ASSEMBLY STANDING COMMITTEE
COMMITTEE OF THE WHOLE
THE CITY AND BOROUGH OF JUNEAU, ALASKA

March 24, 2014, 6:00 PM.
Municipal Building - Assembly Chambers

Assembly Worksession - No Public Comment - To begin immediately following the Special Assembly Meeting at 6 p.m.

I. ROLL CALL

II. APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

IV. AGENDA TOPICS

A. Afterschool Coalition Update

B. CDD Builders Annual Meeting Report

C. West Douglas Road - Purpose and Need

Rorie Watt will present a verbal report to the Committee of the Whole.

D. Lemon Creek Access

Rorie Watt will present a verbal report. The Lemon Flats Second Access Reconnaissance Study, Sept. 2007, is attached in the on-line packet, and was previously distributed to the Assembly. Some paper copies available in the Clerk's office.

V. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS

VI. ADJOURNMENT

Note: Agenda packets are available for review online at www.juneau.org.

ADA accommodations available upon request: Please contact the Clerk's office 72 hours prior to any meeting so arrangements can be made to have a sign language interpreter present or an audiotape containing the Assembly's agenda made available. The Clerk's office telephone number is 586-5278, TDD 586-5351, e-mail: city_clerk@ci.juneau.ak.us

ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA

Afterschool Coalition Update

ATTACHMENTS:

	Description	Upload Date	Type
☐	Afterschool Coaltion Memo	3/19/2014	Cover Memo
☐	Afterschool Coalition Power Point	3/19/2014	Presentation

JASC

Juneau Afterschool Coalition

City & Borough of Juneau • Juneau School District • Catholic Community Service • University of Alaska Southeast • Juneau Youth Services • Association of Alaska School Boards • Central Council of Tlingit & Haida Indian Tribes of Alaska • Juneau-Gastineau Rotary • Glacier Valley Rotary • Juneau Rotary • United Way of Southeast Alaska • Big Brothers Big Sisters of Alaska • Juneau Economic Development Council • National Council on Alcoholism & Drug Dependence • UAF Cooperative Extension Service/4H • A.W.A.R.E.• Communities in Schools •

To: Assembly Committee of the Whole
From: Juneau Afterschool Coalition
Re: Middle school Afterschool Program Update

Cc: Kim Kiefer, Brent Fischer, Myiia Whistler

Date: March 19, 2014

Funding Request: $48,500

Funding Request Summary: Last year, we pledged not to ask the Assembly for more than $50,000 for the coming years. After a discussion with the City Manager, in light of the CBJ revenue shortfalls this year, we are asking for $48,500 – a 5% reduction.

This funding is approximately half the cost of operating the B.A.M. (Body and Mind) afterschool activity program in both middle schools from July 1, 2014to June 30, 2015. We feel that with a $48,500 base funding, we will be able to generate the rest locally on a sustainable basis. There are two key points that make this a wonderful investment for the community of Juneau:

1. Additional afterschool activities are the best thing our community can do to help keep our youth out of trouble, **and** assist them in engaging better academically, leading to a higher graduation rates.
2. This program is broad in scope because it can eventually serve every middle school youth, while it is amazingly cost effective because there are no facility, transportation, insurance, or fiscal administration costs. Also, there are very few activity costs because most activities are provided by existing organizations that have an interest in youth.

Background: The hours between 3:00 p.m. and 5:00 p.m. are the most dangerous time of the day for our youth. National figures show that youth are three times more likely to experiment with drugs, alcohol, sex, crime, etc. during those hours if unsupervised by adults. Most parents are at work and currently over half our middle school students are on their own. On the other hand, across the country, communities are proving that those hours can be seamlessly connected to the school day to provide afterschool activities that **improve school engagement, grades, and ultimately, graduation rates.**

Accomplishments:

- **Student Participation** - At the end of the first year, nearly one third of the 975 middle school students had participated in at least one B.A.M. afterschool activity

- **A big step toward "Community Schools"** – With the full cooperation of the middle school principals we have worked out very complex issues of insurance, background checks, student and parent contact and recruitment, school classroom space allocation while teachers are still on site, activity attendance and evaluation, etc. While there is still much to do to bring the program to maturity, the goal is to change the culture of the schools to welcome and incorporate community members into the schools in a broad, meaningful and collaborative way.
- **Recruited more community partners** – In the first year, we successfully worked with community agencies as diverse as the hospital, SEARHC, Juneau Youth Services, and JPD to provide activities. So far this year, we have retained most of our partners and added new activities. For example, STEM (Science, Technology, Engineering, Math) activities have been successful in attracting students, especially more "At Risk" students, and in connecting afterschool activities to school curriculum.
- **Evaluation** – This year we began to enter data on student participation in afterschool activities in the School District's "Powerschool" system. This will allow the School Board and Assembly to gauge the academic achievement of students who participate in afterschool activities, and graduation rates.

Key B.A.M. Goals for Next Year

- **More activities and student participation**: We need to explore additional strategies to attract additional partners to provide afterschool activities.
- **More integration of afterschool activities into the school day/curriculum**: This has an academic as well as a student participation impact. We need to continue to make activities more connected to school subjects (e.g. STEM and Junior Achievement afterschool activities are examples). Second, we need to have teachers and other staff more involved in identifying more "at risk" students and encouraging them to participate.
- **Broaden business and community group funding of specific activities**.
- **Implement broader long term community and School District B.A.M. Steering Committee including parents and students.**

Key Juneau Afterschool Coalition Goals for Next Year

Changes:

- An Alaska Afterschool Network (AAN) began operation last month with the hiring of an executive director Thomas Azzarella. It will do statewide advocacy and program assistance. It is funded by the Mott Foundation and The Alaska Children's Trust.
- In Juneau, Terri Campbell was made a one year Afterschool Ambassador by the U.S. Afterschool Alliance. Her focus is afterschool advocacy and planning in Juneau.

Proposed JASC Goals: (Based on a recent JASC member survey)

- Map all Afterschool program options in Juneau, and
- Create a strategic "out of school" plan for Juneau with CBJ, United Way, and other partners - Afterschool for all k-12 including summer
- Create a network of community and statewide advocates – with AAN
- Clarify roles for the JASC and increase community collaboration

B.A.M Afterschool Program
REVENUE (2 school years) as of March, 2013 = $183,745

Funding :	Cash Re'cd (Not including "in-kind" donations)
City and Borough of Juneau	$25,000 (requires at least $50,000 match)
City and Borough of Juneau	$50,000
Tlingit and Haida Central Council	$5,000
Tlingit and Haida Central Council	$5,000
University of Alaska Southeast	$ 5,000
Juneau School District	$ 5,000
Juneau School District	$ 5,000
Gaugine Family	$10,000
Gaugine Family	$3,000
Rotary District 5010	$5,000
Juneau Shooting Sports	$1,500
Juneau Rotary	$1,000
Juneau Rotary	$1,000
Juneau Gastineau Rotary Club	$1,000
Juneau Gastineau Rotary Club	$1,000
Juneau Gastineau Rotary Club	$800
Juneau Valley Rotary	$1,000
Juneau Community Foundation-Mike Blackwell	$25,000
Juneau Community Foundation-Mike Blackwell	$10,000
Juneau Community Foundation-Douglas Dornan	$800
Juneau Community Foundation-Blue Heron	$2,000
Crossett Fund	$15,000
Association of Alaska School Boards	$5,000
Juneau Youth Services	$500
Barbara Thurston	$145
Total Revenue to March, 2014	**$183,745**

EXPENDITURES To 12/31/13 **$143,131**

JASC

Juneau Afterschool Coalition

City & Borough of Juneau • Juneau School District • Catholic Community Service • University of Alaska Southeast • Juneau Youth Services • Association of Alaska School Boards • Central Council of Tlingit & Haida Indian Tribes of Alaska • Juneau-Gastineau Rotary • Glacier Valley Rotary • Juneau Rotary • United Way of Southeast Alaska • Big Brothers Big Sisters of Alaska • Juneau Economic Development Council • National Council on Alcoholism & Drug Dependence • UAF Cooperative Extension Service/4H • A.W.A.R.E.• Communities in Schools •

B.A.M. Activities 2012-2013

Safe Sitter Babysitting Training	DH Sept 4-12	**Laura Stats**
(Bartlett Regional Hospital)	FD Sept 24-Oct 3	
Outdoor Adventure Games	FD Sept 18-Oct 16	**Melanie McGrath**
(SEARHC and SAGA)	DH Oct 23-Nov 15	**Nate Heck, SB and Milton**
Photography Studio	FD Oct 22-Nov 6	**Kenneth Moriarty**
(Professional photographer)	DH Nov 26-Dec 11	
Rock the Learner's Permit	FD Dec. 10-18	**Fred Weiler**
(SERRC)	DH Dec 12-20	
Breakfast and Books	DH Dec. 4-May 16	**Kate Troll**
(Communities in Schools)		
Dick and Dave's Archery	DH Jan 8-Feb 28	**Dick Fagnant**
(Two retired teachers)		**Dave Haas**
Junior Police Academy	DH Jan 9-Feb 13	**Sarah Hieb**
(Juneau Police Dept.)		**Kris Sell, Blain Hatch**
Cooking with Kate	DH Jan 29-May 11	**Kate Troll**
(Communities in Schools and UAS M.A.T. student)		**Ariel Lyon**
Art Studio: Mixed Media 12x12	FD Feb 4-13	**Kimberly Naylor**
(Juneau-Douglas City Museum)		
Get Rhythm! With Mr. C.	DH Feb. 28-May 23	**Ben Cordero**
(Juneau Youth Services)		
Table Tennis	DH March 4-April 10	**Phil McMurray**
(Competitive table tennis player/coach)		**Bob Janes**
Outdoor Adventure Challenge	FD March 26-April 18	**Tiffany Nelson**
(SEARHC, ADF&G, 4-H)		**Tennie Bentz, Darren Snyder**
Safe Sitter Babysitting Training	DH April 15-24	**Laura Stats**
(Bartlett Regional Hospital)	FD April 29-May 8	

B.A.M. Activities 2013-2014

Her Space	DH Sept 9-Oct 1	**Cori Stennett**
(Planned Parenthood)	FD Nov 19-26	
Get Rhythm! With Mr. C.	DH Sept 12-Dec 19	**Ben Cordero**
(Juneau Youth Services)		
Safe Sitter1	DH Oct 7-16	**Laura Stats**
(Bartlett Regional Hospital)	FD Oct 21-30	
Guy Space	FD Oct 8-17	**Brendon Bower**
(Juneau Public Health Center)		
Judo	DH Oct 8-24	**Jay Watts**
(Capital City Judo Club)		

Girls on Track (AWARE)	DH Oct 14-Dec 4	**S. Nachtigal, D. Huette, M. Hausler, K. Sell**
Dance Fitness	FD Nov 6-13 (then cancelled)	**Terri Campbell**
Tumbleweeds (gymnastics)	DH Nov 18-Dec 17	**Julie Crabtree**
Make It! Drawdio Musical Pencil (Juneau Economic Develop Council)	FD Nov 18-Dec 9 DH March 3-April 7	**Bernadette Rosano**
Yoga Dojo Disco	DH Jan 6-March 10	**Kathy Huston**
Jr. Police Academy (Juneau Police Dept.)	FD Jan 7-Feb 11	**Kris Sell, Blain Hatch**
Safe Sitter2 (Bartlett Regional Hospital)	DH Feb3-12 FD Feb18-26	**Laura Stats**
Archery	FD March 4-April 17	**D. Haas, D. Fagnant, F. Hiltner**
Art Studio: Mixed Media Crafts (NCADD)	FD March 24-April 16	**Liz Weber**
Pet People: Animal Care & Training (Gastineau Humane Society)	DH March 26-April 23	**Liz Snyder, Cass Suryan**
Art Studio: Abstract Painting	DH April 1- 29	**Julie Crabtree**
Rock the Learner's Permit (SE Regional Resource Center)	FD April 7-15 DH April 9-17	**Lisa Corcoran**

(Note: **Special Olympics Partners Team**, offered by REACH, is tentatively scheduled for two days in late April.)

Sample of University Research showing the Impact of Afterschool Programs on Improving Grades and Avoiding Crime, Drugs, Alcohol, Etc.

University of Alaska, "Exploring the Relationship between Protective Factors, Risk Behaviors, and School Engagement Factors among Anchorage High School Students," Analysis and Study Findings conducted and compiled by: Gabriel Garcia, PhD, MA, MPH University of Alaska Anchorage, Published October 12, 2012 By United Way of Anchorage.

Results: The "protective factors" that had the strongest effect on:

Decreasing the odds of youth engaging in alcohol, drugs, smoking, sex, etc. were:

1. Having caring and encouraging teachers
2. Having parents that talk to them about school every day
3. **Volunteering or helping three or more hours per week in school or the community,**
4. **Being involved in organized after school activities two or more days per week**.

Increasing the likelihood of getting A's and B's in school were:

1. **Being involved in organized after school activities two or more times per week**
2. **Spending three hours or more a week volunteering or helping in school or community**
3. Having parents that talk to them about school every day.

How do "protective factors" help students?: "Each one-unit increase in the number of protective factors reported by youth can significantly decrease the likelihood of engaging in risk behaviors and increase the likelihood of positive school outcomes from ***14% to 40%***."

Harvard Family Research Project (HFRP) *After School Programs in the 21st Century: Their Potential and What It Takes to Achieve It* (Little, Wimer, & Weiss, 2008), a brief that summarizes 10 years of research on afterschool programs and discusses implications for the future.
http://www.sedl.org/pubs/sedl-letter/v20n02/afterschool_findings.html

- **Does participation in afterschool programs make a difference?** According to Little, Wimer, and Weiss, "The short answer is **yes**. . . .A decade of research and evaluation studies, as well as large-scale, rigorously conducted syntheses looking across many research and evaluation studies, confirms that children and youth who participate in after school programs can reap a host of positive benefits in a number of interrelated outcome areas—academic, social/emotional, prevention, and health and wellness. (2008, p. 2)"
- "The HFRP brief emphasizes that many studies "repeatedly underscore the impact of supporting a range of positive learning outcomes, including academic achievement, by affording children and youth opportunities to learn and practice new skills through hands-on, experiential learning,"
- **"Balancing academic support with a variety of engaging, fun, and structured extracurricular or co-curricular activities that promote youth development in a variety of real-world contexts appears to support and improve academic performance.** (2008, p. 4)"

Academic achievement improved among students active in structured after-school programs
Southern Methodist University study: http://blog.smu.edu/research/2012/10/05/academic-achievement-improved-among-students-active-in-structured-after-school-programs/

- "School-age children who participate in structured after-school activities improve their academic achievement, according to a new study from Southern Methodist University, Dallas."
- "Afterschool care activities can provide a child with a sense of success, even if that child isn't necessarily successful in the classroom, said Deborah Diffily, co-author on the study and an associate professor in Simmons."
- "Within the scientific literature, the psychological and social benefits of programs are well-documented, the authors said. Benefits observed include better social skills, greater motivation, better classroom behavior, higher self-esteem and lower rates of criminal activity."

JASC

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Helping ALL of Juneau's Youth Succeed

Many Juneauites ask: "What can we do to help our kids succeed in school and in life?" Many people would help if they knew what is needed.

