MW22 = C(s)
D3 = EP	M1 = B	M13 = C	M49 = C(s)	MW4 = B	MW23 = C
D4 = EP	M1A = B	M14 = B	M50 = C	MW5 = B/C	MW30 = B(s)
D5 = EP	M1B = B	M15 = C	M51 = C(s)	MW6 = B	MW60 = C
D6 = EP	M1C = B	M16 = C	M52 = C	MW9 = C	
D7 = B(s)	M2 = EP	M17 = C	M53 = C(s)	MW11 = B(r)/(s)	
D8 = B(s)	M3 = B	M18 = C	ML17 = C	MW17 = C	
D11 = POND	M4 = C	M19 = GREENBELT	MW1 = A/B	MW18 = C	
J1 = B(s)	M5 = A	M20 = GREENBELT		MW19 = D	
J2 = A	M6 = C				
J3 = A	M7 = B(S)/C(s)				
J4 = A	M8 = C				
	M9 = C				



**FIGURE 2-2
WETLANDS MAP
WEST EGAN DRIVE CORRIDOR STUDY
JUNEAU, ALASKA**

SECTION 3

Built Environment

3.1 Historic and Cultural Background

The Juneau area has been the home of Alaska Natives for thousands of years. The Mendenhall Wetlands and Valley were important areas for fishing, hunting, and gathering for Tlingit Indians in search of food, grasses for pot weaving, and other necessities of their life style. The first non-natives to settle here were Russian fur traders who used the area as a Russian Empire outpost. In 1867, the United States purchased Alaska and Sitka became the territorial capital. In 1906, Juneau became the territorial capital and, following statehood, retained capital city status.

In 1880, gold was found in Juneau and a large-scale immigration of Europeans to Alaska began. Dairy farms were formed within the project area at the mouths of Duck Creek and Jordan Creek to provide milk and beef for the miners and their families. This general area is not conducive to large agricultural farms, however, some fur farms and commercial vegetable gardens were productive. The airport was constructed in the 1930's. During World War II, army camps were constructed in the vicinity of Jordan Creek and the airport. Following the war and Alaska statehood (1959), the Mendenhall Valley grew to become the largest residential area in Juneau.

Glacier Highway was the original road linking downtown Juneau with the valley and points north. Egan Drive was constructed in the early to mid 1970's leaving sections of the original Glacier Highway as collectors along both sides of Egan Drive.

