

# MEMORANDUM

CITY/BOROUGH OF JUNEAU  
155 South Seward Street, Juneau, Alaska 99801

**DATE:** November 8, 2012

**TO:** Planning Commission

**FROM:** Beth McKibben, Planner *BM*  
Community Development Department

**FILE NO.:** CSP2012 0015

**PROPOSAL:** Lands and Resources study to identify municipal property eligible for improvement and sale as residential property.

## GENERAL INFORMATION

**Applicant:** City and Borough of Juneau

**Property Owner:** City and Borough of Juneau

**Property Address:** Multiple addresses

**Legal Description:** Multiple legal description

**Parcel Code No.:** Multiple parcel codes

**Site Size:** Switzer Development Area 2A- 3.2 acres  
Switzer Development Area 3- 27 acres  
Pederson Hill Development Areas 3 &4 – 124 acres

**Comprehensive Plan Future  
Land Use Designation:** MDR

**Zoning:** D1, D5, D15

**Utilities:** CBJ Water & Sewer to parcel edges

**Access:** Glacier Highway, Mountain Avenue, Douglas Highway

**Existing Land Use:** Vacant

### **ATTACHMENTS**

- A- October 23, Memorandum from Heather Marlow, Lands & Resources Manager and Rorie Watt, Engineering Director – CBJ Buildable Land for Housing
- B- Pederson Hill Access Study
- C- CBJ Switzer Lands Residential Study
- D- Map showing Switzer Development Areas joined by possible future road corridor
- E- Map showing Pederson Hill Development Areas overlaid by possible future road corridors

### **BACKGROUND**

CBJ Lands and Resources have prepared preliminary development plans for CBJ owned lands on Pederson Hill and the Switzer/Lemon Creek area. Preliminary cost estimates for road and utility construction between West Juneau and North Douglas have also been developed. The primary motivation for these projects is the need to provide affordable housing to the residents of Juneau.

The development plans and cost estimates have been presented to the Juneau Affordable Housing Commission (AHC), Assembly Lands Committee and Assembly Public Works and Facilities Committee. They were also presented to the Planning Commission at the Committee of the Whole meeting on October 30, 2012 as a preliminary step in their required review of land disposals and capital improvement projects. CBJ Lands and Resources is seeking a recommendation from the Planning Commission on which project area(s) to use existing and future CIP funds for development to facilitate affordable housing.

This staff report focuses on the areas considered in the preliminary development plans, Switzer Creek and Pederson Hill.

### **ANALYSIS**

The CBJ Land Use Code section CBJ§49.10.170(c) on City and Borough Land Acquisitions, Disposals and Projects, states:

“The commission shall review and make recommendations to the Assembly on land acquisitions and disposals as prescribed by Title 53, or capital improvement projects by any City and Borough Agency. The report and recommendation of the commission shall be based upon the provisions of this title and the comprehensive plan, and the capital improvement program.”

Therefore, CDD staff has reviewed the proposal developed by the CBJ Lands Manager and provided the following evaluation of the project in accordance with adopted plans.

## **CONFORMITY WITH ADOPTED PLANS**

Chapter 4 of the 2008 Comprehensive Plan addresses housing. The first sentence of the chapter states “Like many residents across the country, CBJ residents are suffering from a housing crisis.” The comprehensive plan goes on to describe the housing situation, vacancy rates and cost of housing relative to income. Juneau has a very low vacancy rate as well as high cost of housing. Many Juneau residents are considered “housing burdened”. The Planning Commission and Affordable Housing Commission have spent considerable time updating this chapter as part of the 2013 update to the 2008 Comprehensive Plan. These issues and needs have not changed.

### Policy 4.1

*IT IS THE POLICY OF THE CBJ TO FACILITATE THE PROVISION AND MAINTENANCE OF SAFE SANITARY AND AFFORDABLE HOUSING FOR ITS RESIDENTS.*

### Policy 4.2

*IT IS THE POLICY OF THE CBJ TO FACILITATE THE PROVISION OF AN ADEQUATE SUPPLY OF VARIOUS HOUSING TYPES AND SIZES TO ACCOMMODATE PRESENT AND FUTURE HOUSING NEEDS FOR ALL ECONOMIC GROUPS.*

### Standard Operating Procedure 4.2.SOP3

*The CBJ should seek and facilitate new housing production, for all types, at an annual rate that mimics the growth rate of new households in the CBJ, in order to maintain adequate choice of residence type, location and cost.*

### Policy 4.6

*It is the policy of the CBJ to facilitate and assist in the development of affordable housing.*

### Implementing Action 4.6.IA1

*Inventory, assess, and make available suitable CBJ owned lands within the Urban Service Area to transfer to for-profit and/or non-profit residential development corporations that would result in new construction of low and moderate-income affordable housing. Strategies may include development of mixed income housing with higher priced homes subsidizing lower-priced homes set-aside for low and moderate-income households. Strategies may also include land trades and land trust agreements.*

Chapter 3 of the 2008 Comprehensive Plan Community Form  
Policy 3.2

*IT IS THE POLICY OF THE CBJ TO PROMOTE COMPACT URBAN DEVELOPMENT WITHIN THE DESIGNATED URBAN SERVICE AREA TO ENSURE EFFICIENT UTILIZATION OF LAND RESOURCES AND TO FACILITATE COST EFFECTIVE PROVISION OF COMMUNITY SERVICES AND FACILITIES WHILE BALANCING PROTECTION OF NATURAL RESOURCES, FISH AND WILDLIFE HABITAT AND SCENIC CORRIDORS.*

Chapter 10 of the 2008 Comprehensive Plan, Land Use

Policy 10.1

*IT IS THE POLICY OF THE CBJ TO FACILITATE AVAILABILITY OF SUFFICIENT LAND WITH ADEQUATE PUBLIC FACILITIES AND SERVICES FOR A RANGE OF HOUSING TYPES AND DENSITIES TO ENABLE THE PUBLIC AND PRIVATE SECTORS TO PROVIDE AFFORDABLE HOUSING OPPORTUNITIES FOR ALL CBJ RESIDENTS.*

Standard Operating Procedure 10.1.SOP3

*Prepare and implement a Capital Improvement Program for sewer service, transit service, roads, bridges, traffic intersection improvements and other public facilities and services to serve (a) existing residential areas, (b) areas with potential for in-fill development, and (c) other areas within the CBJ's Urban Service Area that may be suitable for immediate (within the next five years) residential development with sufficient densities to produce low or moderate income affordable housing. (emphasis added)*

Standard Operating Procedure 10.1.SOP4

*Use the CBJ lands as an important means of providing sufficient land for low- to moderate-income affordable residential development while ensuring that the new, affordable units remain so long-term. Implement the CBJ Land Management Plan, which phases disposal of such lands in accord with projected needs and bases their use on applicable policies of the Comprehensive Plan, such as housing, economic development, natural resource protection, hazard abatement, natural areas, community gardens and parks.*

Implementing Action 10.1.IA1

*Identify CBJ-owned lands that are suitable to release for development of affordable housing and develop a procedure, by grant, lottery or sale, to convey this land to a residential builder who would produce the affordable housing as soon as possible after necessary infrastructure is in place.*

Implementing Action 10.1.IA3

*Identify, design, fund and complete the construction of capital improvements needed to facilitate the development of affordable housing on CBJ lands.*

Both the Pederson Hill Access Study and the CBJ Switzer Lands Residential Study are consistent with the 2008 Comprehensive Plan as is the use of CIP funds to facilitate the development of affordable housing are consistent with the 2008 Comprehensive Plan Switzer Creek is in subarea 5 of the Plan (pg 205). Guideline 2 speaks to providing additional medium to high density residential development in areas with access to arterial roadways from collector streets.