Juneau does have a huge gap in its activities for its youth. And it is relatively **inexpensive to fix.** This gap is critical because fixing it can improve student grades (and graduation rates); and decrease drug, crime, and other youth problems.

Adding a broad range of community based afterschool activities using school facilities is not a new idea. It is being done all over the U.S.

The beauty of afterschool activities based in schools can be summed up as follows:

- 3:00 to 5:00 p.m. are the most dangerous hours of the day for youth because most parents are still at work, and those hours also have the greatest potential for engaging more kids in new learning opportunities that will boost graduation rates and grades. (*Recent UAA research)
- Today, according to recent student surveys, more than half of middle school students, especially those most at risk, are on their own after school.
- The **cost of potentially involving all students in wholesome afterschool activities is very low** compared to any other broad youth program because:
    - Facilities, some equipment, and transportation are already provided by the schools.
    - Existing teachers and staff help recruit students who will benefit from specific activities.
    - Activities are provided primarily by: existing youth agencies and programs; existing community service organizations; recreational and professional associations, and community organizations and businesses who want to do something to help youth.
    - There are no overhead or administrative costs because finance and personnel services are provided “in-kind” by Catholic Community Service.
    - The afterschool program budget consists of: a coordinator; 2 part time site supervisors; purchase of snacks; and some money for instructor stipends as needed. (And small amounts for publicity, background checks, office equipment supplies, some program supplies)

The **B.A.M.** afterschool program is in its second school year in both middle schools. B.A.M., in cooperation with the schools, has set up a "platform" to make it easy for a community groups to enter the schools. B.A.M. helps with activity planning, administrative issues like background checks and insurance, finds space, coordinates youth recruitment, provides snacks, etc. As new activity sponsors are recruited and added, there is a great possibility of serving most of our middle school students.

(* A recent study by the **University of Alaska** concluded that "Being involved in organized after school activities two or more days per week" is one of the most effective ways of: "Decreasing the odds of youth engaging in risk behaviors (like using alcohol, drugs, smoking, sex, etc.), and, Increasing the likelihood of getting A’s and B’s in school.")

Assembly Thank you!!!

for supporting this innovative vision for Juneau's Youth

An inexpensive way to:

Improve academic achievement and reduce dropouts

Prevent more youth suicides, substance abuse, crime

Improve future civic participation and future job readiness

Drama Club

Key Themes

- Afterschool is the next thing for Juneau to do to help more kids graduate high school as healthy and productive citizens.
- Schools can't do it alone. Only the Community can make afterschool programming **comprehensive & sustainable.**
- When money gets tight, a great cost effective idea becomes an even better idea.

Three Keys to Academic Success for Juneau's Kids

1. **Family Time**

2. **School Time**

3. **Out of School Time**

Afterschool Sewing Club

Why Should We Care About What Our Kids Do After School??

According to the National League of Cities, Youth and Families Institute

- In the U.S., youth crime rate for the first hour after school is triple.
- Youth not in afterschool programs are 3 times more likely to experiment with drugs, alcohol, cigarettes, and sex.
- 94% of Americans believe kids need structured afterschool activities.
- 86% of police chiefs believe afterschool programs "greatly reduce youth violence and crime."

In Juneau >Half our middle school kids "Fall Through the Cracks" after school

- "More than 2 out of 3 students reported they "Hang out at home" or "Hang out with friends" 3 to 5 days per week after school." Juneau Middle School Activity Surveys 12/2010

- 49% at DZ and 56% at FD said they were with an adult after school 2 days a week to never. AASB 2012 Student Community Connectedness survey

- 30% "not interested " by current activities.

Juneau can't afford the cost of rehabilitating all kids, but we can easily afford to prevent a large part of the problem in the future.

Afterschool Outcomes

- Improved School Attendance, Engagement in Learning and Improved Test Scores and Grades
  - Annual performance report data from 21st CCLC grantees across the country demonstrate – improve their reading (43%) and math grades (42%). (Learning Point Associates, November 2007)
- Recent UAA Study concludes that "getting A's and B's in school" and "decreasing odds of engaging in alcohol, drugs, smoking, sex, etc." is most influenced by "Being involved in organized afterschool activities two or more times per week."

What is an Afterschool Plan?

Connecting what we already have to create better opportunities for youth

Afterschool Plan

Create a "Platform" – make the middle schools open for the delivery of afterschool activities by schools, youth agencies, community organizations, UAS, etc. in coordination with traditional afterschool activities

"Intentional" Activities to reach all youth

- Find out what kids want and need
- Recruit and promote
- Connect with school day
- Quality and Evaluation
- Connect with the community – advocate

Note: Schools (facilities and staff) are an incredibly valuable tool to connect with youth

Art Studio – FD

Archery – DZ

Cooking With Kate - DZ

Table Tennis Club – DZ

Outdoor Adventure – FD

Safe Sitter – DZ and FD

Rock the Learners Permit

JR Police Academy

Afterschool is critical to helping more kids graduate High School

Outdoor Adventure Games – Sponsored by SEARHC

Participation

- Last school year, of about 975 students:
  - 220 students attended half to all of the sessions of a B.A.M. afterschool activity.
  - 287 have attended 1 or more sessions
- This is in addition to traditional sports and other school sponsored afterschool activities.
- More activities can be added as more long-term partners are identified. The goal is to reach all youth, especially the hard to reach ones.

Evaluation

- Participation added to school district data base “Powerschool” to track graduation, etc.
- Student and instructor evaluations of each activity
- AASB School Climate and Connectedness Survey, e.g.

Major Funding Partners

Approximately 2 school years

City/Borough	$75K
Jun Com Found. – Mike Blackwell	$35K
UAS	$5K
School Dist	$10K
AK School Bds.	$5K
T&H Central Co.	$10K
Rotary Clubs	$10.8K
Gaugine	$13K
Crossett Fund	$15K

Total $183,745
2 school years

Expenditures to 12/13
$143,131

Why is the Afterschool Program such a good deal?

1. Two afterschool facilities with diverse activities would cost $500K to $750K per year EACH. – Total $1 to $1.5 million
2. Subtract out facility costs, insurance, administration, transportation, and most activity costs, and the cost to operate 2 afterschool programs is $100K per year.
3. PLUS – A school based program gives otherwise impossible access to kids

B.A.M. Goals for Next Year

- At least double activity hours and participation hours
- More integration with School curriculum
- Broaden business and group funding
- Deepen involvement of CBJ, esp. P&R Dept
- More formalized and stronger advisory group for B.A.M.
- JASC work on MS, HS, & summer

Thank You!!!!

- Questions?

ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA

CDD Builders Annual Meeting Report

ATTACHMENTS:

	Description	Upload Date	Type
☐	Staff Memo - Housing Development Forum	3/20/2014	Cover Memo
☐	Housing Forum - Summarized Feedback	3/20/2014	Exhibit

MEMORANDUM

CITY/BOROUGH OF JUNEAU
Lands and Resources Office
155 S. Seward St., Juneau, Alaska 99801
Jessica_Beck@ci.juneau.ak.us
Voice (907) 586-5252
Fax (907) 586-5385

TO: Assembly Committee of the Whole

FROM: Jessica Beck, Lands and Resources Specialist

DATE: March 20, 2014

SUBJECT: 2014 Housing & Development Forum

On February 24, 2014 the City & Borough of Juneau held a Housing & Development Forum. The purpose of the forum was to have an open, friendly dialogue and presentations regarding housing and development with builders, realtors, mortgage lenders and other interested participants. It was held at the Vocational Training and Resource Center, 9:30am-4:00pm including lunch from the Twin Lakes Café. The event was free and open for anyone to attend.

Builders had the opportunity to earn 5 business continuing education credits towards a Residential Contractor Endorsement.

Over 14 staff contributed to putting the forum together and having it run smoothly. Nine city staff and one volunteer from the Affordable Housing Commission made presentations. This was similar to the Housing Forum held in February 2013, but with new topics in hopes of moving forward with discussions. City staff involved were from the Community Development Department, Lands & Resources Division, Fire Department, General Engineering and Public Works Department.

Approximately 35 people attended. Overall, participants rated the event as a success. Attached is the feedback from participants.

If the CBJ holds this forum again, we would like to also include continuing education credits for the realtors to encourage more of them to attend.

All the powerpoints presentations from the forum are available to view on the Community Development Department's webpage: http://www.juneau.org/cddftp/

Housing Forum Feedback

Monday, February 24, 2014, 9:30am to 4:00pm
Vocational Training & Resource Center

Question:	**How did you hear about this forum?**							
Options:	Newspaper	Radio	Flyer on bulletin board	Invitation via mail	Invitation via email	Other: SEABIA	Other: From Staff	Other: CBJ Website
Responses:	1	1	4	7	4	3	1	2

Question:	**Did you attend the Housing Forum last year?**	
Options:	Yes	No
Responses:	11	12

Question:	**Are you earning continuing education credits for your Residential Contractor Endorsement?**	
Options:	Yes	No
Responses:	20	3

Question:	**Please rate the housing forum**				
Options	Excellent	Good	Fair	Poor	Very Poor
Responses:	6	14	3	0	0

Question:	**Should we hold this forum again?**	
Options:	Yes	No
Responses:	23	0

Question:	**If we were to hold the forum again, how often should we have it?**			
Options:	Twice a year	Once a year	Every two years	Other
Responses:	7	15	0	0

Did you learn anything from attending this forum?

- Yes
- Permit Information
- Fire & Zoning
- Staff attitude towards the housing problem
- Process
- Seems to be new energy/staff interested in making the process quicker. Good job.
- Development guidelines
- Fire Info
- Roundtable
- New projects the city is working on
- New subdivision requirements
- Learned small amount
- Learned lots
- Yes, I think this was an improvement from last year – well presented and organized

If we were to hold this forum again, what topics would you like added?

- Open minded discussion on new topics. New section.
- Updates on other forums
- New items
- Building code specifics as a new topic
- You covered everything
- Charlie Ford/Jay Srader time to help with permitting
- Permit center inspectors and inspections
- Updates on status of changes accomplished from previous meeting
- Plan review
- Utility department (water/sewer)
- Continue with same information
- Maintaining existing structures
- Neighborhood development

If we were to hold this forum again, what topics would you drop?

- Recycling
- None
- Expand/more in depth on existing topic agendas

Other comments:

- Very complicated subjects – Good effort
- Thanks
- Enjoyed the recycling topic and info
- Thank you for hosting this!!!
- Adoption of new codes should be weighed against the cost benefit. NAHB is saying each code changes increase the "cost" 7%.
- Beth mentioned that site plans are going to have to be done by a professional. I very much hope this isn't something that will be taken lightly

ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA

Lemon Creek Access

MANAGER'S REPORT:

Rorie Watt will present a verbal report. The Lemon Flats Second Access Reconnaissance Study, Sept. 2007, is attached in the on-line packet, and was previously distributed to the Assembly. Some paper copies available in the Clerk's office.

ATTACHMENTS:

	Description	Upload Date	Type
☐	2007 Lemon Creek Access Study	3/21/2014	Exhibit




LEMON FLATS SECOND ACCESS

RECONNAISSANCE STUDY

SEPTEMBER 2007

CITY/BOROUGH OF JUNEAU ALASKA'S CAPITAL CITY

Toner-Nordling & ASSOCIATES, INC.

DOWL ENGINEERS

LEMON FLATS SECOND ACCESS

RECONNAISSANCE STUDY

Prepared for:

City and Borough of Juneau
155 S. Seward Street
Juneau, Alaska 99801

Prepared by:

DOWL Engineers
4041 B Street
Anchorage, Alaska 99503
(907) 562-2000

W.O. D59662

September 2007

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APPENDICES

LIST OF ACRONYMS

AADT .....annual average daily traffic
ADF&G.....Alaska Department of Fish and Game
ADNR .....Alaska Department of Natural Resources
ADT ..... average daily traffic
ATP ..... Areawide Transportation Plan
CBJ..... City and Borough of Juneau
DEC.....State of Alaska Department of Environmental Conservation
DOT&PF.....State of Alaska Department of Transportation and Public Facilities
DOWL..... DOWL Engineers
EPA .....Environmental Protection Agency
LFCD .....Lemon Flats Commercial District
LFSA..... Lemon Flats Second Access
LOS ..... level-of-service
mph ..... miles per hour
NPDES..... National Pollutant Discharge Elimination System
OHMP .....Office of Habitat Management and Permitting
OPMP.....Office of Project Management and Permitting
ROW ..... right-of-way
SHPO .....State Historic Preservation Officer
SWPPP.....Storm Water Pollution Prevention Plan
TMDL ..... total maximum daily load
USACE .....United States Army Corps of Engineers
USFWS .....United States Fish and Wildlife Service

1.0 INTRODUCTION

1.1 Purpose and Need

The Lemon Flats Commercial District (LFCD) is one of the fastest developing areas of Juneau. The single access into the LFCD is the Anka Street/Glacier Highway intersection. This existing access experiences significant congestion during peak traffic periods and does not enable heavier commercial traffic to be separated from the pedestrian and light commercial traffic that access this area. Emergency access into the LFCD is limited to the single access resulting in decreased response times during periods of congestion or in the event of an accident, road maintenance/construction, or other delay on Anka Street. In recognition of the rapid growth and traffic concerns, the City and Borough of Juneau (CBJ) Area Wide Transportation Plan and the CBJ Comprehensive Plan include provisions for evaluating and implementing transportation enhancements and improved access into the Lemon Creek area. The State of Alaska Department of Transportation and Public Facilities (DOT&PF) has also requested analysis of congestion at the Anka Street/Glacier Highway intersection prior to approval of further commercial development in the LFCD.

1.2 Reconnaissance Study

In short, the objective of this report is as follows:

- Address DOT&PF and CBJ concerns regarding traffic congestion at the Anka Street/Glacier Highway intersection.
- Identify traffic capacity and emergency access alternatives that address current needs, but that also accommodate future growth.
- Evaluate the environmental (natural and otherwise) impacts and cost feasibility of the access alternatives.
- Recommend a course of action that will guide the planning and design decisions in the LFCD (see Figure 1) for the foreseeable future.

Figure 1: Vicinity Map

2.0 EXISTING CONDITIONS

2.1 Development and Land Use

Development and land use for the project area is guided by the CBJ 1996 Comprehensive Land Use Plan and the CBJ zoning ordinance (see Figures 2 and 3). The existing development in the area is generally consistent with the zoning and land use designations in the Comprehensive Plan.

The project area can be segregated into essentially three sections: Lemon Creek and the residential area north of Lemon Creek; the commercial/industrial area south of Lemon Creek and north of Jenkins Drive; and the low density residential, commercial, and industrial area south of Jenkins Drive.

Lemon Creek and north of Lemon Creek: This area contains existing residences and is home to the Lemon Creek Correctional Institution. The zoning on this area is primarily residential with the Lemon Creek corridor zoned rural reserve. The Comprehensive Plan designates these lands as residential, institutional, and public uses, and as resource development in the Lemon Creek corridor. All traffic generated from this area collects onto Davis Avenue to access Glacier Highway. The area north of the prison is mostly undeveloped, but contains a new material site. A new temporary one-lane bridge has been constructed north of the prison across Lemon Creek for the materials site. Currently, materials from the site are trucked through the LFCD onto Glacier Highway via Anka Street.