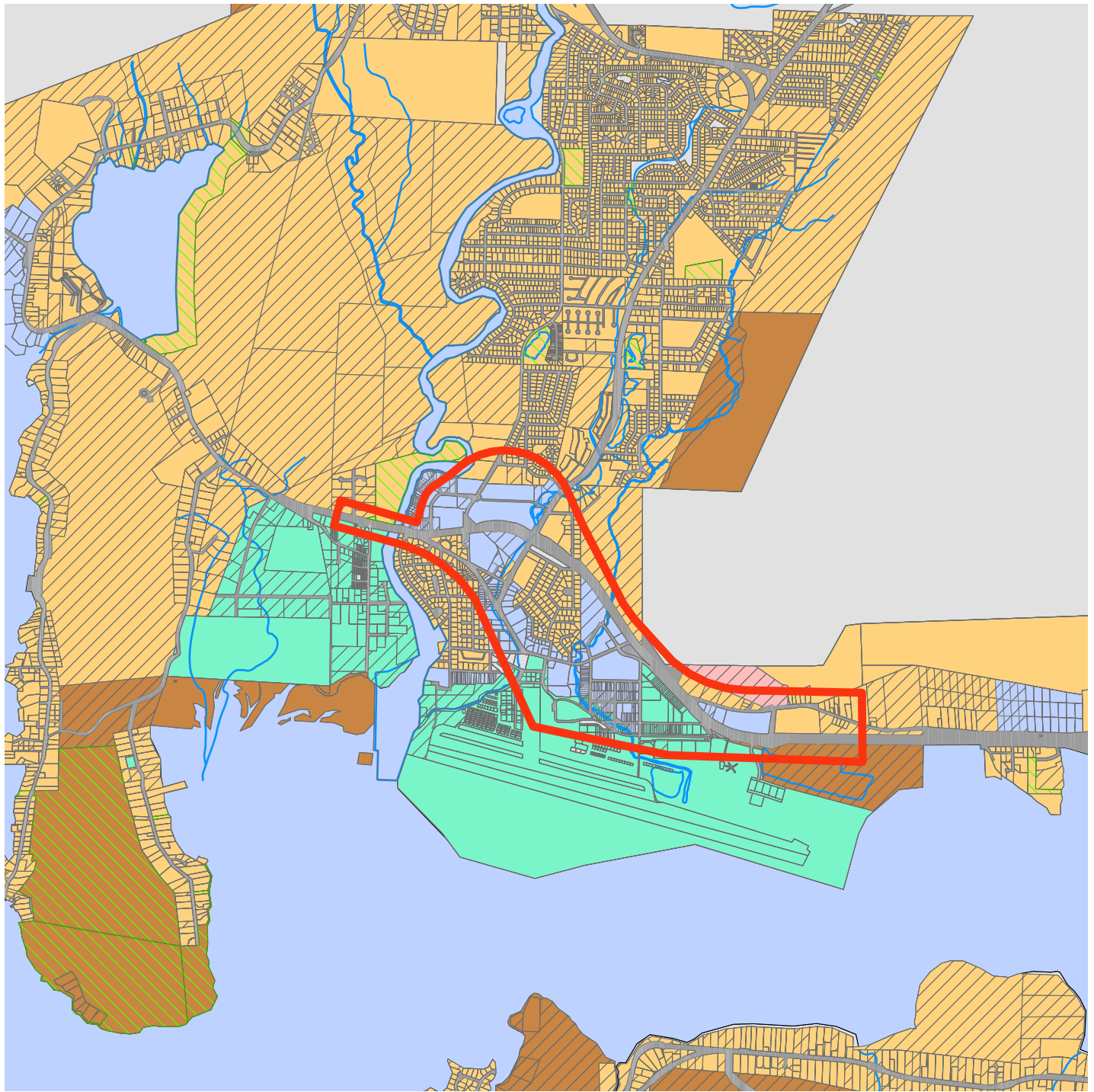
3.2 Local Government System

The City and Borough of Juneau (CBJ) encompasses more than 3,250 square miles. Ninety percent of this total area is water, rugged mountains, or glacial ice caps. Developable lands are primarily found in the Mendenhall Valley and along the water's edge of Gastineau Channel.

CBJ is governed as a home-rule municipality with a mayor working as part of a nine-member assembly. Assembly members review and oversee permits and activities pertinent to CBJ through participation on six committees including Human Resources, Lands, Public Works and Facilities, Planning and Policy, Finance, and Committee of the Whole.







3.3 Land Use

The CBJ Comprehensive Plan, revised in 1996, has designated the land uses within the Mendenhall Valley as shown in Figure 3-1. In general there are recreational, residential, and commercial lands throughout the project area.








LEGEND

ZONING:

- | | |
|---|--|
|  Residential |  Rural Reserved |
|  Commercial |  Other |
|  Industrial |  No Data |

GENERAL:

- | | |
|---|---|
|  Vacant Property |  Study Area |
|  Public ROW |  River or Stream |
|  Property Boundary |  Water Body |
| |  Park |



**FIGURE 3-1
LAND USES**

According to the Comprehensive Plan, the following land use designations have the most stringent land use controls: recreation services, stream corridors, and conservation area. A revision to the Comprehensive Plan is being considered by the CBJ Assembly that would add a stormwater management section to the plan as well as revise stream corridor land-use designations. These revisions are partly the result of work done within the Mendenhall Watershed Partnership.

The transportation corridors within the project area include the Egan Drive, Glacier Highway, Mendenhall Loop Road, Riverside Drive, and several collector or local roads including Yandukin Drive, Industrial Boulevard, and parts of old Glacier Highway.

3.4 4(f) Property

Section 4(f) of the 1966 USDOT Act* affords specific protections to parks, recreation facilities, refuges, and historic sites. Examples of 4(f) property in the project vicinity includes the Mendenhall Wetlands State Game Refuge to the south and Diamond Park to the north. Within the project area is the Pipeline Skate Park just south of Egan Drive (part of the Jackie Renninger Park), and a portion of the Mendenhall River Greenbelt/Kaxdigoowu Heen Dei. A Section 4(f) analysis will need to be performed along with environmental documentation if any 4(f) property is affected by the proposed action. (Also see Section 3.9)

- (recodified in 1983 at 49 U.S.C. 303)

3.5 Social/Socioeconomic Conditions ⁵

The West Egan Drive Corridor provides vital transportation links that impact the economy of the entire City and Borough of Juneau. Following is a general overview of economic and social conditions in Juneau. A later section will address the specifics of the study area.