Pederson Hill is within the Comprehensive Plan subarea 3 (pg 197). Guideline 14 recommends expanding the sewer system to the Pederson Hill area to accommodate higher density, affordable student and faculty housing for the University. Guideline 15 notes that Casa Del Sol Creek is listed as an impaired waterbody and that great care should be in review of future developments that could affect water quality. Guideline 16 recommends investigating the feasibility of extending a roadway through Pederson Hill, and further suggests that such a road be designed as a collector so as to serve the development of Pederson Hill.

The plan doesn't provide guidance in prioritizing one area over the other for development and use of CBJ resources.

The decision matrix provided by CBJ Lands and Resources indicates the cost estimate for master planning, permitting, infrastructure development and platting a subdivision for 100 dwelling units is about \$56,000/unit in the Pederson Hill areas 3 & 4 (recommended by Lands) and approximately \$68,000/unit in the Switzer/Lemon Creek development area 3 (recommended by AHC). This matrix also notes that the potential for long term phased development is greater for Pederson Hill. The matrix also rates Pederson Hill areas 3 & 4 higher as to proximity to transit, retail/services, jobs, schools, and recreation. Both areas rate well for "certainty that affordable housing will result".

Both AHC and CBJ Lands and Resources are recommending area Switzer Development Area 2A for development as a near term project. For a long term phased project, the Affordable Housing Commission recommends the Switzer Creek Development Area 3 (accessed via Mountain

Avenue) area as a priority for development. Lands and Resources Manager, Heather Marlow, recommends the Pederson Hill area as the first priority.

Planning staff used the decision matrix provided by CBJ Lands & Resources and assigned a number value to the three symbols used. The weighted values and total score do not include the estimates of cost per unit. While this may be considered an oversimplification of the issues, it is a helpful tool to evaluate the information provided. Staff summarized the weighted values as shown in Figure 1. Pederson Hill development areas 3 & 4 scored higher than Switzer/Lemon Creek.

-1; \*2; +3

	Ease/Ability to Permit	Long term	Cost Estimate per d/u	Minimizes property acquisition	Impact to Private Land	Proximity to transit, etc	Certainty affordable housing	<b>Total Points</b>
<b>PH 3/4</b>	2	6	\$56,000	2	2	3	3	<b>18</b>
<b>S/L 3</b>	2	2	\$68,000	3	2	2	3	<b>14</b>

Figure 1

As seen in the weighted values table above, Pederson Hill Development Areas 3 & 4 (PH 3/4) and Switzer/Lemon Creek Development Area 3 (S/L 3) are generally comparable. However, opportunities for long term expansion are significantly more favorable for Pederson Hill.

## **HABITAT**

Both areas addressed by the Pederson Hill Access Study and the CBJ Switzer Lands Residential Study include sensitive habitat including, wetlands, anadromous fish streams, eagle nests, and slopes. One of the purposes of these studies was to do a preliminary analysis of these areas to assess how much and which areas could be developed for housing. The current preliminary plan by CBJ Lands is to cluster development away from these sensitive areas so as to preserve them. Permits will be required to address specific impacts prior to development.

## **FINDINGS**

A review of adopted plans and codes indicates that both the buildable lands studies comply with the Comprehensive Plan. Both the Switzer/Lemon Creek development area 3 and Pederson Hill development areas 3 & 4 fulfill the goals and objectives of the 2008 Comprehensive Plan to provide opportunities for residential development, particularly affordable housing. Pederson Hill development areas 3 & 4 ranks higher, primarily for its long term potential and lower cost per unit for infrastructure, planning, permitting, and platting.

### **RECOMMENDATION**

The Director recommends the Planning Commission recommend to the Assembly Switzer Creek development area 2A for development in the near term. Additionally, the Director recommends that the Planning Commission recommend to the Assembly Pederson Hill development areas 3 & 4 as the priority long term project area(s) to use existing and future CIP funds for development to facilitate affordable housing.

# DEVELOPMENT PERMIT APPLICATION

Project Number	<b>CITY and BOROUGH of JUNEAU</b>	Date Received: <u>10/25/12</u>
Project Name (City Staff to Assign Name)		

<b>INFORMATION</b>	Project Description <u>Selection of municipal property to use CPA finding to improve for subdivision and sale of residential property</u>		
	PROPERTY LOCATION		
	Street Address		City/Zip
	Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot)		
	Assessor's Parcel Number(s) <u>Boroughville</u>		
	LANDOWNER/ LESSEE		
	Property Owner's Name <u>CBS Lands &amp; Resources</u>		Contact Person: <u>Heather</u>
	Mailing Address <u>155 S. Seward St.</u>		Work Phone: <u>5252</u>
	E-mail Address		Home Phone: Fax Number:
			Other Contact Phone Number(s):
<b>PROJECT / APPLICANT</b>	LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****		
	I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows:		
	A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.		
	B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.		
	X <u>Heather Markow</u>		Date <u>10/22/12</u>
	Landowner/Lessee Signature		
	X		
	Landowner/Lessee Signature		Date
	NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.		
	APPLICANT If the same as OWNER, write "SAME" and sign and date at X below		
Applicant's Name <u>CBS Lands &amp; Resources</u>		Contact Person: <u>Heather</u>	
Mailing Address <u>155 S. Seward St.</u>		Work Phone: <u>5252</u>	
E-mail Address		Home Phone: Fax Number:	
		Other Contact Phone Number(s):	
X <u>Heather Markow</u>		Date of Application	
Applicant's Signature			

<b>STAFF APPROVALS</b>	OFFICE USE ONLY BELOW THIS LINE			
	<input checked="" type="checkbox"/>	Permit Type	***SIGN	Date Received
		Building/Grading Permit		
	<input checked="" type="checkbox"/>	City/State Project Review and City Land Action		<u>10/25/12</u>
		Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)		<u>CSPI2-015</u>
		Mining Case (Small, Large, Rural, Extraction, Exploration)		
		Sign Approval (If more than one, fill in all applicable permit #'s)		
		Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)		
		Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)		
		Variance Case (De Minimis and all other Variance case types)		
		Wetlands Permits		
		Zone Change Application		
	<input checked="" type="checkbox"/>	Other (Describe) <u>CS</u>		
	***Public Notice Sign Form filled out and in the file.			
	Comments:			Permit Intake Initials



# CITY/STATE PROJECT AND LAND ACTION REVIEW APPLICATION

Project Number	Project Name (15 characters)	Case Number CSP 12-015	Date Received 10/25/12
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## TYPE OF PROJECT REVIEW:

☒ City Project Review
 ☐ City Land Acquisition /Disposal
 ☐ State Project Review

## DESCRIPTION OF PROJECT

Selection of Municipal Property to use CIP-funding to improve lot  
Subdivision and sale of residential property

Please attach a cover letter to fully explain the project if there is not adequate space on this form.