South of Lemon Creek and north of Jenkins Drive: This area is primarily developed in a mixture of commercial and industrial land uses and over the past several years has experienced the growth of many new well-established businesses. A CBJ material site is located at the east end of the area. All traffic generated from the area collects onto Anka Street to access the Glacier Highway. The area is primarily zoned industrial and designated industrial and resource development in the Comprehensive Plan. CBJ planners expect more commercial growth as the old material site becomes less productive and the site is redeveloped to house more commercial and industrial businesses.

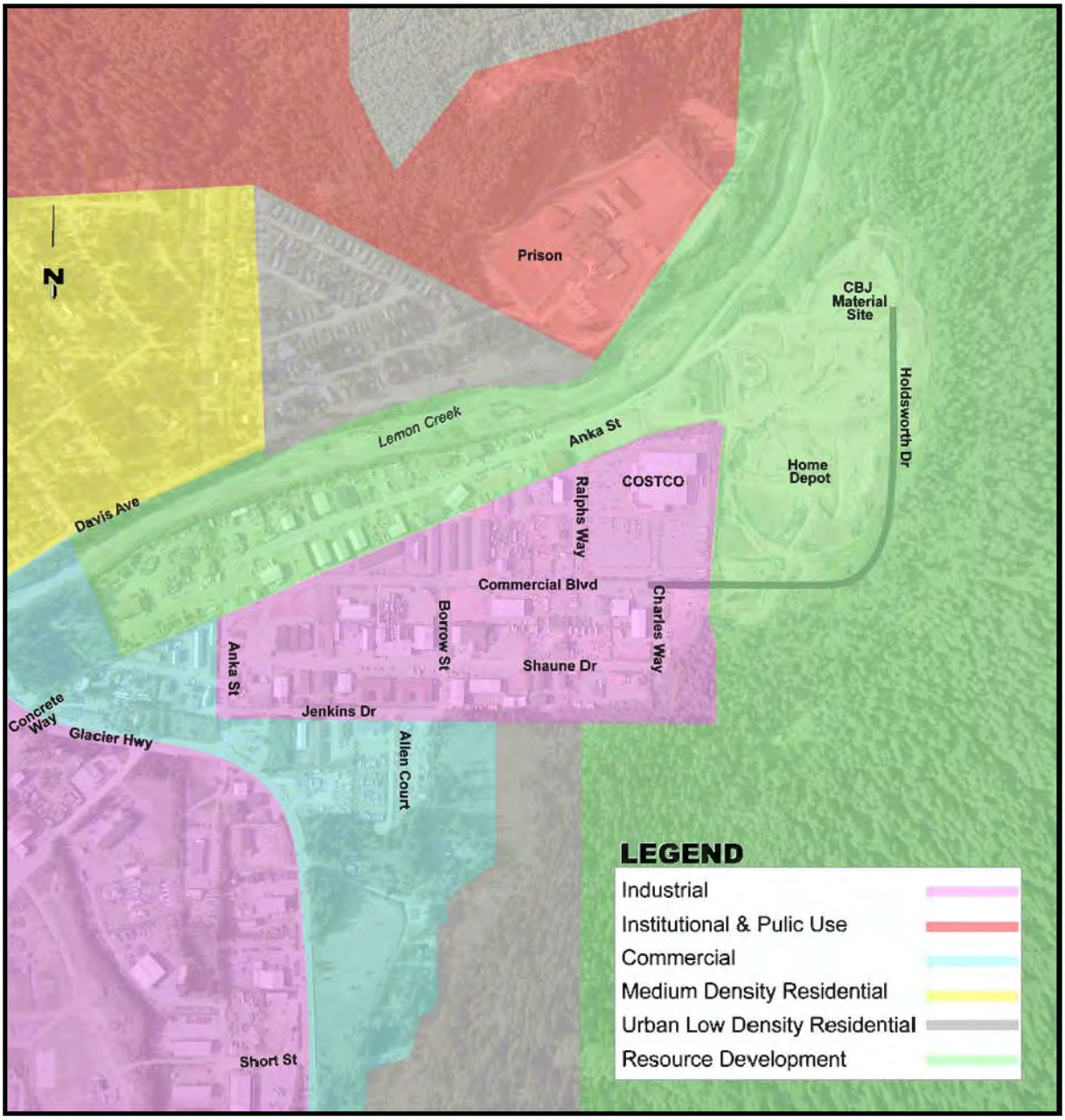

Figure 2: Comprehensive Plan Land Use Designation

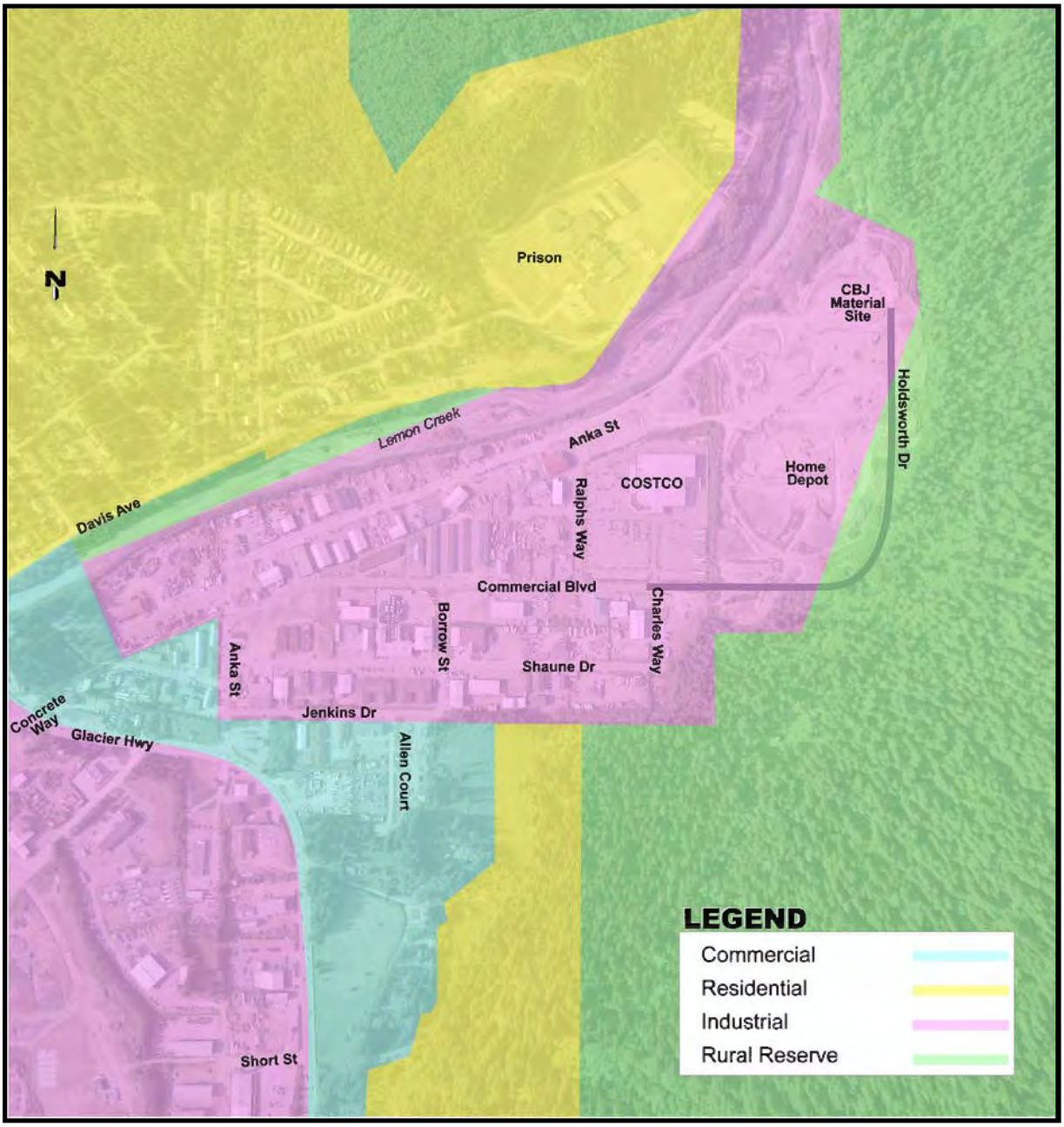

Figure 3: Generalized Zoning

South of Jenkins Drive: This area south of Jenkins Drive is mostly undeveloped with a handful of long-established homes and businesses. The more dense areas feed traffic onto Jenkins Drive to Anka Street and onto Glacier Highway. The area is zoned in a mixture of commercial, residential, and industrial. The Comprehensive Plan also designates the area as a mix of commercial, urban low density residential, and industrial. Future growth is likely to occur in the areas west of Glacier Highway.

2.2 Roadway Facilities

2.2.1 Glacier Highway

According to the DOT&PF Southern Region, Glacier Highway is classified as a major collector, but functions more like an arterial road in this area. The roadway cross-section consists of two 12-foot-wide paved travel lanes with 6-foot-wide paved shoulders and a center two-way left-turn lane. Pedestrian facilities are provided on the north side of the corridor with a marked crosswalk at the Anka Street intersection. The posted speed limit is 40 miles per hour (mph). The alignment has several curves and the terrain is flat. The right-of-way (ROW) is owned and maintained by DOT&PF.

2.2.2 Anka Street - Glacier Highway to Ralph's Way

The roadway generally consists of two 12-foot-wide paved traveled lanes, 6-foot-wide paved shoulders, and 1.5-foot-wide gutters on both sides. From Glacier Highway to Commercial Boulevard there are 5-foot-wide concrete sidewalks on both sides of the street. The shoulders end and no pedestrian facilities are provided from Commercial Boulevard to Ralph's Way. Street lighting is continuous from Glacier Highway to Commercial Boulevard and also from Commercial Boulevard to Ralph's Way, though the spacing increases. The posted speed limit is 20 mph. The ROW is owned and maintained by CBJ. Anka Street functions as a commercial collector roadway providing local access as well as being the primary east/west through street in the LFCD. Anka Street is envisioned to be the primary haul route for the material sites.

2.2.3 Commercial Boulevard

This road is a dead-end industrial/commercial street that serves Costco and the new Home Depot. The roadway has two 14.5-foot-wide paved travel lanes with 1.5-foot-wide gutters on both sides. A 6-foot-wide sidewalk is provided on the north side of the road from Anka Street to the end of the road. Street lighting is continuous. The posted speed limit is 20 mph. The ROW is owned and maintained by CBJ. Commercial Boulevard functions as a collector road and is the primary road providing access to the major trip generators in the LFCD.

2.2.4 Davis Avenue

Davis Avenue is a local road that provides access to the residential area west of Lemon Creek and to the prison that is located northeast of the residential area. The road was reconstructed in 2006. The roadway consists of two 12-foot-wide paved lanes. The north side has curb and gutter with an adjacent 6-foot-wide sidewalk, while the south side has 2-foot-wide gravel shoulder and a 6-foot-wide separated paved pathway. Street lighting is provided on Davis Avenue. The posted speed limit is 30 mph reducing to 20 mph about two-thirds of the way down Churchill Way. The ROW is owned and maintained by CBJ.

2.3 Traffic and Safety

A preliminary traffic capacity and safety analysis was performed as part of the reconnaissance effort and is summarized below. Traffic volumes were collected in May and July 2007 to determine the average daily traffic (ADT) and peak hour traffic volumes. The new data was supplemented with data provided by the CBJ and DOT&PF. In all cases, the peak hour traffic conditions were in the evening period and are the basis for this analysis.

2.3.1 Capacity Analysis

The annual average daily traffic (AADT) volumes fluctuate seasonally on the area roads and have not followed an observable trend over the past 10 years. The 2005 AADT is shown on the left in Figure 4. Due to the large differences in traffic volumes that have occurred over the past 10 years, the growth rate for the traffic analysis was taken from the CBJ 2001 Areawide Transportation Plan (ATP), which estimates a 1 percent growth rate for traffic volumes in this area. A 1 percent annual growth rate is relatively conservative in light of the

historical data and would be considered moderate to low growth. Based on this rate, the projected AADT for 2027 is shown on the right in Figure 4. The percent of heavy vehicles in the daily traffic was calculated to be between 7 and 8 percent. For roads in this ADT range, the percent of heavy vehicles does not usually exceed 3 to 4 percent unless the route is a designated freight route from an adjacent heavy vehicle generator (such as a gravel pit).

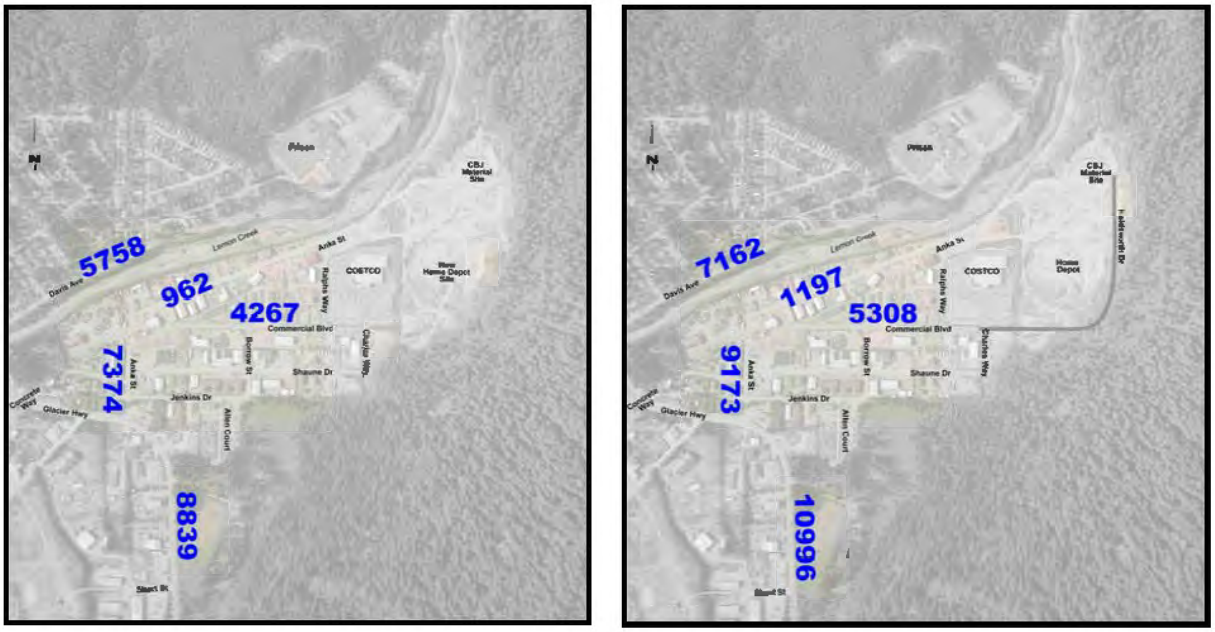

Figure 4: 2005 versus 2027 Projected Annual Average Daily Traffic

A capacity analysis was performed using Synchro 7.0 software using the volumes shown in Figure 5. Procedures for evaluating the capacity were in accordance with the Highway Capacity Manual (Transportation Research Board, National Research Council, 2000). See Appendix F for a description and summary of the Level-of-Service (LOS) criteria. Generally, LOS C or higher at the design year is considered acceptable LOS. Based on the data in Figure 5, the Anka Street/Glacier Highway intersection operates at LOS B during the p.m. peak hour and the unsignalized intersections of the Glacier Highway/Davis Avenue and Commercial Drive/Anka Street are both operating at LOS C. In 2027, the LOS deteriorates to C at Anka Street/Glacier Highway and to LOS E at the critical approaches to the Glacier Highway/Davis Avenue intersection and the Anka Street/Commercial Street intersection as shown in Figure 6. See Appendix A for capacity analysis worksheets.