3.5.1 Socioeconomic Conditions in Juneau

As Alaska's capital city, Juneau hosts the administrative and legislative centers of state government, and according to Alaska Department of Labor data, state government is the single largest employer in Juneau. Other important sectors include federal and local government, tourism (employment in tourism appears mainly in the services, retail trade, and transportation industry categories), mining, manufacturing (which includes fish processing employment), and construction. Unlike most of Southeast Alaska, Juneau's economy is not heavily dependent on the timber or fishing industries.

Juneau is a regional hub, supporting much of the 73,000 population of Southeast Alaska for at least some of their goods and services needs. Because neighboring towns have limited shopping opportunities and services available, their residents travel to Juneau to shop and use business, repair, and other services. They also travel to Juneau to obtain health care, visit friends and relatives, and participate in recreational activities such as the Gold Medal Basketball Tournament and the Alaska Folk Festival. A count of air and ferry traffic

⁵ This section provided by Southeast Strategies.

indicates that Juneau receives over 50,000 visits annually from residents of neighboring communities.

Southeast Alaska has been a popular visitor destination since John Muir first visited in 1879. As efficient and affordable forms of travel have developed, Juneau's popularity has increased. According to the Juneau Convention and Visitors Bureau, during the summer of 2000, about 740,000 visitors visited Juneau. About 640,000 came by cruise ship, 25,000 came by ferry, and 75,000 came by air. Many shops and services in Juneau support the visitor industry.

Per capita annual personal income in Juneau for 1999 (the most recent data available from the Alaska Department of Labor) was \$33,974, which was \$8,595 greater than the national average. The mining industry paid the highest wages, with a 1999 average annual salary of \$72,560. Retail trade had the lowest 2000 average annual wage, at \$18,691 (many retail trade jobs are seasonal and/or part time).

Economic Trends

The economy of Juneau is more stable than that of the region as a whole, mainly because of its lack of dependence on the timber and fisheries industries. However, because Juneau is a regional center, the economies of its neighbor communities indirectly impact the economy of Juneau. Businesses that support the fishing and timber industries, and the region in general, are experiencing some loss in business.

The economy of the state as a whole impacts Juneau because of its state government component. As the state government continues to operate on a deficit, spending and employment cuts in that industry are expected to continue. Industries that support tourism and regional visitation have boosted Juneau's economy in recent years. Despite the economic downturn in the Southeast Alaska Region, the Juneau economy is holding its own.

According to Alaska Department of Labor data, in the five years between 1995 and 2000, jobs in Juneau increased by only 7.8 percent. Much of the increase was in the mining, construction, wholesale trade and services sectors. Job losses occurred in the retail trade and the finance, insurance and real estate industries. Average annual wages have increased only 2.6 percent in those five years. The visitor industry has made its presence felt in Juneau through a 36 percent increase in reported gross business sales between 1995 and 2000 (City and Borough of Juneau Sales Tax Assessor's Office). This increase also boosted sales tax revenues to the Borough government.

The Alaska Department of Labor in its *Southeast Forecast, Alaska Economic Trends, Alaska Department of Labor*, published May 2001, reports that the services sector will continue to grow, mainly due to expansion of the health care industry and in support of the tourism industry. Also, construction employment will increase with scheduled transportation projects, a new wing on the University of Alaska, Juneau, campus, a new NOAA National Marine Fisheries Service (NMFS) facility, and other development projects. The NMFS facility will contain federal government offices and a fisheries laboratory, and will employ about 100 people when it opens in 2004.

A major uncertainty affecting Juneau's economic future continues to be the potential of a capital move. An initiative to move the legislative session to the Matanuska Susitna Valley

in Southcentral Alaska will appear on a statewide ballot in an election later this year. Provided Juneau remains the State Capital and Legislative center, its economy will remain stable, but will be strongly influenced by the fortunes of the state as a whole. Despite minor fluctuations, Juneau's economy will likely exhibit slight growth in future years. If Juneau loses its capital status, it will remain a regional center, but its economy will be more closely tied to the economy of the region, and subject to less stability and possible negative growth in future years.