## CURRENT USE OF LAND OR BUILDING(S):

Vacant

## PROPOSED USE OF LAND OR BUILDING(S):

Subdivision and sale

## PROJECT NUMBERS ASSOCIATED WITH PROPOSAL:

Is this project associated with any other Land Use Permits? ☒ No ☐ Yes Case No.: \_\_\_\_\_

Capital Improvement Program # (CIP) \_\_\_\_\_

Local Improvement District # (LID) \_\_\_\_\_

State Project # \_\_\_\_\_

## ESTIMATED PROJECT COST:

\$ 6 million

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

## CITY/STATE PROJECT FEES

	Fees	Check No.	Receipt	Date
Application Fees	\$ _____	_____	_____	_____
Total Fee	\$ _____	_____	_____	_____

**NOTE: MUST BE ACCOMPANIED BY DEVELOPMENT PERMIT APPLICATION FORM**

**&**

**EVEN IF THE PROPOSED PROJECT IS ASSOCIATE WITH OTHER LAND USE PERMITS, THIS APPLICATION MUST BE FILLED OUT**

## Brenwynne Jenkins

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**From:** Quinn Tracy  
**Sent:** Thursday, October 25, 2012 9:56 AM  
**To:** Brenwynne Jenkins  
**Subject:** parcel numbers for study areas

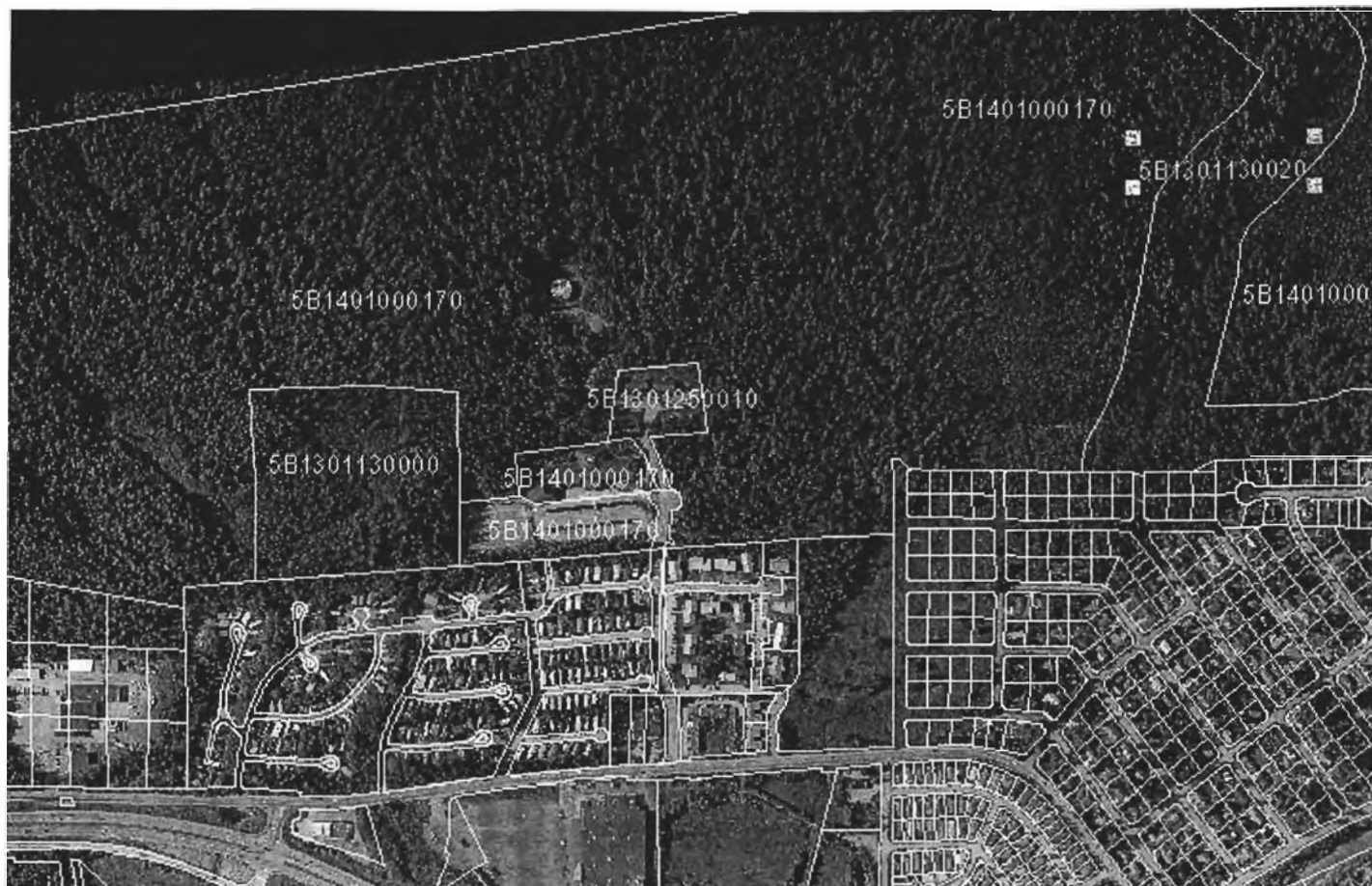
### Pederson Hill Study

Study Area A: 4B2201010010, 4B2201010100  
Study Area B: 4B2201010100, 4B2201020011  
Study Area C: 4B2201010100, 4B2201010080, 4B2201010050



### Switzer Study

Development Area 1: 5B130113000, 5B1401000170, 5B1301250010  
Development Area 2: 5B1401000170  
Development Area 3: 5B1301130020, 5B1401000170

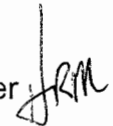



# MEMORANDUM

CITY/BOROUGH OF JUNEAU

Lands and Resources Office  
155 S. Seward St., Juneau, Alaska 99801  
[Heather\\_Marlow@ci.juneau.ak.us](mailto:Heather_Marlow@ci.juneau.ak.us)

TO: Planning Commission

FROM: Heather Marlow, Lands and Resources Manager   
Rorie Watt, Engineering Director 

DATE: October 23, 2012

SUBJECT: CBJ Buildable Land for Housing

Over the past two years, preliminary development plans have been prepared for lands on Pederson Hill, and the Switzer Creek area and preliminary cost estimates have been prepared for a road and utility connection between West Juneau and North Douglas.

The Affordable Housing Commission, Assembly Lands Committee and Assembly Public Works and Facilities Committee have met to consider housing needs and these possible land development projects. The purpose of this meeting is to discuss the projects, consider recommendations from the Affordable Housing Commission and City Staff and to generate a recommendation from the Planning Commission on project area(s) to use existing and future CIP funds to accommodate affordable housing.

**A. Housing Needs Assessment Report, Executive Summary – June 2010**  
[www.juneau.org/lands/documents/JuneauHousingNeedsAssessment.pdf](http://www.juneau.org/lands/documents/JuneauHousingNeedsAssessment.pdf)

## Summary of Recommendations

1. Continue to develop the organizational capacity for affordable housing and continue to monitor local housing data.
2. Encourage the creation of more one and two-bedroom apartments and single-family homes to manage the unmet need.
  - 205 single family homes
  - 138 multifamily rental units (duplex to apartments)
  - Additional senior housing – an increasing segment of the population
3. Establish an Affordable Housing Trust Fund.

4. Address the buildable land issue – establishment of a housing planning process would allow for the collaboration of resources and help determine where needed housing units will fit within the CBJ.

5. Strengthen the Continuum of Care Network (CoC) – success of the CoC is partially dependant on the availability of housing outside of their network, typically 1 and 2 bedroom apartments or single-room occupancy apartments, that clients can be moved to and include the appropriate level of services, to free up space with the CoC system.

**Staff Comment:** Recommendation #1 is an on-going task, an update to the Housing Needs Assessment Report is expected prior to the end of the year. Recommendation #3 has been completed. Recommendations #2 and #4 are the focus of this effort, which also assists Recommendation #5.