2.3.2 Safety Analysis

Collision data was obtained from 2000 through 2004 for the Anka Street/Glacier Highway intersection. Data show that in 5 years, 12 accidents (3 property-damage-only, 7 minor injury, 1 major injury, and 1 fatality) were reported at the intersection of Anka Street/Glacier Highway. This equates to a crash rate of about 0.5 crashes per million entering vehicles, which is below a typical mitigation threshold of 1.0 crash per million entering vehicles.

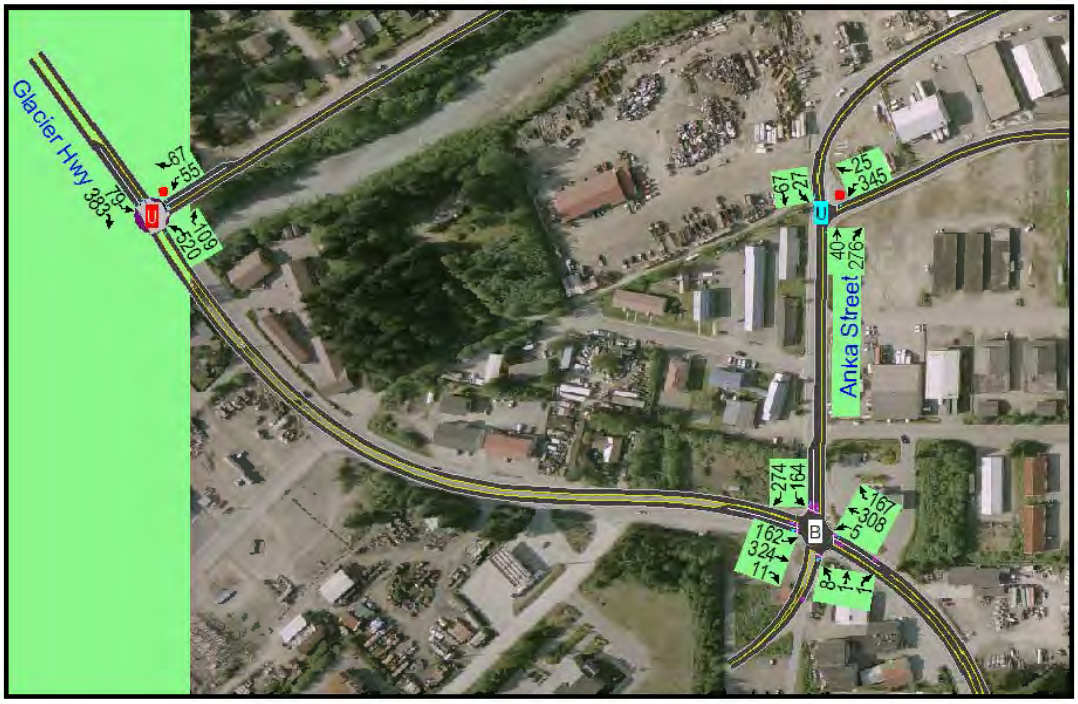

Figure 5: July 2007 P.M. Peak Hour Turning Movement Volumes

Figure 6: Projected 2027 P.M. Peak Hour Turning Movement Volumes

Discussions with the local fire department indicated a concern about response times to specific areas of LFCD, particularly during peak traffic conditions and in the event that Anka Street is obstructed by disabled vehicle(s), construction activities, or another emergency.

2.4 Existing Conditions Summary

The following summarize the key findings of the existing land use, traffic, and facilities analysis:

- The LFCD has experienced growth, particularly in the area of the gravel sources and future development is also likely to occur in this same area.
- Anka Street and Commercial Boulevard are the primary east/west streets in the LFCD. The Glacier Highway provides higher-level access to the west side of LFCD, but no existing collector or arterial roads provide access to the east side of the LFCD.
- The existing Anka Street/Glacier Highway intersection is anticipated to operate at an acceptable LOS over the next 20 years, but starts to deteriorate in the 2025 timeframe.

- Crash rates in the area fall within predicted ranges.
- Emergency access is limited to a single intersection, and response time to the LFCD could be impacted by obstructions on Anka Street.

3.0 SECOND ACCESS ALTERNATIVES

The primary objective of this project is to evaluate alternatives for providing a second access into the LFCD. Several alternatives for achieving this objective were evaluated based on an alternatives analysis and the results of the public and agency scoping process. A "no-build" alternative was also considered for baseline comparison.

3.1 Alternative 0 - No-Build

Alternative 0 is the "no-build" alternative. The LFCD would continue to be served by a single access.

3.2 Alternative 1 - Anka Street Reconstruction

Alternative 1 is the Anka Street Reconstruction alternative. This option will use the existing Anka Street corridor (see Figure 7 and Appendix D for plan and profile information), but will widen the roadway to 3, 4, or 5 lanes to increase capacity. This alignment takes advantage of the existing ROW, but some acquisition will be necessary as the existing ROW is only 60 feet wide and is insufficient for expanding the roadway. The rationale behind this alternative is to upgrade the existing corridor to improve the capacity issues, but does not achieve the secondary access objective.

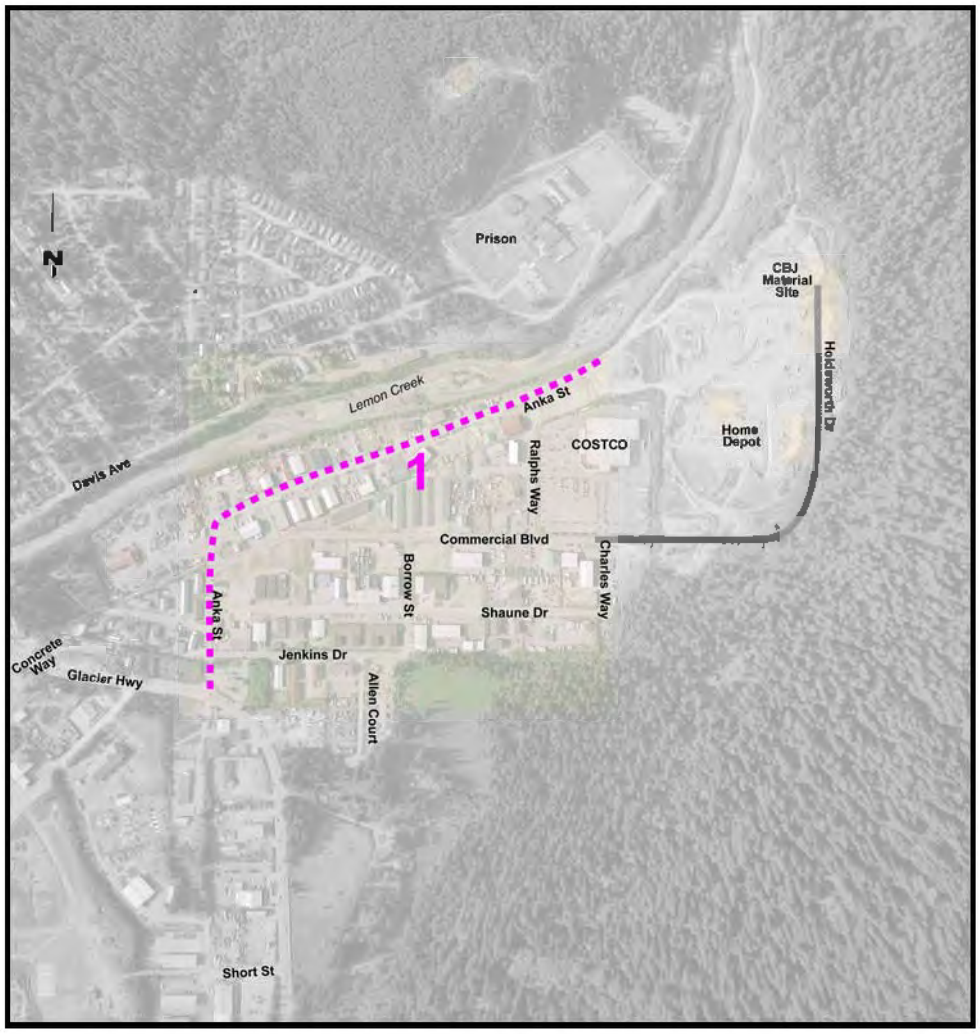

Figure 7: Alternative 1 - Anka Street Reconstruction

During the project scoping period, a similar alternative to maximize the function of the existing roads was suggested, which was to make the roads within the LFCD one-way roads. This alternative has the same benefits as simply reconstructing Anka Street, but does nothing to improve the function of the signal at the Anka Street/Glacier Highway intersection and would not provide a secondary access. One-way roads are commonly used in central business districts where high traffic volumes and closely spaced traffic signals operate most efficiently under one-way progression. The relatively low traffic volumes on the parallel sections of Shaune Drive, Commercial Drive, and Anka Street already operate at a high LOS, and installing one-way roads would tend to increase out-of-direction travel for minimal operational benefit.

3.3 Alternative 2 - Concrete Way Extension

Alternative 2 is an extension to Concrete Way to connect the northern section of Anka Street with the Glacier Highway (see Figure 8 and Appendix D for plan and profile information). ROW acquisition would be necessary to accomplish this extension. A variation on this alternative that arose out of scoping was to consider moving the traffic signal from Anka Street to Concrete Way or to develop a one-way couplet in combination with Anka Street.

Figure 8: Alternative 2 - Concrete Way Extension

3.4 Alternative 3 - Bench Road

Alternative 3 consists of constructing a new Bench Road beginning at the Glacier Highway/Short Street intersection and connecting into the far east end of Commercial Drive where it will connect with Holdsworth Drive that was recently constructed along the east side of Home Depot (see Figure 9 and Appendix D for plan and profile information). Two small bridges or culvert crossings of Vanderbilt Creek would be needed for this alternative. ROW acquisition would be necessary for this option. A variation on this alternative is to connect into Charles Way.

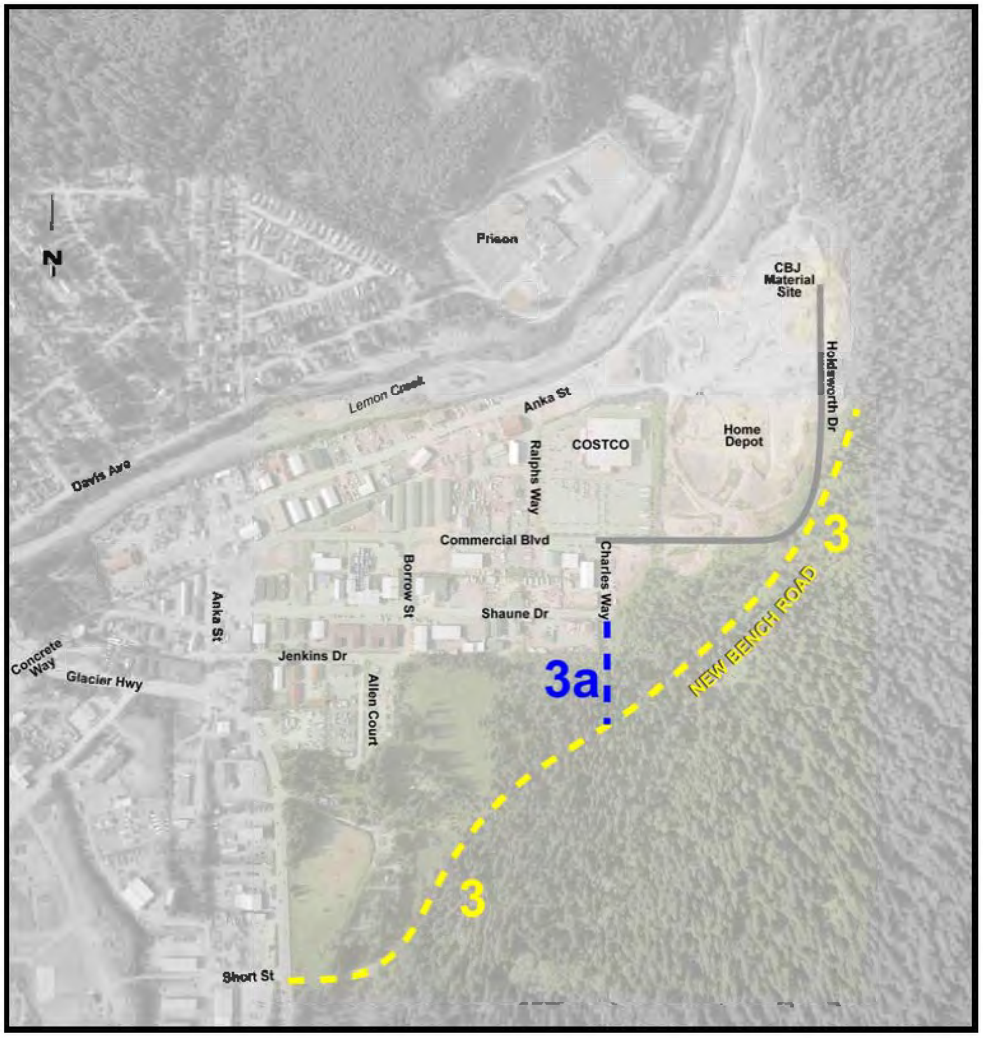

Figure 9: Alternative 3 - Bench Road

3.5 Alternative 4 - Borrow Street Extension

Alternative 4 is the Borrow Street Extension. This alignment provides an independent secondary access into the LFCD by extending Borrow Street across Vanderbilt Creek and connecting with the Glacier Highway at the Short Street intersection (see Figure 10 and Appendix D for plan and profile information). ROW acquisition would be required for this alternative. Variations on this alternative include extending Allen Court rather than Borrow Street or connecting to Glacier Highway north of Vanderbilt Creek.