3.5.2 Socioeconomic Conditions within the West Egan Drive Corridor

The West Egan Drive Corridor contains the major commercial centers in the Borough. It also serves as a through link for traveling between commercial areas and other important facilities and centers within the Borough. Although some commercial enterprises are located in other parts of the Borough, the study area is where Juneau residents, and to some extent, residents of nearby communities, purchase a many of their goods and services.

Malls within the study area include:

- Fred Meyer on the east end;
- Nugget Mall (about 47 businesses) and Airport Mall (about 21 businesses) to the south of Glacier Highway;
- Jordan Creek Mall and business condos (about 49 businesses) north across Glacier Highway from Nugget Mall (and sometimes considered part of Nugget Mall);
- Mendenhall Center (about 59 businesses) north of Egan and west of Mendenhall Loop Road; and
- Vintage Business Park (about 14 businesses) north of Egan on the west end of the study area.

In addition to these established malls, several areas within the study area contain clusters of businesses, such as the area between Glacier Highway and the Juneau International Airport, and along both sides of Glacier Highway south of Egan, including the Airport Mini Mall, and groups of professional offices (mostly medical services). The Industrial Boulevard area, although just out of the study area, also supports many Juneau businesses.

Table 3.1 shows study area businesses by business sector, and whether located in malls or in other locations within the study area. The table indicates that 41 percent of all study area businesses are services and 32 percent are retail trade.

TABLE 3-1

Study Area Businesses by Business Sector (2001 data).

Business Sector	Malls	Other Areas	Total
Agriculture, Fisheries, Forestry	1	5	6
Percent of Total Sectors	1%	3%	2%
Mining	1	0	1
Percent of Total Sectors	1%	0%	0%
Construction	3	8	11
Percent of Total Sectors	2%	4%	3%
Manufacturing	1	1	2
Percent of Total Sectors	1%	1%	1%
Transp, Comm. & Utilities	10	15	25
Percent of Total Sectors	5%	8%	7%
Wholesale trade	2	5	7
Percent of Total Sectors	1%	3%	2%
Retail Trade	70	50	120
Percent of Total Sectors	37%	28%	32%
Finance, Insur. & Real Estate	30	18	48
Percent of Total Sectors	16%	10%	13%
Services	72	79	151
Percent of Total Sectors	38%	44%	41%
TOTAL BUSINESSES	190	181	371

Sources: City and Borough of Juneau Sales Tax Assessor's database and local knowledge.
Compiled by Southeast Strategies, 2002.

Table 3-2 shows the number of businesses by business sector that are located within the study area, the entire Mendenhall Valley, and the Borough. Although most businesses within the Mendenhall Valley are not in the study area, they are directly accessed by traveling through the study area. More than half of the Borough's retail trade businesses, and finance, insurance and real estate businesses are located within the study area.

TABLE 3-2

Businesses Within the Study Area, the Mendenhall Valley, and the Juneau Borough

Business Sector	Study Area*	Mendenhall Valley*	Borough**
Agriculture, Fisheries & Forestry	6	11	11
Mining	1	1	6
Construction	11	72	134
Manufacturing	2	16	31
Transportation, Communications & Utilities	25	72	292
Wholesale Trade	7	12	32
Retail Trade – Total	120	192	221
Retail Trade - Eating & Drinking Places	24	26	66
Finance, Insurance & Real Estate (FIRE)	48	70	73
FIRE - Financial Institutions	13	13	18
Services – Total	151	328	388
Services - Hotels & Other Lodging	6	10	18
Services - Health Services	28	28	64
Services - Business Services	21	29	50
All Businesses	371	774	1,188

*CBJ Tax Assessors Data from 2001. Businesses categorize themselves for tax reporting purposes, so business category definitions are not standardized. Some businesses may not be included here because they did not report their physical addresses, or have more than one location in the Borough. Conversely, some businesses counted here may have ceased operations in the past year.

**Alaska Department of Labor data from 2000. This data counts businesses in the Borough only once, regardless of the number of locations. For example, McDonalds is only counted once, even though they have two locations – one in the study area, and one not in the study area.