#### **B. CBJ Buildable Lands Study – January 2007**

[www.juneau.org/cddftp/documents/DelineationandFunctionRatingofJurisdictionalWetlandsandsonPotentiallyDevelopableCity-ownedParcel.pdf](http://www.juneau.org/cddftp/documents/DelineationandFunctionRatingofJurisdictionalWetlandsandsonPotentiallyDevelopableCity-ownedParcel.pdf)

**Staff Comment:** The four CBJ parcels listed below are most suitable for affordable housing development, including the creation of needed apartments, single family homes and additional senior housing:

Parcel #1     Switzer Creek/DZ school area

Parcel #4     Pederson Hill

Parcel #5     S'it' tuwan Subdivision

Parcel #7     Goat Hill

#### **C. Residential Development Studies on CBJ Owned Parcels**

**Staff Comment:** These three parcels have received further analysis and study for residential development. Goat Hill was not considered due to zoning, wetlands and topography constraints.

Parcel #1     Switzer Creek/DZ School area  
[www.juneau.org/clerk/ASC/LC/Hill%20560/Switzer.php](http://www.juneau.org/clerk/ASC/LC/Hill%20560/Switzer.php)

Parcel #4     Pederson Hill  
[www.juneau.org/clerk/ASC/LC/Hill%20560/PedersonHillAccessStudy.php](http://www.juneau.org/clerk/ASC/LC/Hill%20560/PedersonHillAccessStudy.php)

Parcel #5     S'it' tuwan Subdivision  
-June 16, 2011 memo from Tom Mattice – avalanche hazard  
-Development area and avalanche hazard maps

## **D. Summary of CIP Projects to Support Residential Development**

### Completed Projects

- North Douglas Sewer
- Industrial Boulevard/Glacier Highway Sewer

### Proposed Projects

- Kowee creek Bridge/Utility Extension
- Mendenhall Peninsula Sewer Process Recap
- Pederson Hill
- Switzer Area

## **E. Project Funding**

Prior fiscal years have allocated \$3.1 million towards these projects, with an additional \$2.6M and \$0.6M in FY13 and FY14. Total funding available is approximately \$6.3M.

## **F. Decision Matrix**

Included in this presentation are a cost summary sheet and a decision matrix that summarizes information about the Pederson and Switzer projects. The area plans and matrix have been prepared for the purpose of comparing various phases against one another. There are more development projects that funding will allow. The Pederson and Switzer projects would develop municipal lands, the West Juneau/N Douglas project would benefit existing undeveloped lands as well as providing other benefits.

## **G. Recommendation**

Project recommendations have been generated by the Affordable Housing Commission and City Staff. There is shared support for Switzer Development Area 2A to be pursued as a near term project (on-line in 1 to 2 years).

For long term phased development (on-line in 3 to 4 years), the Affordable Housing Commission recommended Switzer Development Area 3, totaling 100 units. Commission comments in support of the recommendation included: the potential to reduce site preparation/hauling costs due to the proximity of material sources; the area is appropriate for residential infill, similar to the surrounding density; and the potential for infrastructure cost sharing with a future school site.

City Staff recommends Pederson Hill Development Area 3-4, totaling 100 units. Staff comments in support of the recommendation include: ease of permitting; the desire to spread development impacts through out the community; favorable development

costs; and the strong potential for long term phasing to support affordable housing and community expansion, beyond Pederson Hill Development Area 3-4.

**Staff recommends that the Planning Commission forward a recommendation to the Assembly to take the following actions:**

- 1. Direct staff to proceed with design, permitting and construction of a road and utilities to Switzer Area 2A.**
- 2. Direct staff to proceed with master planning, design, permitting and construction of a road and utilities to Pederson Hill Area 3-4**

# Executive Summary

The City and Borough of Juneau (CBJ), like many other municipalities, has struggled with the responsibility of providing safe, sanitary and affordable housing for its residents. Juneau is experiencing a shortage of affordable housing that is exacerbated by a lack of sufficient rental housing and single-family homes.

A complex set of factors affects the local housing market and individual households' ability to afford housing. Although the nature of these difficulties has long been recognized, housing prices continue to increase and construction of new housing has slowed almost to a halt, further aggravating Juneau's housing problems. Housing prices have increased significantly since 2000, without a corresponding increase in wages. To better understand these dynamics, the Juneau Economic Development Council (JEDC) conducted a housing needs assessment of the current housing situation for all income and housing need categories in Juneau.

It is commonly understood in the housing industry that "Local housing issues require local housing solutions." Whereas state and federal agencies provide funding resources and general housing information that address some of the issues at the local level, the ultimate responsibility for providing safe, sanitary, and affordable housing for all CBJ households resides with the local community. This report has been prepared with the idea that it can be updated on an annual basis to allow the community to create policies and solutions that address Juneau's most critical unmet needs.

Several of the key points to come out of this study are presented below:

## **Recommendations**

Based on analysis of the data compiled for this report, JEDC makes the five following recommendations to improve Juneau's housing situation:

### ***1. Continue to develop the organizational capacity for affordable housing and continue to monitor local housing data.***

Given the complexity and the demanding nature of the affordable housing industry, as well as the constant changes in the overall housing market, it is essential to invest resources in organizational capacity and the collection of research and data necessary to understand local housing needs. This information will assist in the acquisition of resources necessary to remedy local housing problem areas, including the identification of gaps within the local Continuum of Care system that assists low-income and homeless persons. Without this information it will be difficult for community stakeholders to collaborate and create strategies to alleviate the stresses on the local housing market.



## **2. Encourage the creation of more one- and two-bedroom rental apartments and single-family homes to manage unmet needs.**

Juneau rental vacancy rates are significantly lower than the region, state or nation. In 2008, Juneau's rental vacancy rate was 2.3%, compared to 6.1% for Alaska and 7.8% for the nation.<sup>1</sup> For owner-occupied homes, Juneau's vacancy rate was 2.5%. According to JEDC calculations, Juneau currently needs 343 more housing units to meet pent-up demand and reach a five percent vacancy rate in each housing category, including 205 single-family homes and 138 new units in multi-unit buildings (duplex to apartment building units).

**Rental Housing**—One- and two-bedroom apartments and three- and four-bedroom single-family homes have very low vacancy rates.<sup>2</sup> A low vacancy rate means limited available housing and a limited ability for renters to choose housing that adequately meets their needs in terms of cost, size, quality, and location. **In 2010, the vacancy rate for single-family rental homes decreased to zero for rental homes with one, three, or four bedrooms.**

One element driving Juneau's shorter-term rental housing demand is the fact that Juneau has a very mobile population. Approximately one-fifth of Juneau's housing units changed hands in the last year, resulting in a higher demand for shorter-term rental housing.

Juneau's large nonresident workforce further exacerbates Juneau's rental crisis by competing with Juneau's lower income households for rental housing. One quarter of Juneau's workforce (approximately 5,000 positions) are not residents of Juneau, and therefore are more likely to require rental housing. Since 2000, the number of nonresidents working in Juneau has increased by nearly 1,500, while the type of rental units necessary to accommodate the housing needs for this group has seen very little growth.

Seven of the top ten private sector nonresident occupations are relatively low-paying positions (retail, tour guides, food service, cashiers, bus drivers, waiters, and maids), meaning many nonresident workers have low-cost rental needs. More than 80% of the renter households with annual incomes less than \$35,000 are cost-burdened. Overall, there are 1,466 renter households with at least some cost burden and only 966 units set aside for low-income households. As the cost of housing has increased in the last decade, demand for more low-income housing has also risen. However, vacancy rates in the 966 designated affordable units is typically between 1-2%, meaning that those most in need of affordable housing have the least amount of choice.

With a current pent-up demand of 138 multi-family units, attention might be given to the acquisition and rehabilitation of existing housing stock to meet this need. This solution is typically less expensive and many of Alaska Housing Finance Corporation's programs focus use this approach. Currently, there are 17 organizations that develop affordable housing rental units and provide housing services in Juneau. Many of these organizations specialize in housing and housing for persons with special needs. Even were these 138 units to be provided it might

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<sup>1</sup> U.S. Census Bureau, 2008 American Community Survey.