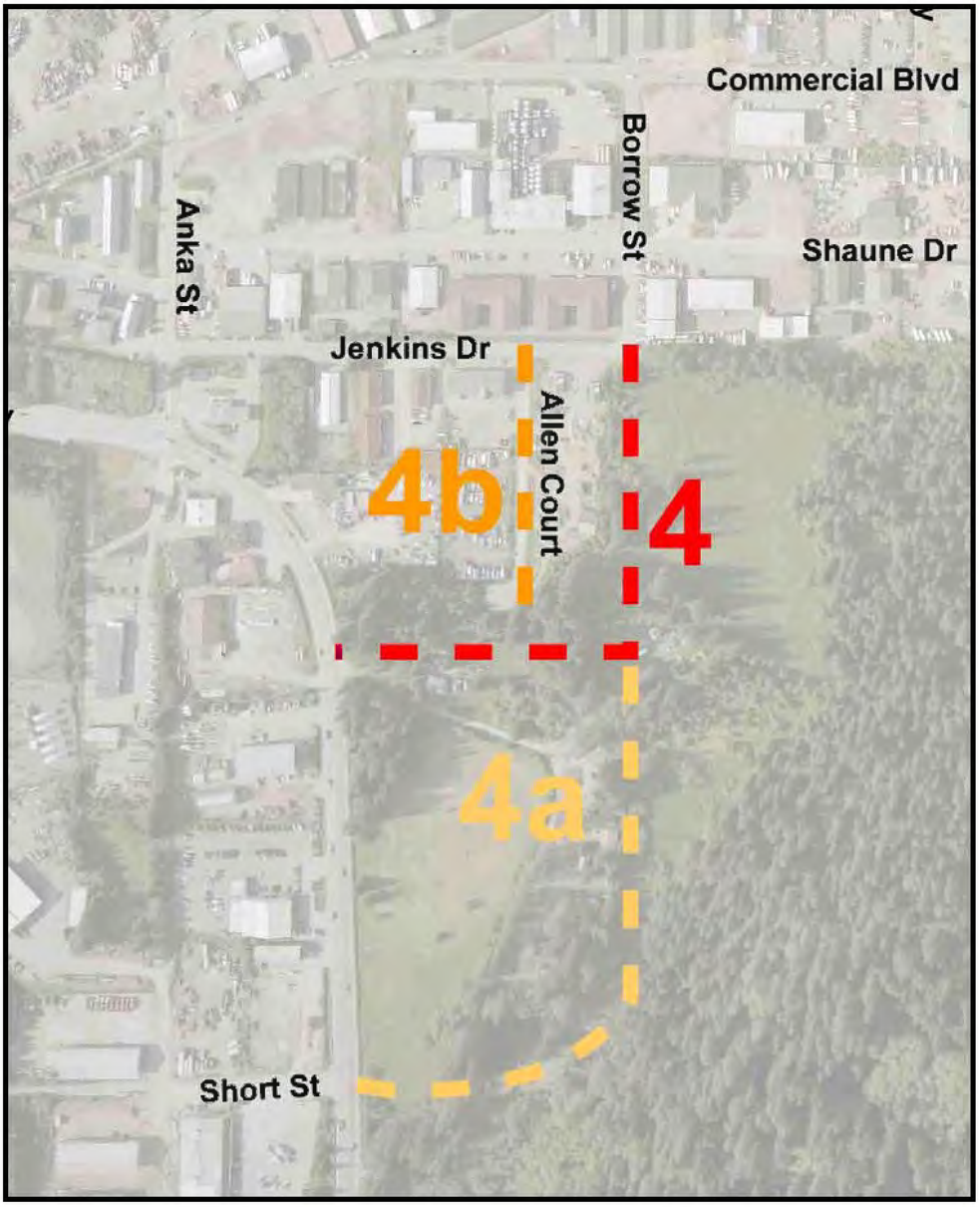

Figure 10: Alternative 4 - Borrow Street Extension

3.6 Alternative 5 - Lemon Creek Bridge to Davis Avenue

Alternative 5 consists of a new Lemon Creek bridge that would connect Anka Street to Davis Avenue. This alternative would require ROW acquisition to allow for the bridge and its construction. The bridge is shown conceptually on Figure 11, but the location of the bridge could be anywhere in this general area as required to minimize the acquisition and residential impacts (see also Appendix D for plan and profile drawings).

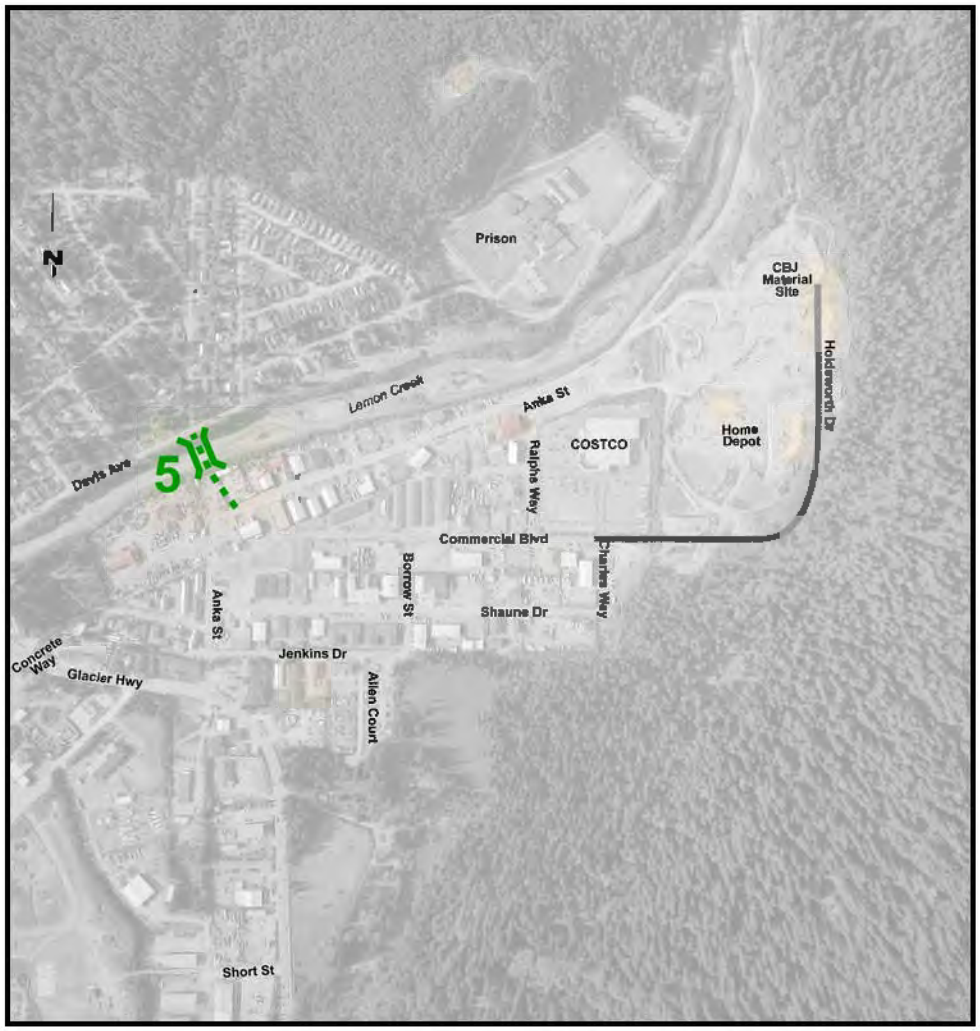

Figure 11: Alternative 5 - Lemon Creek Bridge to Davis Avenue

3.7 Alternative 6 - Lemon Creek Bridge to North Bench Road

Alternative 6 is the Lemon Creek Bridge to a northern bench road that would cross Switzer Creek and connect to the residential areas and Egan Drive north of the LFCD (see Figure 12 and Appendix E). This alternative is mentioned in the CBJ 2001 ATP as a long-term solution to the Lemon Creek traffic issues as it provides a completely separate access and allows for the future development of the area north of the existing residential developments.

Figure 12: Alternative 6 - Lemon Creek Bridge to North Bench Road

4.0 ENVIRONMENTAL REQUIREMENTS AND COORDINATION

4.1 Environmental Documentation Requirements

An important part of project development for transportation facilities is consideration of a project's potential environmental impacts. The environmental documentation requirements are largely driven by the funding requirements.

Federal Funding. If federal funding is spent on this project, the project will be required to follow the requirements of the National Environmental Policy Act and an environmental document (categorical exclusion, environmental assessment, or environmental impact statement) will be required depending on the level of impact. Federal money is not being used for the reconnaissance phase of the Lemon Flats Second Access (LFSA) project, but may be used on future phases.

State Funding. If the funding is State of Alaska funding, the primary environmental documentation would be the DOT&PF Environmental Checklist for state-funded projects. However, the United States Army Corps of Engineers (USACE) may need to prepare either an Environmental Assessment or an Environmental Impact Statement as part of their Section 404 permit process, depending on the extent of impacts to waters of the United States. They may request that the applicant (CBJ) prepare all the necessary supporting documentation for their environmental document.

Other Funding Sources. If the funding to mitigate development impacts is from CBJ or from private sources, then the environmental effort will be as required to obtain the necessary permits.

This project has the potential to impact wetlands that have been mapped by the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (see Figure 13). For Alternatives 2 through 6, wetlands ground-truthing and mapping will need to be performed prior to design. If the project affects wetlands, it will require a Section 404 Clean Water Act Permit from the USACE and a Section 401 Water Quality Certification from the State of Alaska Department of Environmental Conservation (DEC).

Alternatives 3 and 4 will potentially have to cross Vanderbilt Creek, an anadromous stream, as well as wetlands and Alternatives 5 and 6 will have to cross Lemon Creek, which is also habitat for anadromous fish (see Figure 14). These creeks contain coho, pinks, and chum salmon species as well as other resident species such as Dolly Varden and cutthroat trout.

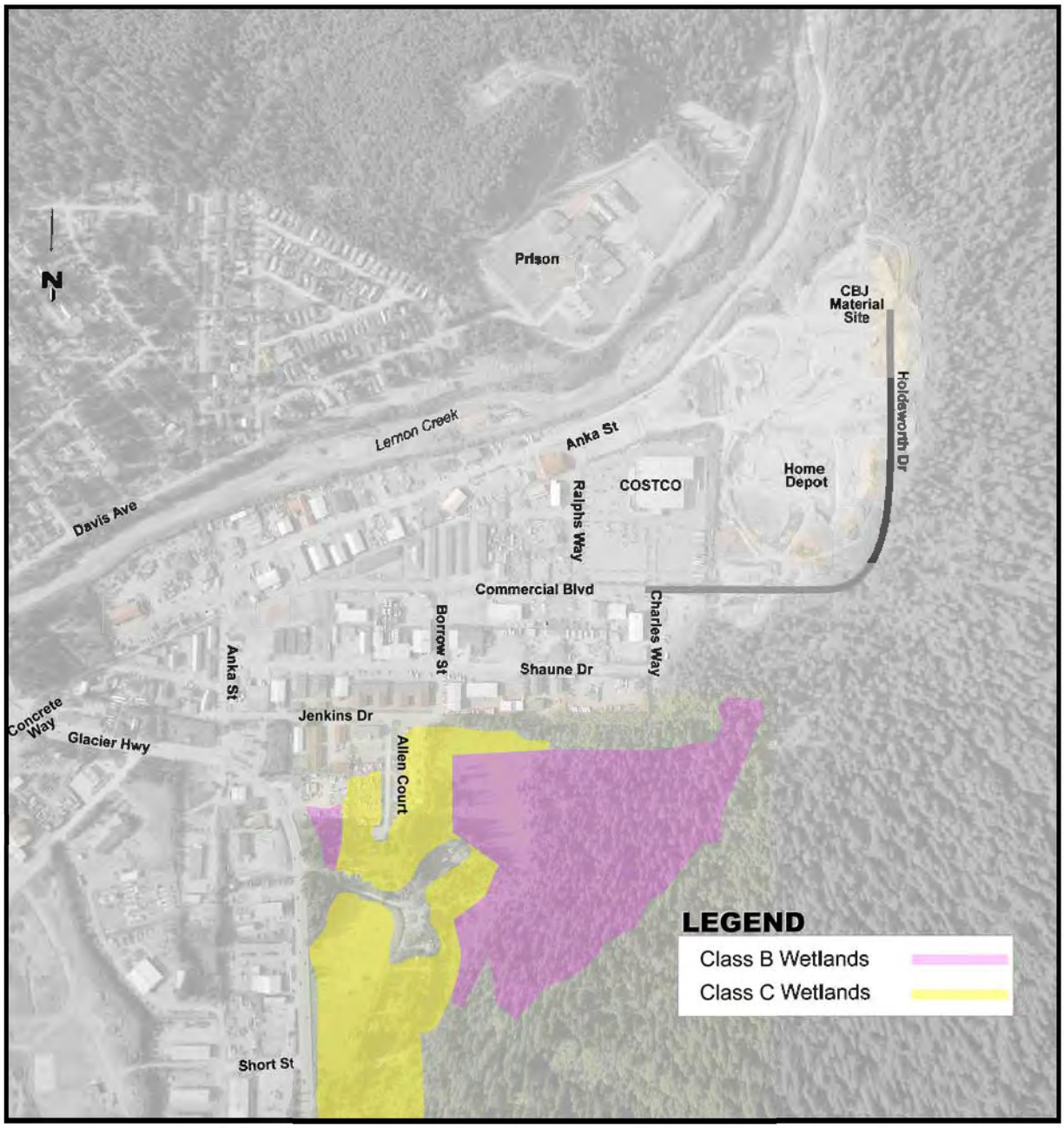

Figure 13: Mapped Wetlands in the Lemon Flats Commercial District

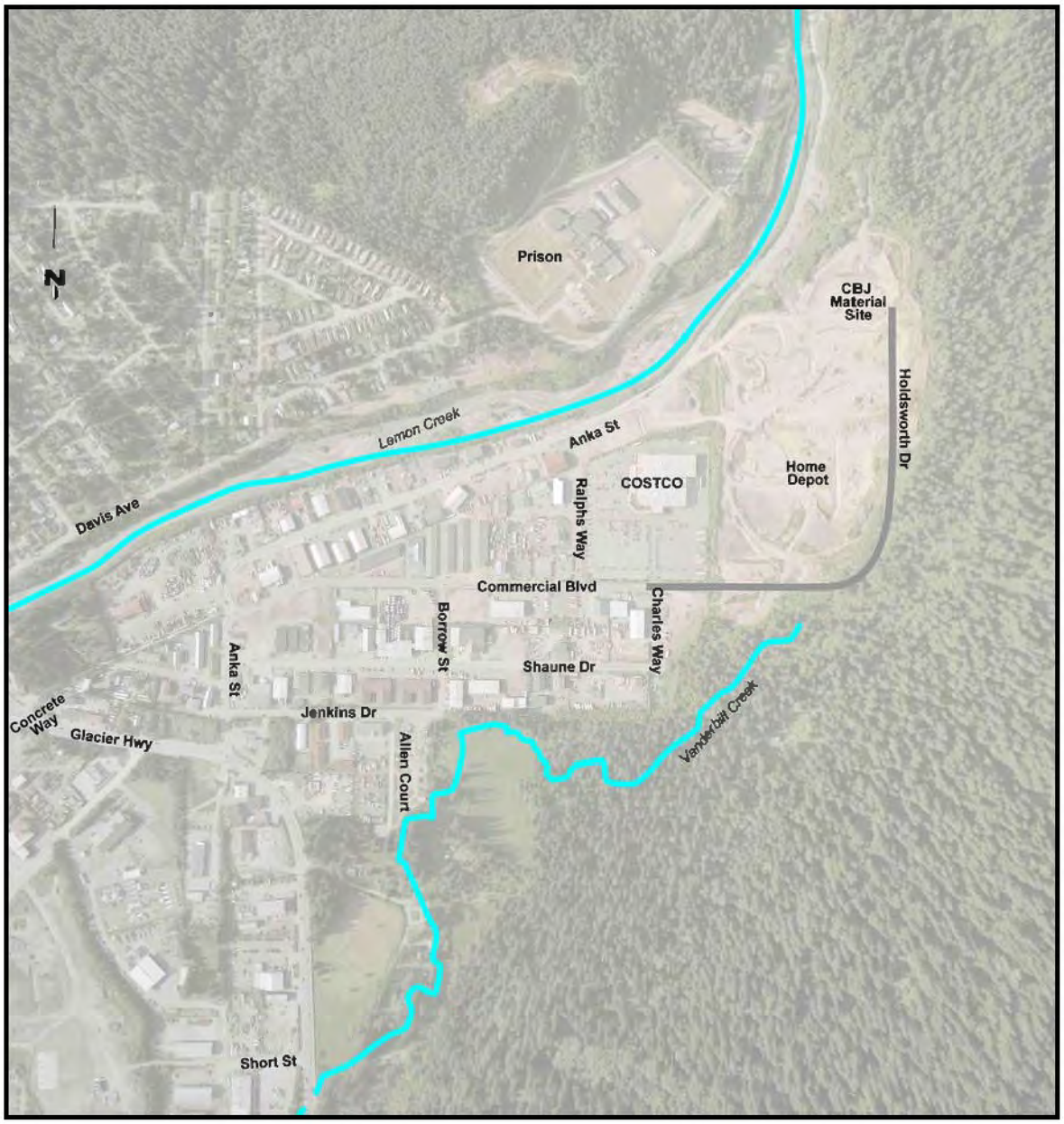

Figure 14: Anadromous Fish Streams in the Lemon Flats Commercial District

4.2 Preliminary Research Results

Preliminary research of the project corridor has revealed the following environmental conditions:

Air Quality: According to Alaska Administrative Code 18 AAC 50.15, Juneau is a Class II area. Alaska has designated four Class I areas, primarily areas within Denali National Park and three National Wildlife Refuges. All other areas in Alaska are currently classified as Class II.