Sources: City and Borough of Juneau Tax Assessor's Office, Alaska Department of Labor, and Southeast Strategies (personal knowledge). Compiled by Southeast Strategies.

Tables 3-3 shows type of business by location within the study area. The malls house about 58 percent of study area retail businesses and 62 percent of the finance, insurance and real estate businesses (35 percent are in the Jordan Creek Mall/Condos).

TABLE 3-3

Study Area Businesses by Location (2001 data).

Business Sector	Airport Mall	Jordan Creek	Mendenhall Center	Nugget Mall	Vintage Park	Other Areas	Total
Agriculture, Fisheries, Forestry	0	0	0	0	1	5	6
Percent of Total Locations	0%	0%	0%	0%	17%	83%	100%
Mining	0	0	0	0	1	0	1
Percent of Total Locations	0%	0%	0%	0%	100%	0%	100%
Construction	1	2	0	0	0	8	11
Percent of Total Locations	9%	18%	0%	0%	0%	73%	100%
Manufacturing	1	0	0	0	0	1	2
Percent of Total Locations	50%	0%	0%	0%	0%	50%	100%
Transp, Comm. & Utilities	2	0	3	3	2	15	25
Percent of Total Locations	8%	0%	12%	12%	8%	60%	100%
Wholesale trade	1	0	1	0	0	5	7
Percent of Total Locations	14%	0%	14%	0%	0%	71%	100%
Retail Trade	11	2	24	30	3	50	120
Percent of Total Locations	9%	2%	20%	25%	3%	42%	100%
Finance, Insur. & Real Estate	4	17	4	4	1	18	48
Percent of Total Locations	8%	35%	8%	8%	2%	38%	100%
Services	1	28	27	10	6	79	151
Percent of Total Locations	1%	19%	18%	7%	4%	52%	100%
TOTAL BUSINESSES	21	49	59	47	14	181	371

Sources: City and Borough of Juneau Sales Tax Assessor's database and local knowledge.
Compiled by Southeast Strategies, 2002.

Note: Jordan Creek includes the Jordan Creek Mall and the Jordan Creek Office Condominiums.

Table 3-4 presents the employment and population for selected areas within and adjacent to the study area. Although Radcliff Road and the Industrial Boulevard area are not within the boundaries of the study area, they are shown here because they are just outside those boundaries and the only access to those businesses is through the study area. The table shows that the main function of the study area is as a commercial center. Only a small percentage of the population within the Mendenhall Valley actually lives within the study area (about 558, or less than 2 percent), yet the area provides more than 1,900 jobs (about 11 percent of the jobs within the Borough).

TABLE 3-4
Employment and Population for Selected Areas In and Adjacent to the Study Area

Area	1998 Employment	1998 Population
Mendenhall Center	150	0
Fred Meyer	143	8
Airport Mall	317	60
Nugget & Jordan Malls	592	3
Vintage Park	138	0
Mall Subtotal	1,340	71
Atlin Drive	3	43
Hurlock Avenue	43	97
Travel Lodge	155	121
Ka-See-An	101	225
Old Dairy	139	0
Glacier Fire Station	48	0
Crest Street	78	1
Other Corridor Areas Subtotal	567	487
Selected Corridor Areas Total	1,907	558
Radcliff	45	631
Juneau Airport*	413	0
Industrial Blvd	1,096	87
Adjacent Areas Total	1,554	718
TOTAL SELECTED AREAS	3,461	1,276

*Juneau Airport employment figures came from "The Juneau International Airport Economic Impact Study" (McDowell Group, 2000), and represents full-year jobs in Juneau.

Sources: City and Borough of Juneau; "The Juneau international Airport Economic Impact Study", McDowell Group, 2000.

3.5.3 Traffic Movements Affecting the Socioeconomics of the Study Area

The transportation links within the West Egan Drive Corridor serve several functions in supporting the socioeconomics of the Borough. Traffic travels through the study area to reach destinations on the other side, traffic from outside the study area travels to

destinations inside the study area to shop and obtain services, and traffic within the study area moves customers between businesses or between residences and businesses.