<sup>2</sup> Alaska Department of Labor and Workforce Development, Research and Analysis Section and the Alaska Housing Finance Corporation - 2009 Rental Market Survey

also be necessary to consolidate ownership and management of these housing organizations to provide better economies of scale.

**Single-Family Homes**—JEDC has identified approximately 1,000 renter households that can afford to purchase a home, but have not. The creation of more single-family homes will provide more options for potential buyers, allow more renters to purchase homes, and help relieve some of the pressure on the rental market. The hurdle to filling this is the lack of available, buildable land.

**Senior-Friendly Housing**—A not immediate, but fast-approaching need, is housing for Juneau's growing senior population. Juneau has aged at a faster pace than the state or the nation. The proportion of those 55 and older in Juneau increased from 10 percent in 1990 to 21% in 2007. By 2020 those 55 and older are expected to make up 30% of the local population. Consequently, Juneau will need to increase its senior-focused housing stock to enable seniors to remain in Juneau in the coming decades. One option is to focus attention on the acquisition and rehabilitation of existing stock as the most cost-effective measure.

### **3. Establish an Affordable Housing Trust Fund.**

Funding is the major difficulty in the development of affordable housing, especially for low-income and special needs populations. Local housing agencies, which are often small with limited organizational capacity, have difficulty raising the matching funds necessary to apply for state and federal funding. According to a HUD Study, nonprofit development deals involve, on average, 7.8 different sources of funding.<sup>3</sup> Additionally, the local home-building community finds it unprofitable to build market-rate single-family homes in the affordable range for Juneau residents.

This study recommends creating an Affordable Housing Trust Fund with a local, dedicated revenue source to encourage the creation of housing that targets local housing needs. A local Affordable Housing Trust Fund would (1) provide a dependable source of capital for the production, acquisition and rehabilitation of rental units, owned homes, and associated supportive services, (2) provide funding without restriction that would give the community the ability to focus on most pressing local housing needs, and (3) would be used to leverage other funds for the production of more affordable housing.

A focus of the Affordable Housing Trust Fund should be the establishment of a dedicated revenue source so that affordable housing can be developed consistently and is not subject to periods of inactivity. Of course, this raises the all-important question—from where will the dedicated revenue source come?

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<sup>3</sup> Bratt, Rachel G. 2006. *Should We Foster the Nonprofit Housing Sector as Developers and Owners of Subsidized Rental Housing?* Paper presented at the Joint Center for Housing Studies Symposium on Revisiting Rental Housing: A National Policy Summit, Cambridge, MA. November 14—15.

#### **4. Address the buildable land issue.**

The purpose of the Juneau Housing Needs Assessment is to determine the unmet housing need in the community. However, one of the primary barriers to the creation of more housing is the lack of affordable land on which to build new housing. This situation is likely to become even more restrictive in future years.

Most local undeveloped lands are wetlands, forests, steep slopes and variable terrain and/or are inaccessible by roads. Unfortunately, the cost to develop those lands (and mitigate environmental impacts) for most residential uses is cost-prohibitive.<sup>4</sup>

A search for buildable land, an examination of how land-banking options might provide more buildable land, and an analysis of opportunities for conversion of existing buildings into rentals or other potential housing all must be undertaken. A plan that proposes the best mix of these options should be prepared and presented to the CBJ planning department.

#### **5. Strengthen the Continuum of Care Network.**

The lack of affordable one- and two-bedroom rental units is especially burdensome on the low-income population. This in turn increases the pressure on the Continuum of Care network (Juneau Homeless Coalition) that aims to provide housing options for these residents. With limited opportunities to move clients out of the Continuum of Care (CoC) system – Emergency Shelter, Transitional Housing, Permanent Supportive Housing – the existing housing options for low-income and special needs populations are often not utilized for their intended purpose. Thus fewer clients are assisted than meets the need.

In addition to the need for more housing options for the homeless, low-income, and special needs populations, other strategies that are necessary to improve the housing situation for this segment of Juneau's population include:

- Community-wide utilization of the Health Management Information System (HMIS) or another data collection system that would help track and assess the needs of clients and identify current gaps.
- Comprehensive intake, assessment, and prevention efforts that match clients' housing needs with the appropriate available resources.
- Establishment of a community-adopted Ten-Year Plan to End Homelessness.

The success of these strategies will also depend on the availability of housing outside of the Continuum of Care network. Typically there are one- and two-bedroom apartments or newly allowed Single-Room Occupancy (SRO) apartments to which clients can be moved for the appropriate level of service. This would free up space within the CoC system.

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<sup>4</sup> City and Borough of Juneau Comprehensive Plan, 2008

## Other Key Findings

Other key findings from the report are summarized below:

### Housing Values and Sales

- The average price of a single-family residence in 2009 was \$307,955, which was 4.3% higher than the 2008 average. In the first half of 2010, home prices have continued to rise. The average price of a single-family residence in the first half of 2010 was \$318,385. In 2009 there were a total of 228 single-family homes sold, similar to 2008. The average number of days on the market was 93.<sup>5</sup>
- An average Juneau home was built in 1971 and is 1,740 square feet with three bedrooms. Of the 6,319 single-family homes in Juneau, only six percent are assessed at \$200,000 or less (in 2010).<sup>6</sup>
- The median assessed value of an owner occupied housing unit was 53% higher in Juneau than the national median value, and 30% higher than the Alaska median value in 2008.<sup>7</sup>

### General

- Of Juneau's 12,911 housing units, nearly half (49%) are single-family homes.<sup>8</sup>
- Two-thirds of housing units in Juneau are occupied by the homeowner.<sup>9</sup>
- One-third of Juneau residents have lived in their current housing unit for three years or less.<sup>10</sup>