The Mendenhall Valley area of Juneau has been designated a non-attainment area for PM-10. This project is not located in the Mendenhall Valley non-attainment area; it is in an area that is not designated as non-attainment for any of the regulated air pollutants. Therefore, this project is not expected to require an air quality conformity analysis.

Coastal Zone Management: A review of the *Alaska Coastal Zone Boundaries Atlas* found that the proposed project is located within the CBJ Coastal Management program boundaries. A Coastal Project Questionnaire or Multi-Agency Permit Application will be submitted to the Alaska Department of Natural Resources (ADNR) Office of Project Management and Permitting (OPMP) for review to ensure compliance with State and District coastal zone policies during the permitting process.

Land Ownership and Use: Land ownership in the area is a mixture of private, municipal, and state lands. Land use in the study area is a mixture of residential, commercial, industrial, and institutional.

Local Land Use Plans, Local Parks: Land use in Juneau is regulated under the CBJ Comprehensive Plan adopted in 1996 and Title 49 Land Use regulations. The 1996 Comprehensive Plan designates lands within the study area as a mixture of urban low density residential, medium density residential, general commercial, industrial, institutional and public use and resource development. Zoning districts included within the study area include industrial, general commercial, single-family residential, multi-family residential, and rural reserve.

State Land Use Plans, State Parks: State lands in the area are covered by the Juneau State Land Plan. No state parks will be affected by this proposed project.

Federal Recreational Area: The proposed project will not take place within a federal recreational area.

State Refuges, Critical Habitat Areas, and Sanctuaries: A review of the Alaska Department of Fish and Game (ADF&G) publication, *State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries* found that there are no state lands designated as state refuges, critical habitat areas, or sanctuaries in the proposed project vicinity. The Mendenhall Wetlands State Game

Refuge is located within half a mile from the project area, but would not be expected to be affected by this project.

National Wildlife Refuges: The USFWS website (*http://alaska.fws.gov/nwr/nwr.htm*) was consulted to determine if National Wildlife Refuges exist in the project corridor; none are present.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers: The study area is not located within any national parks, preserves, or monuments; therefore there will be no impacts to these resources. There are no wild and scenic rivers within the project corridor.

Historical, Archaeological, and Cultural Properties: The Alaska Heritage Resource Survey records were reviewed to determine if there were any known cultural resources present in the study area. The Lemon Creek Trail historically provided access to placer mining operations within the Lemon Creek drainage and is identified as an RS2477 trail by ADNR. This trail has not been evaluated for eligibility for listing on the Natural Register of Historic Sites. No documented resources were found within a mile of the proposed routes. Coordination with the State Historic Preservation Officer (SHPO) would be required to determine whether a field survey and eligibility determination are required and to obtain final concurrence with any determination of effects.

Anadromous Fish Streams/Essential Fish Habitat: A review of the ADF&G Atlas to the *Catalog of Waters Important to the Spawning, Rearing or Migration of Anadromous Fishes* identified both Lemon Creek (#111-40-10100) and Vanderbilt Creek (#111-40-10125) as anadromous streams. Lemon Creek has chum, coho, Dolly Varden, and cutthroat trout present. Vanderbilt Creek also has chum, coho, and Dolly Varden present. The ADNR Office of Habitat Management and Permitting (OHMP) will be consulted during the permitting process to determine if a Title 41 permit is required. If road construction is federally funded, an Essential Fish Habitat Assessment may be required by the National Marine Fisheries Service.

Threatened and Endangered Species: No listed or proposed species occur in the project corridor, and there is no designated or proposed critical habitat near the proposed project.

Bald Eagles: A bald eagle nest was located near the Alternative 3 Bench Road alignment in May 2007. The nest was reported to be in active use by a pair of eagles. Although the bald eagle is no longer a listed species under the Endangered Species Act, it remains protected under the Bald and Golden Eagle Protection Act. Consultation with the USFWS on any effect on the eagle nest would be required if the Bench Road alignment is carried forward. The USFWS may also require a survey to determine if there are any other eagle nests present along any of the corridors carried forward.

Navigability and Floodplain Management: As of May, 8, 2007, the water bodies in the project area are not listed on the USACE or United States Coast Guard list of navigable waterways.

Juneau participates in the Flood Insurance Program. The Federal Emergency Management Agency Issued Flood Map for the project area is 020090885B and the project study area includes areas within Zones A4 (within 100-year floodplain), B (between 100- and 500-year floodplain), and C (areas of minimal flooding) for Lemon Creek. The map does not show an established floodplain for Vanderbilt Creek. A flood hazard review would be required as part of the CBJ plan review process. The flood hazard review requires a demonstration that the proposed project will not create a flood hazard by increasing the flood height for a 100-year flood nor put the proposed improvement at risk from flood flows.

Contaminated Sites, Spills, and Underground Storage Tanks: A search of the DEC databases on May 7, 2007, revealed a contaminated site and a leaking underground storage tank site in the project area. Both sites are conditionally closed. CBJ will coordinate with DEC on any contaminated site issues raised during the project.

Water Quality: Both Lemon Creek and Vanderbilt Creek are listed as impaired water bodies under Section 303(d) of the Clean Water Act. Lemon Creek was designated as impaired in 1996 for turbidity and sediment. The sources of pollutants listed for the stream include urban runoff and gravel mining. A Water Body Recovery Plan with a total maximum daily load (TMDL) was approved for the creek in 1995. The University of Alaska Southeast has received funding to complete a sediment assessment. The assessment will attempt to define the natural sediment concentrations associated with glacial processes, as opposed to human-

caused sediment. Vanderbilt Creek was designated as impaired in 1996 for turbidity, sediment, and debris. A Water Body Recovery Plan and TMDL were approved in 1995. A local non-profit is working to remove debris from the creek and a joint interagency-landowner group is proposed to be formed to help implement identified recovery measures.

Construction projects with discharges to impaired water bodies can still be covered under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities if the project's Storm Water Pollution Prevention Plan (SWPPP) incorporates any conditions necessary for consistency with the assumptions and requirements of the TMDL, unless the TMDL established specifically precludes storm water discharges from construction. The project's SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an Environmental Protection Agency (EPA)-established or approved TMDL, including: whether or not the project discharge is identified in the TMDL; any allocations, requirements, and assumptions for the discharge; consultations with DEC and the EPA on the consistency of the SWPPP conditions with the approved TMDL; and any measures included in the SWPPP to ensure discharges are consistent with the TMDL and any relevant waste load allocation. Although waste load allocations have not been established for construction discharges, the plans do address impacts from construction discharges through the use of best management practices implemented through the SWPPP.

4.3 Anticipated Research Needs

The following specialty studies and analyses will potentially be included in the environmental documentation that is completed for this project:

- *Phase 1 Environmental Site Assessment*
- *Wetlands Function and Values Assessment*
- *Upland Vegetation Mapping and Classification*
- *Bald Eagle Survey*
- *Aquatic Resources Assessment*
- *Wetlands Delineation*
- *Noise Analysis*
- *Hydrological Study*
- *Archaeological Survey*
- *Juvenile and Adult Fish Studies*

4.4 Environmental Permitting Requirements

The following environmental permits and approvals may be required for this project, depending on the alternatives carried forward and the source of construction funding:

- USACE Section 404 Permit for fill in wetlands
- ADNR OPMP Coastal Consistency Determination
- DEC Section 401 Water Quality Certification
- ADNR OHMP Title 41 Fish Habitat Permit
- EPA NPDES General Permit for Construction Activities in Alaska (including consultations with DEC and EPA on the TMDLs)
- Concurrence from SHPO that the project will not affect eligible or listed historic properties
- Consultation with the USFWS under the Bald and Golden Eagle Protection Act
- CBJ Noise Permit for construction activities after 10 p.m. and before 7 a.m.

4.5 Coordination

An initial agency meeting was held on May 22, 2007, in Juneau. Comments received at the meeting and/or in writing are documented in the Scoping Summary Report for the project (DOWL Engineers 2007). Some of the major issues that came up during scoping that may need to be addressed in the environmental document include:

- Impacts on anadromous streams and the need to determine the upstream extent of fish habitat in the watershed.
- Impacts on wetlands.
- Accommodation of existing tributaries and drainages at road crossings.
- Water quality effects on Lemon and Vanderbilt Creeks, which are both listed as impaired water bodies.
- Use of the area by a falconer.
- Impacts on residential areas.
- Limited existing access to residential areas for public safety services.

A summary of this initial agency scoping meeting is included in the Scoping Summary Report (Appendix B).

5.0 PEDESTRIAN AND TRANSIT ACCOMMODATIONS

Pedestrian facilities are assumed to be part of the road cross-section in all of the conceptual analyses. Typical facilities consist of:

- An 8-foot-wide paved pathway will be provided on one side of the roadway.
- A 5-foot-wide concrete sidewalk will be provided on the opposite side of the roadway in the urban sections. In rural sections, pedestrian facilities will only be provided on one side of the road. Sidewalks and paths will also be separated from the roadway to allow room for future lanes to be built.
- On bridges, pedestrian facilities are assumed to be an 8-foot-wide walkway on one side and a 5-foot-wide walkway on the other side.

Pedestrian facilities should be constructed in accordance with Americans with Disabilities Act standards. Pedestrian counts should be conducted prior to design to determine pedestrian usage and circulation. Capital Transit should also be consulted to determine the needs for bus stops and pedestrian connections as part of the improvements. Existing facilities are located on the Glacier Highway at the Anka Street intersection and should be considered in more detail if signal modifications to the Glacier Highway result from Alternatives 2, 3, or 4.

6.0 TRAFFIC COMPARISON

6.1 Signalization

The Anka Street/Glacier Highway intersection is the only signalized intersection in the study area that could be affected by the proposed alignments. This intersection has an eight-phase operational traffic signal with loop detectors in all traffic lanes. Pre-emption for emergency use is not currently installed on this corridor of the Glacier Highway.

All of the other potential alignment connection points and the intersecting side streets are stop-controlled.

To determine whether or not a signal should be installed at an intersection, the Manual on Uniform Traffic Control Devices (MUTCD) suggests using eight warrants to determine operational and safety needs. The satisfaction of a signal warrant or warrants does not in itself require the installation of a signal.

Descriptions of each warrant are listed below:

- **Warrant 1, Eight-Hour Vehicular Volume** - This warrant is a two-part warrant. Condition A is the Minimum Vehicular Volume condition and is intended for application at locations where a large volume of intersecting traffic is the main reason to consider installing a signal. Condition B is the Interruption of Continuous Traffic condition and is intended for application at locations where Condition A is not met and where the traffic volume on the major street is so heavy that traffic on the intersection minor street suffers excessive delay or conflict in entering or crossing the main street. The intent of Warrant 1 is for it to be treated as a single warrant. If Condition A is satisfied, then the criteria for Warrant 1 is satisfied, and Condition B and the combination of Conditions A and B are not needed. The same applies to Condition B.
- **Warrant 2, Four-Hour Vehicular Volume** - This warrant is intended to be applied where the volume of intersecting traffic is the main reason to consider installing a signal. The 70 percent factor is to be applied in communities with less than 10,000 population, or where the main street has a posted speed of 40 mph or above.

- **Warrant 3, Peak Hour** - This warrant is intended for use at a location where traffic conditions are such that for a minimum of one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. This signal warrant shall only be applied in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.
- **Warrant 4, Pedestrian Volume** - This warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.
- **Warrant 5, School Crossing** - This warrant is intended for application where the fact that schoolchildren cross the major street is the main reason to consider installing a signal.
- **Warrant 6, Coordinated Signal System** - Progressive movement in a coordinated signal system sometimes necessitates installing signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.
- **Warrant 7, Crash Experience** - This warrant is intended for application where the severity and frequency of crashes are the main reasons for considering a signal.
- **Warrant 8, Roadway Network** - This warrant is used when installing a signal at an intersection might be justified to encourage concentration and organization of traffic flow on a roadway network.

Signal warrants were evaluated for each of the alternatives. The following summarizes the findings shown in Tables 1 and 2:

- For Alternative 0, the Davis Avenue/Glacier Highway intersection meets Warrants 1A and 1B.
- For Alternative 2, the Concrete Way/Glacier Highway intersection meets Warrants 1A, 1B, 2, and 3.
- For Alternative 3, the Short Street/Glacier Highway intersection meets Warrants 1A and 1B.

- For Alternative 4, the Short Street/Glacier Highway intersection meets Warrants 1A and 1B.
- For Alternative 5, the Davis Avenue/Glacier Highway intersection meets Warrants 1A, 1B, and 2.

Progression was evaluated on the Glacier Highway under each of the alternatives assuming traffic signals were installed at the warranted locations. The following impacts were noted:

- The close spacing between Anka Street and Concrete Way results in a 25 percent impact on the travel speed and is not recommended.
- Short Street, Anka Street, and Davis Avenue are at approximately quarter-mile spacing and have minimal impact on the progression speed of Glacier Highway.

Table 1: Signal Warrant Analysis

	Warrant #1 Eight-Hour Vehicular Volume		Warrant #2 Four-Hour Vehicular Volume	Warrant #3 Peak Hour	Warrant #4 Pedestrian Volume	Warrant #5 School Crossing	Warrant #6 Crash Experience	Warrant #7 Roadway Network
	Condition A	Condition B						
Alternative 0/1 Anka Street/Glacier Highway	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Alternative 2 Concrete Way/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met
Alternative 3 Short Street/Glacier Highway	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Alternative 4 Short Street/Glacier Highway	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Alternative 5 Davis Avenue/Glacier Highway	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met	Not Met

Table 2: Seventy Percent Factored Signal Warrant Analysis*

	Warrant #1 Eight-Hour Vehicular Volume		Warrant #2 Four-Hour Vehicular Volume	Warrant #3 Peak Hour	Warrant #4 Pedestrian Volume	Warrant #5 School Crossing	Warrant #6 Crash Experience	Warrant #7 Roadway Network
	Condition A	Condition B						
Alternative 0/1 Anka Street/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met
Alternative 2 Concrete Way/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met
Alternative 3 Short Street/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met
Alternative 4 Short Street/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met
Alternative 5 Davis Avenue/Glacier Highway	***Met***	***Met***	***Met***	***Met***	Not Met	Not Met	Not Met	Not Met

* 70 Percent Factored Analysis may be used when the major street speed exceeds 40 mph.