Commerce Passing Through the Study Area

The major population center (CBJ 2001 estimate of 12,122 people) in the Borough is located in the Mendenhall Valley, of which the study area is a part. Many government and business centers are located to the southeast of this corridor. Juneau International Airport is located to the south, just outside of the study area boundaries, and the Alaska Marine Highway System ferry terminal is located to the northwest. The portions of Egan Drive and other streets passing through this study area serve as a through link for:

- residents north and west of the study area traveling to jobs, schools, shopping and entertainment in other areas of the Borough;
- Juneau residents connecting with intercommunity transportation facilities;
- visitors to Juneau connecting to business centers, shopping areas, medical services, entertainment, visitor attractions, and intercommunity transportation links;
- businesses transporting airborne freight and mail to customers throughout the Borough;
- businesses transporting waterborne freight to customers north and west of the Borough.

Commerce into and out of the Study Area

Table 3.1 indicates that over half of the Borough's retail and finance, insurance and real estate businesses are located within the study area, yet less than two percent of the Borough population lives within the study area. Juneau residents and visitors travel into the study area to obtain goods and services. In addition, commercial freight is brought into the area for retailers to sell. Residents also travel into the area to work (the area provides about 11 percent of the jobs in the Borough).

Commerce Within the Study Area

To travel between businesses within the study area, people often must cross Egan Drive. Fred Meyer, the Mendenhall Center and Vintage Park are on the north side of Egan Drive, while the Nugget, Jordan Creek and Airport Malls, Industrial Boulevard and many clustered businesses are on the south side of Egan Drive. There is some pedestrian traffic across Egan Drive for access purposes. Pedestrian traffic between businesses across Glacier Highway (Airport Area) to the south of Egan Drive is even more frequent.

Businesses that depend heavily on drop-in traffic tend to be in the retail trade sector, although some services businesses need drop-in traffic to thrive. Many of these businesses are located in malls or areas of grouped businesses, where common access to many businesses facilitates shared trips (trips that serve more than one destination). Table 3.3 indicates that 58 percent of retail businesses within the study area are located in malls. With a few exceptions, most of the businesses with independent access are destination businesses.

3.6 Transportation

Transportation issues will be addressed in Technical Memorandum No. 3.

3.7 Air Quality

The Alaska Department of Environmental Conservation has been monitoring the air quality in the Mendenhall Valley for many years. In the past, the Mendenhall Valley exceeded the health standard for particulate matter and was classified by the Environmental Protection Agency (EPA) as an air quality Non-Attainment Area for particulate matter with a size of 10 micrometers or less (PM-10). The two primary sources of particulate are road dust and wintertime wood stove emissions. Efforts by CBJ have successfully reduced the amount of PM-10 such that the Mendenhall Non-Attainment Area is now in maintenance status (ongoing monitoring).

Juneau no longer is a non-attainment area. These efforts have included road paving and wood stove use curtailment during winter-time inversions. Residential slash and garbage burning is not allowed in the Lemon Creek or Mendenhall Valley.

3.8 Recreation

Hiking and recreational trails abound in the general area. Closest to the project area are the Kaxdigoowu Heen Dei/Brotherhood Park, Airport Dike trail, Thunder Mountain trails, and the trails at the Mendenhall Glacier. In addition to hiking trails, sidewalks and multi-use paths are frequently used for exercise and recreation. There are paved pathways along Mendenhall Loop Road and sections of both sides of Egan Drive between Brotherhood Bridge and Yandukin Boulevard..

Within the project area there are the following recognized recreational/public lands:

- The Pipeline Skate Park located at 2400 Mendenhall Loop Road, just south of Egan Drive (part of the Jackie Renniger Park [Bus Barn Park]).
- A portion of the parking lot at the trail head for Kaxdigoowu Heen Dei trail
- The Mendenhall River used for rafting and other recreation

Additionally, there are multiple walking paths and trails along Jordan Creek and Duck Creek within the project area not noted on land use or trail maps.

3.9 Noise

The criteria for evaluating noise impacts that apply to projects within the study area are contained in Title 23 of the Code of Federal Regulations, Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772, 1992) and the ADOT&PF Noise Abatement Policy dated March 1996. Noise abatement could be required if a selected alternative will cause highway generated noise levels to go beyond established thresholds during the design life of the facility, and abatement is determined feasible by established

procedures. Noise policy and requirements will need to be reviewed as alternatives are developed and selected. Sensitive noise receptors will need to be identified within a proposed alternative area. These receptors typically include residences, schools, hospitals, nursing homes, churches, recreational areas, and day care facilities.