<sup>5</sup> Southeast Alaska Multiple Listing Services, 2009

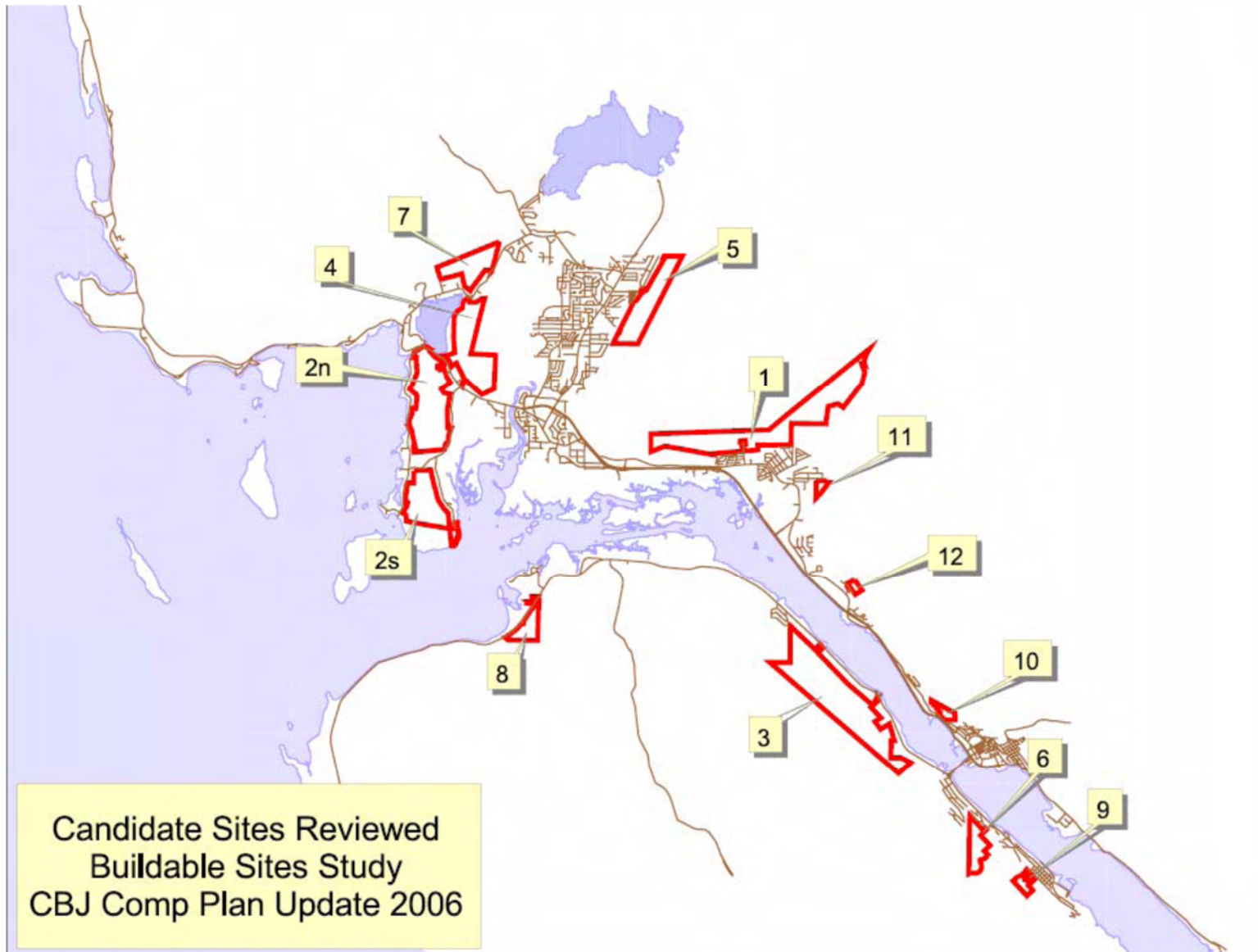
<sup>6</sup> City and Borough of Juneau, Finance Department, Assessor's Database, 2010. Analysis by the Juneau Economic Development Council

<sup>7</sup> 2008 American Community Survey, U.S. Census Bureau

<sup>8</sup> City and Borough of Juneau, Finance Department, Assessor's Database, 2010. Analysis by the Juneau Economic Development Council.

<sup>9</sup> 2008 American Community Survey, U.S. Census Bureau.

<sup>10</sup> 2008 American Community Survey, U.S. Census Bureau.





## EMERGENCY PROGRAMS

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Cell: (907) 209-9207

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DATE: June 16, 2011

TO: Heather Marlow

FROM: Tom Mattice  
Emergency Programs Manager

SUBJECT: Kanata Street Potential Development

Heather,

Having taken an initial look at the property for the Kanata Street Potential Development and having read through the 1972 Avalanche Hazard Inventory Report prepared by Hans Frutiger of the Swiss Federal Institute for Snow and Avalanche Research there are a few considerations I would like to point out:

1. This report was generated for many areas of the city and the area in question was not the focal point of this study.
2. Avalanche research and engineering has changed a great deal since this report was generated in '72. New slope modeling is much more accurate and takes more variables into consideration.
3. In the case of avalanches in the Juneau Region, the topographic factors can be studied well on the large scale map whereas the knowledge of the significant climatic and snow cover factors is very poor. Climatic factors influence to a great extent the occurrence, the type and magnitude of the avalanches for given terrain features. The evaluation of potential big and long term avalanches becomes very questionable when climatic data for the regions where avalanches start are not available. This, in fact, is the case for the Juneau Region. The report states, "Almost no data on snow cover conditions is available." New studies would use newer, more accurate data for the weather input.
4. Upon examining the area in person a few things came to mind. The tree/vegetation cover in the region varies. Some larger old growth is present that shows historical avalanche damage in areas near the slide zones. Younger trees are also present in areas more prone to avalanche activity. The report states, "Because of lack of time, no thorough inspection of the age of the timber stands in the neighborhood of avalanche tracks was made. This would be most

important to detect past avalanche occurrence." By understanding past avalanche occurrences it allows us to better determine the avalanche return interval.

Another factor to take into consideration from the reports perspective is the unusual steepness of the slope, the low altitude combined with heavy precipitation and adequate abundant vegetation and intricate weather pattern makes the use of now standard parameters almost impossible at the time the report was created. New modeling takes into account many additional variables.

5. For the purposes of the new development we will be discussing Report Area IV Thunder Mt. West Slope. Primarily Sub Area 4-1 and 4-2. Hazard under area 4-1 looks to be limited by heavy timber on smaller slopes. Residential development below Area 4-1 could occur without additional study. The corridor of concern will be area 4-2 and below.

My concern with the report is this: The avalanche danger shown continues all the way down a steep hill and stops as soon as it hits flat land. This is not typical with avalanche areas. The toe of the debris is most often found on slopes of less angle than that of the avalanche track. The flow equations for the report used one meter of depth for the snow in the avalanche equations, due to the fact that good local data was not available. In my limited time in Juneau I have seen the potential for avalanches greater than a meter in depth. These two findings would allow me to believe that this report is conservative in the area in question and should perhaps be revisited with modern techniques now that it may become a focal area of concern and not an afterthought.

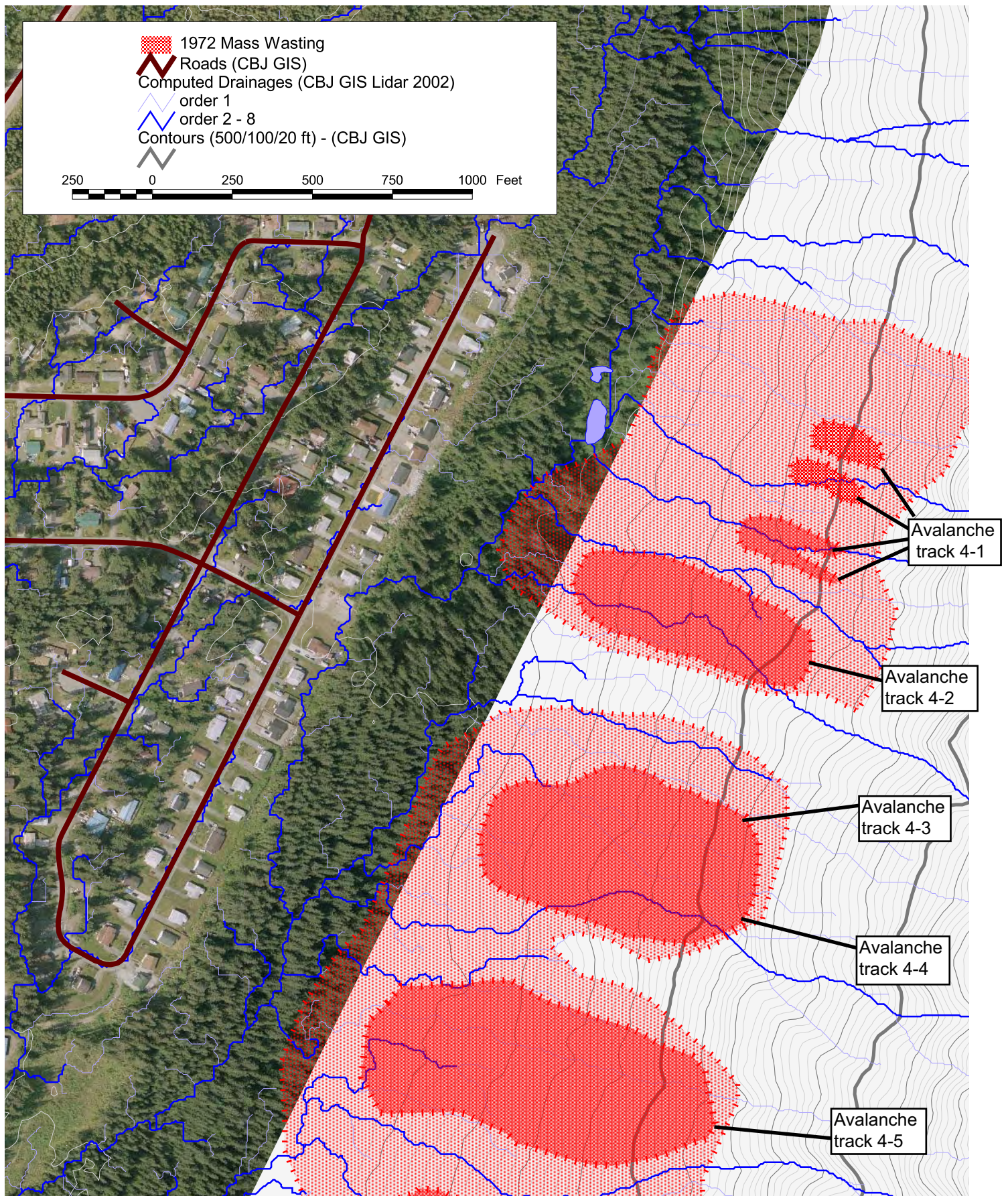
It would be my recommendation that a proposed development below Area 4-2 be reviewed with a pre development assessment and that new slope modeling studies be performed by the Swiss Snow Institute's Stephan Margreth. This would allow you to insure that any new development below Area 4-2 would be removed from areas of avalanche potential.