6.2 Traffic Operations

Diversion of traffic for each of the alternatives was evaluated based on the existing turning movement patterns. Preliminary analysis yielded the following results:

- Alternative 1 does not change the capacity of the Anka Street/Glacier Highway intersection and does not provide a secondary access. No diversion of traffic is anticipated. Emergency access would remain limited to the single access.

- Alternative 2 decreases the delay at the Anka Street/Glacier Highway by a few seconds. However, due to its close proximity to the existing signal, the possibility of signalizing Concrete Way (in addition to Anka Street) is low. Without a signal, the left turns made from the Concrete Way intersection must wait for gaps in the opposing traffic. The traffic volumes are estimated in Figure 15.

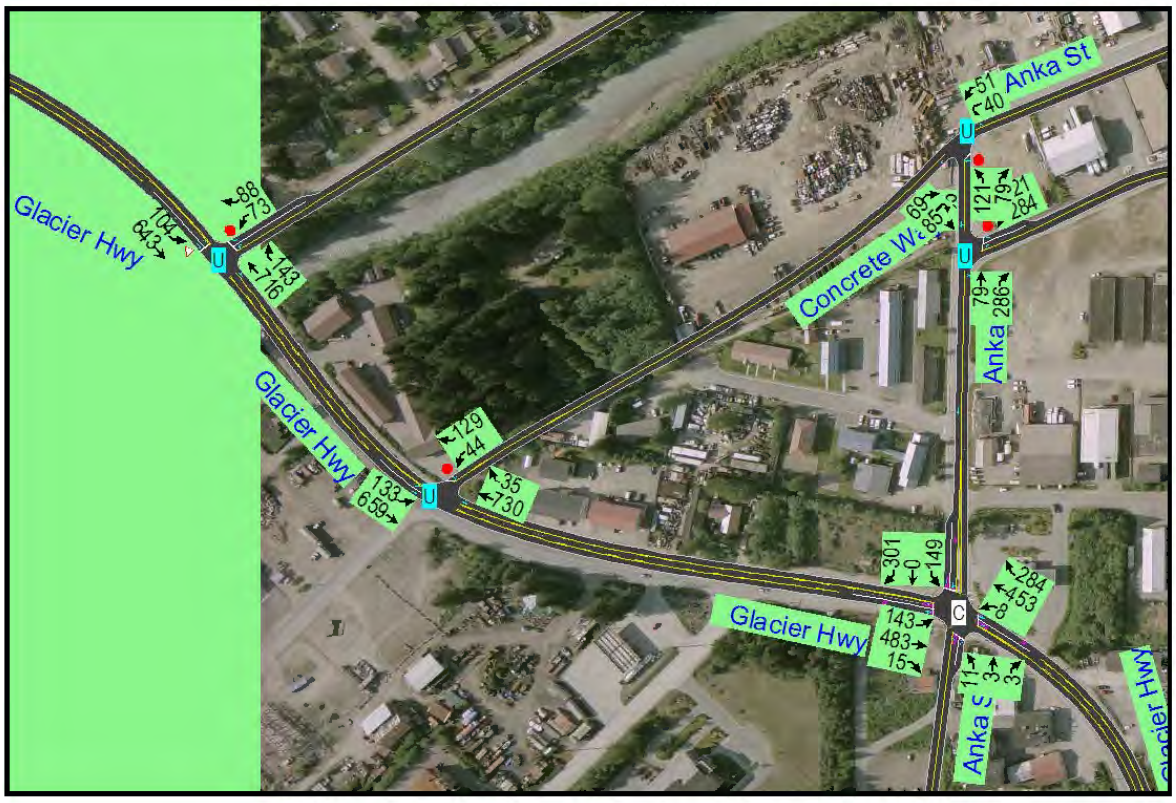

Figure 15: Projected 2027 P.M. Peak Hour Turning Movement Volumes for Alternative 2

- Alternative 3 improves the Anka Street/Glacier Highway intersection. This alternative allows for a completely independent access into the LFCD, and with the distance from Anka Street, Short Street could be signalized without significant impacts to progression on Glacier Highway (see progression analysis in Section 6.1).

Figure 16: Projected 2027 P.M. Peak Hour Turning Movement Volumes for Alternative 3

- Alternative 4 is very similar to Alternative 3 except that due to its circuitous route to the commercial activities in the LFCD, not as many drivers would be likely to use this route. It does make slight operational improvements to the Anka Street intersection and allows for a secondary access. If the route connects with Short Street, the intersection spacing is adequate for the placement of a future signal.

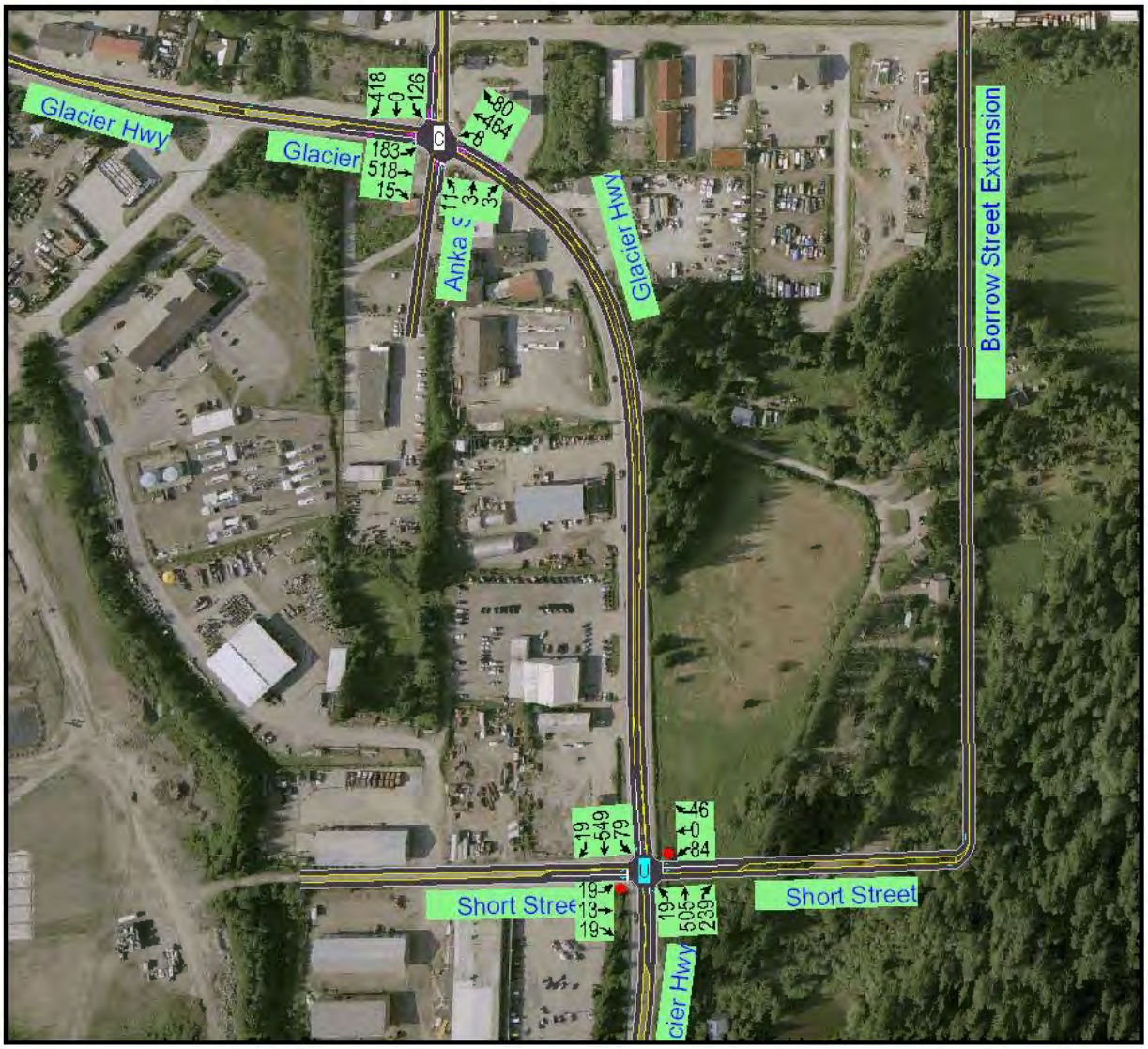

Figure 17: Projected 2027 P.M. Peak Hour Turning Movement Volumes for Alternative 4

- Alternative 5 slightly improves operations at Davis Avenue, but actually increases delay at Anka Street by routing some of the left-turning movements from Davis Avenue to the signalized left turn movement at Anka Street.

Figure 18: Projected 2027 P.M. Peak Hour Turning Movement Volumes for Alternative 5

- Alternative 6 improves the intersection of Anka Street and Glacier Highway by pulling much of the left-turn movements from this intersection to access LFCD via a northern bench road. This alternative will be made most effective by connecting to both Anka Street and to the newly constructed Holdsworth Drive. A new 200-foot-long bridge and ROW acquisition would be required to accomplish this alternative as envisioned by the CBJ Comprehensive Plan (see Appendix E). The impacts to the connection point to the Switzer Creek area were not evaluated as part of this analysis.

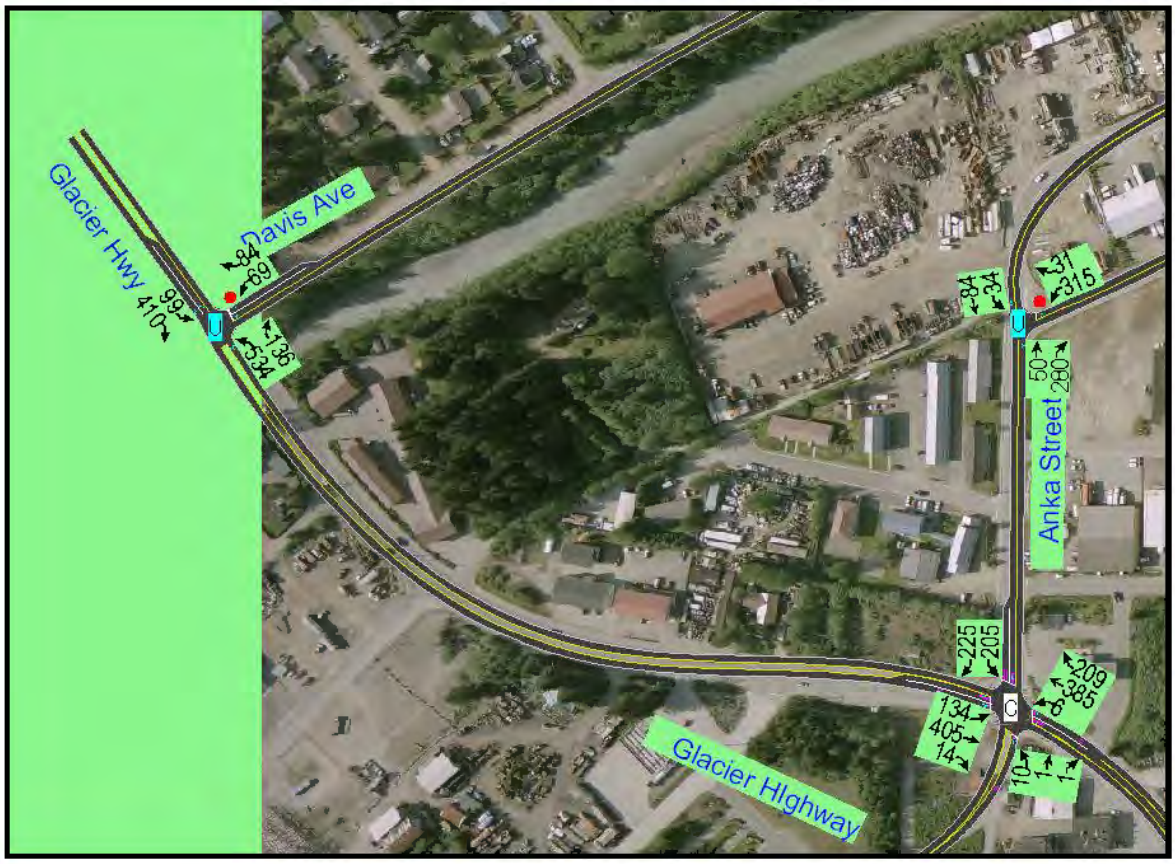

Figure 19: Projected 2027 P.M. Peak Hour Turning Movement Volumes for Alternative 6

7.0 RIGHT-OF-WAY REQUIREMENTS

ROW acquisition would be required for all of the build alternatives. The following summarizes the approximate acres of acquisition required for each alternative:

Alternative	ROW Acquisition (acres)
0	0
1	0
2	1.4
3	6.4
4	2.9
5	0.8
6	>10

8.0 PUBLIC INVOLVEMENT

The public involvement program for the project provides for two-way communication between the project team and the public on project status, design, and public issues and concerns. The public involvement program provides project information to the public at all stages of the project and solicits input on the project throughout the design process. A Public Involvement Plan (see Appendix C) has been submitted and approved for this project. The public involvement program effort to date has followed the LFSA Public Involvement Plan and has included the following:

- Development and maintenance of the potentially affected interests mailing lists.
- Establishment and maintenance of a project office with up-to-date project information that is available for public use.
- Completion of public scoping efforts that included one public meeting with notices sent to the potentially affected interests mailing list and display ads published in the Juneau Empire.
- Completion of agency scoping efforts, including an agency scoping letter, an agency meeting, and follow-up calls to agencies to gather as much input as possible.
- A project-specific link to CBJ's website was developed and will be maintained for the duration of the project (*www.juneau.lib.ak.us/engineering/*).

- Establishment of a project-specific electronic mail address to collect public comments and questions. The address is *secondaccess@dowl.com* and it is checked daily.

A Scoping Summary Report (see Appendix B) was prepared after the scoping period to summarize project issues raised by the public and agencies during the scoping process. The scoping comments received to date are generally summarized below. Appendix B provides a copy of all comments received through scoping.

Overall Project Comments:

- CBJ has already made up its mind that it wants to go through the watershed.
- CBJ should not take property through eminent domain.
- The route should meet CBJ arterial road standards.
- The Comprehensive Plan, Juneau Wetland Management Plan, and the Parks and Recreation Plan should be considered.
- Seeking a second access is unneeded as traffic counts are well within acceptable traffic load limits.
- There should not be more traffic lights on Glacier Highway.
- Split traffic between Commercial Boulevard and Anka Street with no more lights.

Alternative Specific Comments:

Alternative 1: Anka Street Reconstruction

Oppose: Despite being the least destructive and cheapest alternative, it does not provide a second access into Lemon Flats, which is the project purpose.

Favor: This is the least environmentally damaging option.

Alternative 2: Concrete Way Extension

Oppose: Alignment does not allow for a perpendicular approach to the Glacier Highway.

Favor: This alignment seems to have the least impact to the businesses in the LFCD.

Alternative 3: Bench Road

Oppose: Expensive, negative wetlands/ecological impact, too close to homes, and runs through Quigley homestead.