3.11 Solid Waste/Hazardous Waste

Waste Management collects solid waste within CBJ. Recycling of glass, tin, aluminum, cardboard, and newspaper is a collaborative effort involving both CBJ and Waste Management is also disposed of at Arrow Refuse. Construction debris, other solid, and domestic wastes are disposed of at the Waste Management landfill located in Lemon Creek. Outside of Mendenhall Valley and Lemon Creek, residential garbage burning is allowed.

Hazardous materials include substances regulated by EPA. Once alternatives are defined, a preliminary site assessment should be conducted to determine if there are any known Haz-Mat sources that would potentially add cost and/or liability to one or more alternatives. Just outside of the project boundaries is a site at Dimond Park Complex that was once used for land disposal of various types of wastes. It is unknown at this time if there are hazardous wastes within the study area.

Section 5 Final Report Chapter 2 Appendix

Appendix A: Inventory of Existing Drawings, Maps, and Photos



Appendix A

Information Inventories

Inventory of Existing Drawings, Maps, and Photos

Drawings from DOT&PF

Name	Size
□ Basemap.dwg	4.5mb

Aerial mapping/topo dated 5/30/90 (This drawing is the base for all of the others listed below). Xref's are inserted at 0,0,0 insertion point, 1,1,1 scale factor, and 0 rotation.

□ BBrg_ft.dwg	2.3mb
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Recent surveyed Topo data of Brotherhood Bridge area

□ bro-eng_jgrid.dwg	1.4mb
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Design drawings of 1994 Project to improve roadway from Brotherhood Bridge to Engineers Cutoff

□ CBJTAX_JGRID.dwg	1.7mb
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CBJ Tax Map / property line / wetland boundary data (very approximate. Most of this data was created by manually digitizing original mylar drawings)

□ EGAN_LOOP.dwg	1.3mb
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Egan Drive / Mendenhall Loop Road ROW (this data supersedes any ROW lines seen in other dwgs)

□ eganpath_jgrid.dwg	0.7mb
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Design drawings of 1995 Project to add a separated multi use recreational path from Egan/Loop Intersection to Brotherhood Bridge

□ gps_basemap.dwg	4.0mb
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Highway CL and misc control point GPS data

□ mc nugget_CONST_JGRID.dwg	12.3mb
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Design data of 2000 Project to improve Glacier Highway from McNugget intersection to Loop / Egan intersection

□ mc nugget_ROW_JGRID.dwg	0.7mb
---------------------------	-------

Glacier Highway ROW for above project (this data supersedes any ROW lines seen in other dwgs)

□ yandunkin_int_jgrid.dwg 0.7mb

Design drawings of 1993 Project to reconfigure Yandukin / Egan Intersection

Digital Maps

Name	Size
Juneau B-2 NW.tif	9.1mb
USGS Quad Map Image	
Juneau B-2SW.tif	7.1mb
USGS Quad Map Image	

Digital Images

Name	Size
wedcor.tif	40.4mb
Aerial Photo of Project area dated 8/16/97	
AIRPORTZ.jpg	1.4mb
DIAMONDZ.jpg	1.1mb
EVALLEYF.jpg	1.7mb
FC10300.JPG	0.3mb
FC16000.JPG	0.2mb
FC16100.JPG	0.3mb
HURLOCK.jpg	0.4mb
OLDG9.jpg	1.9mb
VAL.jpg	3.0mb
loopeast.tif	79.3mb
loopwest.tif	79.8
od.TIF	20.3
od2.TIF	17.5
olddairy.TIF	19.4mb

Other

Name	Size
mendenhall.tif	4.3mb
Mendenhall.dwg	26kb
mendenhall.pdf	1.0mb

The tif image is a Mendenhall Valley Land Use Map from the Mendenhall Watershed Partnership (MWP) web site. The dwg file is AutoCAD 2000 used to scale and plot the map. The pdf file was created for email transfer.

Project Generated Drawings

Name	Size
Base-Proj.dwg	4.5mb
Base-Photo.dwg	4.5mb
Survey-Control	4.5mb