Please let me know if there is anything else I can do for you as you work through this project.

Thank you,

Tom Mattice  
CBJ Emergency Programs Manager/ Avalanche Forecaster  
907-209-9207



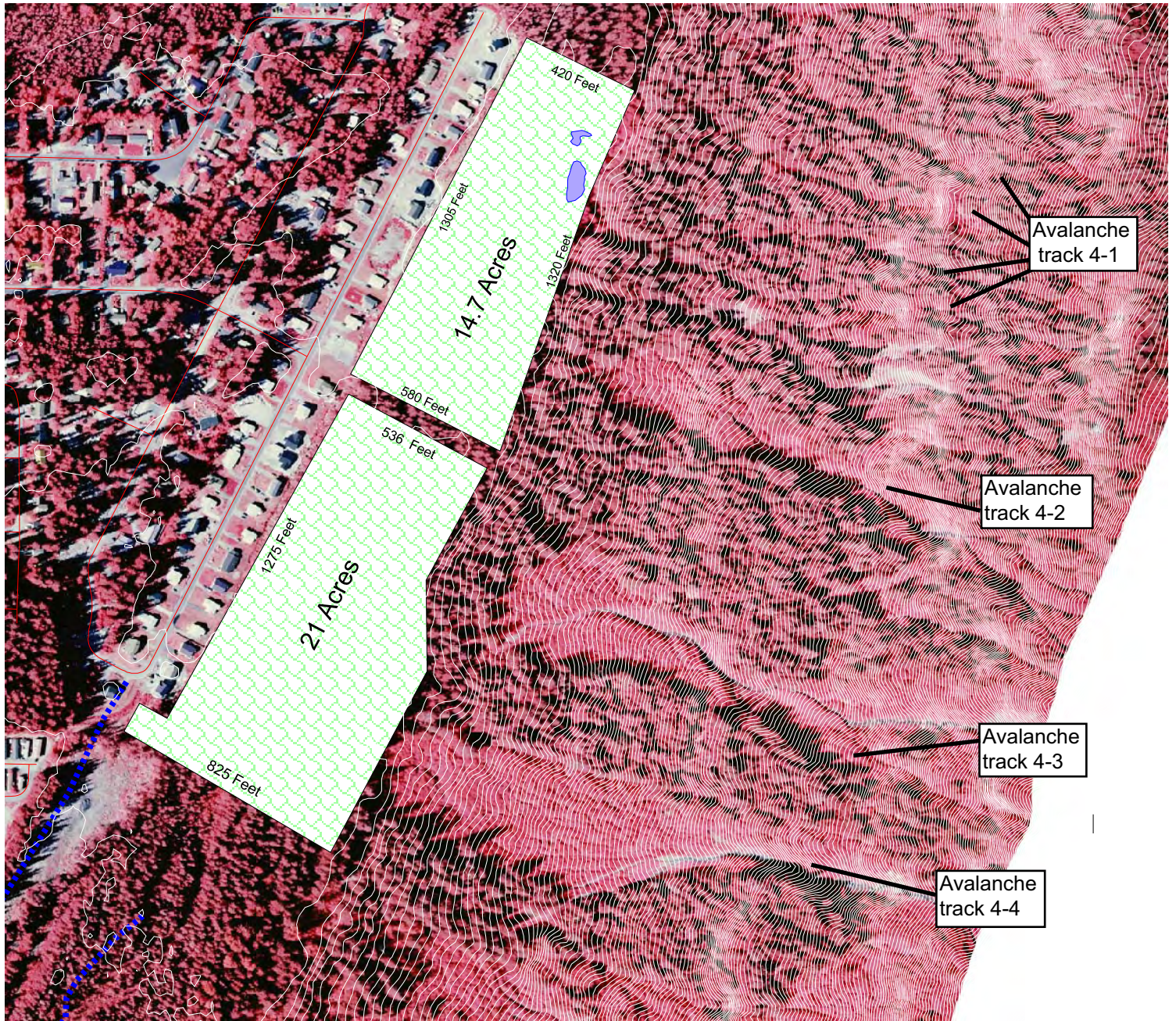


The overlay of avalanche mass wasting zones from the CBJ 1972 study is approximate in this map. The 1972 maps were scanned and coregistered with GIS data from 2002 and 2006 (based on mountain summits in the maps and databases), with an XY error of 34.87 feet, 1.00 RMSE.

In rough terms, there is a one in three chance a given boundary is more than 35 feet from where it appears on the map, based on the coregistration process alone. There may be additional positional errors, based on the (undocumented) accuracies of the maps in the 1972 study.



# Kanata Street Developable City Owned Parcels



City owned buildable land



2006 wetlands



1997 Stream data



10 foot topographic





### Switzer Development

	Total Project Development Cost	Dwelling Units	Cost Per Dwelling Unit
Development Area 1A	\$ 2,652,000	43	\$ 62,000
Development Area 1B	\$ 5,066,000	68	\$ 75,000
Development Area 2A	\$ 671,000	32	\$ 21,000
Development Area 2B	\$ 1,571,000	14	\$ 113,000
Development Area 2A & 2B	\$ 2,284,000	46	\$ 50,000
Development Area 3	\$ 6,777,000	100	\$ 68,000
Development Area 3 -full buildout w/conxn from DA 2A to DA 3	\$ 16,626,000	143	\$ 117,000

### Pederson Hill

Development Areas 5,6 and 3 - access from Wildmeadow	\$ 7,637,000	100	\$ 77,000
Development Areas 3 and 4- access across from Sherwood Ln	\$ 5,548,000	100	\$ 56,000