Favor: Provides an independent access for emergency response and is a long-term solution.

Alternative 4: Borrow Street Extension

Oppose: Will have residential impacts.

Favor: None received.

Alternative 5: Lemon Creek Bridge to Davis Avenue

Oppose: Has the potential to exacerbate traffic issues in the LFCD.

Favor: This option would provide a direct pedestrian route from the residential area to the LFCD.

Alternative 6: Lemon Creek Bridge to North Bench Road

Oppose: Would require extensive roadway construction to connect the bridge to existing roadways.

Favor: As a long-term solution, this should connect to the Bench Road option.

9.0 COST ESTIMATE

9.1 Cost Estimate and Construction Schedule

9.1.1 Assumptions

A conceptual cost estimate was developed based on the following assumptions:

- The road improvements were estimated based on per lineal foot of road cost for comparison purposes only. A more detailed estimate will be needed for estimating the construction budget.
- A 50 percent contingency was applied to the total to account for uncertainties at the concept level.
- Preconstruction design and project administration is estimated at 10 percent of the project cost.

- Construction administration is estimated at 15 percent of the project cost.
- The estimates are based on a typical roadway section with one lane in each direction with shoulders and pedestrian facilities along both sides.
- Bridge estimates were calculated based on a $300 per square foot price (inclusive of abutments, retaining walls, piles, etc.).

9.1.2 Conceptual Cost Estimates

A planning level cost estimate of each alternative is summarized in Table 3.

Table 3: Conceptual Estimate

Item	Alt. 1	Alt. 2	Alt. 3	Alt. 3A	Alt. 4	Alt. 4A	Alt. 4B	Alt. 5	Alt. 6
Base Bid									
Cost									
Road Construction	$3,520,000	$2,820,000	$4,310,000	$3,500,000	$1,770,000	$2,660,000	$1,380,000	$190,000	$14,590,000
Bridge Construction	$0	$0	$0	$0	$0	$0	$0	$3,600,000	$2,400,000
Other Structures	$0	$0	$50,000	$90,000	$0	$0	$0	$0	$0
Traffic Signals	$0	$0	$350,000	$350,000	$0	$0	$0	$0	$0
Utilities	$200,000	$200,000	$250,000	$250,000	$150,000	$150,000	$150,000	$100,000	$600,000
Contingency (50%)	$1,860,000	$1,510,000	$2,480,000	$2,100,000	$960,000	$1,410,000	$770,000	$1,950,000	$8,800,000
Preconstruction Design (10%)	$560,000	$450,000	$740,000	$630,000	$290,000	$420,000	$230,000	$580,000	$2,640,000
Construction Administration (15%)	$840,000	$680,000	$1,120,000	$940,000	$430,000	$630,000	$350,000	$880,000	$3,960,000
GRAND TOTAL	**$6,980,000**	**$5,660,000**	**$9,300,000**	**$7,860,000**	**$3,600,000**	**$5,270,000**	**$2,880,000**	**$7,300,000**	**$32,990,000**

10.0 ALTERNATIVE COMPARISON

This section provides a general description of the advantages and disadvantages of the conceptual alignment alternatives as well as the "no-build" option and concludes with a comparison to determine the alternatives to be considered for further study.

10.1 Purpose and Need Comparison

The primary objective of this project is to provide a second access into the LFCD. In conjunction, when a second access is provided, an alternative emergency access is gained. The traffic volumes and patterns reviewed indicate that the location where the second access intersects the Glacier Highway is the key element in providing road connectivity and accomplishing this goal. The table on the following page indicates how each alternative fares in comparison to the primary purpose of this project. Alternatives 0 and 1 do not achieve the purpose of the project, as they do not provide a secondary access. Alternative 2 does provide a second access, but the location is limited due to close proximity to the existing Anka Street intersection. One intersection or the other can be signalized, but probably not both. Alternatives 3, 4, and 6 provide a completely independent new access into and out of the LFCD. Alternative 5 utilizes the existing intersection of Davis Avenue/Glacier Highway as its second access point.

Another purpose of the project is to resolve the congestion at the Anka Street and Glacier Highway intersection. Alternative 0 does nothing to improve the congestion at the intersection. Alternative 1 may improve the congestion by widening the intersection to allow for more queuing. Alternatives 2, 3, 4 and 6 will provide for another access into the LFCD, which will reduce volume at the Anka Street/Glacier Highway intersection. Alternative 5 has the potential to add volumes to the Anka Street/Glacier Highway intersection by routing traffic from the residential areas to Glacier Highway via Anka Street instead of using their current access of Davis Avenue.

The third purpose of the project is to separate heavy vehicle traffic from passenger traffic. Alternatives 0, 1, and 5 do nothing to separate the heavy vehicles using the material sites from the passenger vehicles. The remaining alternatives have the potential to separate heavy

vehicle traffic from passenger traffic by providing new, alternative routes to both the commercial activities and material sites.

Element of Project Purpose and Need	Alternative						
	0	1	2	3	4	5	6
	Meets Objective?						
Provides Second Access	No	No	Yes	Yes	Yes	Yes	Yes
Resolves Congestion at Anka/Glacier Intersection	No	Yes	Yes	Yes	Yes	No	Yes
Separates Heavy Commercial Traffic from Passenger Traffic	No	No	Yes	Yes	Yes	No	Yes
Provides Alternative Emergency Access	No	No	Yes	Yes	Yes	Yes	Yes

10.2 Geometric and Highway Design Desirability

The desirability of the geometric and highway design considers the type of roadway that can be constructed based on the horizontal and vertical alignments for a particular design speed. From a constructability standpoint, all of the options appear to be able to achieve the minimum criteria; however, there will be a few challenges.

- Elevations of the Lemon Creek Bridge for Alternative 5 will be a key factor and could result in significant ROW acquisition at the connection point to Davis Street.
- Curve radii under Alternative 2 could result in significant ROW acquisition at the intersection with Anka Street in order to meet minimum intersection spacing and sight distance criteria.
- The Bench Road alternatives will require significant analysis to minimize impacts to the creeks, residential properties, and to connect to the existing roadway elevations.
- Alternative 4 creates a circuitous route that will diminish its effectiveness as a second access. Motorists traveling from the gravel pits or the new commercial developments are unlikely to use Alternative 4 due to the large numbers of turns that will increase travel time, especially for trucks.

10.3 Compatibility with Existing Development Plans

The CBJ 2001 ATP has a number of recommended improvements for the Lemon Creek area. The short-term solution of signalizing the Anka Street/Glacier Highway intersection with additional turn lanes and bus pullouts has already been constructed. Within the ATP, the

Davis Avenue/Anka Street Bridge or a new Lemon Creek crossing that connects Davis Avenue and Anka Street is recommended as medium-term solution (similar to Alternative 5) to allow traffic from the residential developments to use the LFCD without having to access the Glacier Highway. The long-term solution recommended by the plan is similar to Alternative 6 in which a bench road is constructed north of the current residential developments to allow for the further development of the Lemon Creek area.

10.4 Environmental Impacts

Wetlands and anadromous fish streams (Lemon Creek and Vanderbilt Creek) are located within the study area. Alternatives 3 through 6 may have impacts to these natural resources. Mitigation efforts would be required for these alternatives including the possible construction of bridges and/or fish passage culverts. Direct, indirect, and visual impacts to archaeological, cultural, and historic resources will be determined during the design phase. Noise, air quality, and other more detailed environmental studies will be required to identify the impacts. Alternative 4 has perhaps the greatest potential for wetland and stream impacts and may require bridging and/or relocation of portions of Vanderbilt Creek.

10.5 Residential and Commercial Impacts

Within the LFCD there are few residential properties. A halfway house is present near the Anka Street/Glacier Highway intersection. There are a few residential subdivisions and homesteads south of the LFCD and several businesses within the LFCD that may be affected by construction of the LFSA. Alternatives 3, 4, 5, and 6 will potentially impact residential and commercial parcels. Alternative 4 likely has the most direct residential impacts both in routing the road adjacent to homes, but also in the potential for full property acquisitions.

Commercial impacts on specific businesses in the LFCD could result from rerouting of traffic during and after construction to a more attractive route, and/or from direct acquisition of commercial property in the cases of Alternative 2 and Alternative 5.

10.6 Traffic Operations

Alternative 3 provides the greatest benefit to operations on Glacier Highway and on Anka Street. Alternatives 2, 4, and 6 also improve operations at Anka Street whereas Alternative 5

increases delay at Anka Street. Alternatives 3 and 4 will likely eventually result in an additional signalized intersection on Glacier Highway.

10.7 Hydrology and Soils

While no specific hydrologic or soils testing has been performed for this project, other projects in the area have provided enough data to make preliminary hydrologic and soils determinations. Alternatives 0, 1, and 2 do not have significant hydrologic or soil issues to address because they do not cross into the Lemon Creek or Vanderbilt Creek and wetlands area. Alternatives 3 and 4 are near the wetlands area and cross Vanderbilt Creek which will require a thorough hydrological analysis of drainage flows to determine the respective culvert size necessary. It is likely Alternative 4 will also necessitate bridge crossings due to its wetland impact. The soils along these two alternatives are likely to be overburden with peat and other organics that would need to be removed to a full depth of up to 5 feet before construction. Alternatives 5 and 6 cross Lemon Creek and would require bridges and full hydraulic/hydrologic analysis to address scour potential, bridge height, volume of flow, etc.

10.8 Summary and Recommendations

To better facilitate comparison, the alternatives are shown on Figure 20, and the findings of the alternatives analysis are summarized in Table 4. The evaluation criteria that are the most relevant from an engineering and planning standpoint are listed in no particular order. A “+” indicates a favorable score when measured against the criteria, a “-” indicates a negative score, and a “+/-” indicates a fair score.

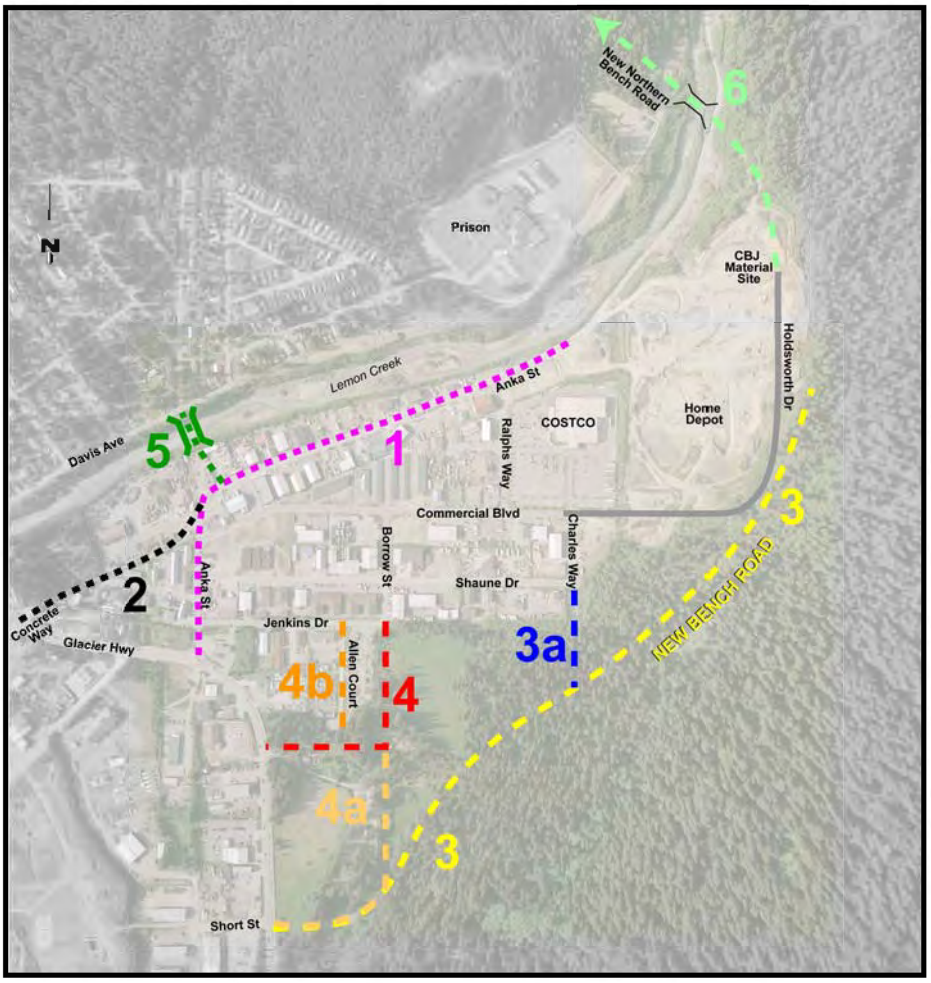

Figure 20: Alternatives Comparison

Table 4: Lemon Creek Second Access Alternatives Comparison Matrix

	Alternative						
	0	1	2	3	4	5	6
Criteria/Issue	No-Build	Anka Street	Concrete Way	Bench Road	Borrow Street	Lemon Creek Bridge/Davis Avenue	Lemon Creek Bridge/North Bench Road
Meets project purpose and need	-	-	+/-	+	+	+/-	+
Minimizes ROW acquisition	+	+	-	-	-	-	-
Minimizes environmental impacts	+	+	+	-	-	-	-
Minimizes impacts to residential properties	+	+	-	-	-	-	+/-
Resolves long-term traffic congestion issues	-	-	+/-	+	+	+/-	+
Provides direct connection to LFCD	-	-	-	+	+/-	-	+/-
Facilitates future LFCD development	-	-	+/-	+	+/-	+	+
ROW acquisition (acres)	0	0	1.4	6.4	2.9	0.8	>10
Conceptual construction cost (Millions)	$0	$7.0	$5.7	$9.3	$5.3	$7.3	$33.0

The rationale in favor of recommending a secondary access does not hinge on one factor. Traffic capacity, or any other single factor, does not justify the recommendation. However, the net effect of the marginal traffic operations, safety concerns regarding emergency access and response times, the need to separate heavy commercial traffic from lighter passenger and pedestrian traffic, and increased development pressure results in the strong recommendation to reject the No-Build Alternative and Alternative 1. Additionally, it is important to acknowledge that as the LFCD gets more and more developed, less and less area is available for access. It is critical from a planning perspective to identify an access plan and ensure that the access corridors are preserved and built as funding becomes available.

Alternatives 4 and 5 are also not recommended. The residential and environmental impacts of Alternative 4 do not seem reasonable in light of the limited benefit of such a circuitous route. It is not reasonable to assume that motorists would choose to by-pass a more convenient route (Anka Street/Glacier Highway) in favor of the Alternative 4 access.

Alternative 5 would likely create more congestion at the Anka Street/Glacier Highway intersection and routing heavy commercial traffic down Davis Avenue is not consistent with the residential land use north of Lemon Creek.

Based on the reconnaissance analysis, Alternatives 2, 3, and 6 are recommended to be carried forward for a more detailed engineering and environmental analysis. The reconnaissance studies clearly indicate that Alternatives 3 and 6 best accomplish the project purpose of providing secondary access to LFCD and have the potential to be longer-term solutions than the other alternatives. Alternatives 3 and 6 are also the two most expensive alternatives, so Alternative 2 may be a desirable near-term solution while funding for Alternative 3 and/or 6 is programmed.