### Sit'uan expansion

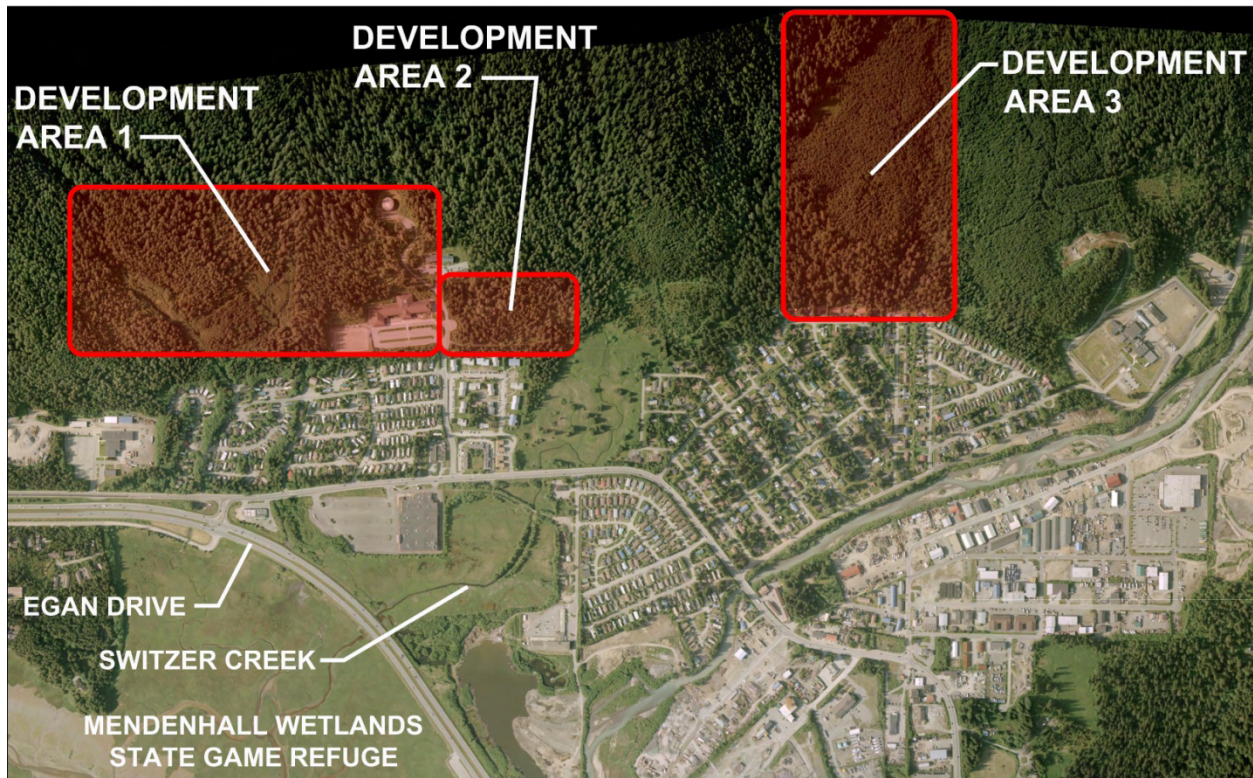
	\$ 3,465,000	50	\$ 70,000
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**CBJ Lands**  
**Evaluation Matrix**  
**Affordable Housing Development Areas**

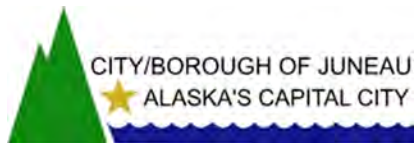
+ yes/favorable							
*maybe/moderate	Ease/ability to permit	Potential for long term development with phasing	Cost estimate* per dwelling unit (du), based on D-10 zoning	Minimizes property acquisition	Impact to private land	Proximity to transit, retail/services, jobs, schools, recreation	Certainty that affordable housing will result
- no/not favorable							
Pederson Hill							
Development Areas 1-2	+	*	\$100,000+/32 du	*	*	+	-
Development Areas 3-4	+	++	\$56,000/100 du	*	*	+	+
Development Areas 3, 5, 6	*	++	\$77,000/100 du	*	*	+	*
Switzer Lands							
Development Area 1A	+	*	\$62,000/43 du	+	+	+	+
Development Area 1B	*	*	\$75,000/68 du	+	++	+	+
Development Area 2A	+	-	\$21,000/32 du	+	++	+	+
Development Area 2B	+	-	\$113,000/14 du	+	+	+	*
Development Area 3	*	*	\$68,000/100 du	+	*	*	+
Development Area 3 (full build-out)	+	+	\$117,000/ additional 143 du	+	*	*	*
Under Thunder							
Situwaan Phase 2	+	*	\$70,000/50 du	+	*	-	+

\*Cost estimate includes master planning, permitting, infrastructure development and subdivision plat

# CBJ SWITZER LANDS RESIDENTIAL DEVELOPMENT STUDY



PREPARED FOR:



LANDS AND RESOURCES  
155 SOUTH SEWARD ST.  
JUNEAU, AK 99801

PREPARED BY:



6205 GLACIER HIGHWAY  
JUNEAU, AK 99801

With assistance by:

**Bosworth Botanical Consulting**

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204 North Franklin Street  
Juneau, Alaska 99801

R&M Project No. 111379  
May 7, 2012

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**CITY AND BOROUGH OF JUNEAU**  
**CBJ SWITZER LANDS RESIDENTIAL DEVELOPMENT STUDY**

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**Appendix A - Plan and Profile Sheets and Cost Estimates**

**Appendix B – Wetland Delineation Report by Koren Bosworth**

# CBJ SWITZER LANDS RESIDENTIAL DEVELOPMENT STUDY

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## 1. Introduction

City and Borough of Juneau (CBJ) residents are suffering from a housing shortage. The 2008 CBJ Comprehensive Plan documents the following:

- Insufficient supply of housing to provide residents adequate choice in housing size, location and price.
- Many residents live in overcrowded and/or unsafe and unsanitary conditions.
- Many households are paying more than 30% of their household income for shelter.

Providing affordable housing has been a top priority of the CBJ for quite some time. In the last 5 to 10 years, the CBJ has been trying to encourage development of lands in the existing service areas that already have CBJ sewer, water and transit service. The CBJ has also added sewer to North Douglas and the Pederson Hill area to encourage development in those areas.

The CBJ owns land on Pederson Hill and in the Switzer area and is currently focusing on these two areas to offer CBJ land residential development. The CBJ engaged R&M Engineering, Inc. (R&M) to produce this study of their Switzer lands. The intent of this, CBJ Switzer Lands Residential Development Study is to evaluate potential development areas, development costs and phasing for CBJ owned property in the Switzer area. The CBJ engaged DOWL HKM to prepare a report titled ***Pederson Hill Access Study*** (July 22, 2010) to evaluate similar issues for CBJ owned property on Pederson Hill.

In 1997, R&M prepared a report for the CBJ titled ***CBJ Switzer Area Land Study***. That study investigated 741 acres of CBJ property. This 2011 study focuses on a smaller portion of the ***CBJ Switzer Area Lands Study***, about 130 acres, zoned and suitable for residential development, see Figure 1, evaluating potential development areas, costs and phasing. The specific development areas addressed in this study are shown in Figure 2. The development areas were determined by excluding land steeper than 18%, which would be difficult and thus expensive to develop. This resulted in three distinct areas labeled from west to east, Development Areas 1, 2 and 3. Development Area 1 is west of Renninger Street and Dzantik'i Heeni Middle School (DZMS); north of Renninger and DZMS; and consists of approximately 58 acres. Development Area 2 is East of Renninger Street; north of Gruening Park; and consists of approximately 7.8 acres. Development Area 3 is the furthest east; is northwest of the Lemon Creek Jail; and consists of approximately 61 acres.

There are privately owned properties and properties owned by Mental Health Trust in the Switzer area that are undeveloped, and zoned for residential development. A property ownership map is included as Figure 3.

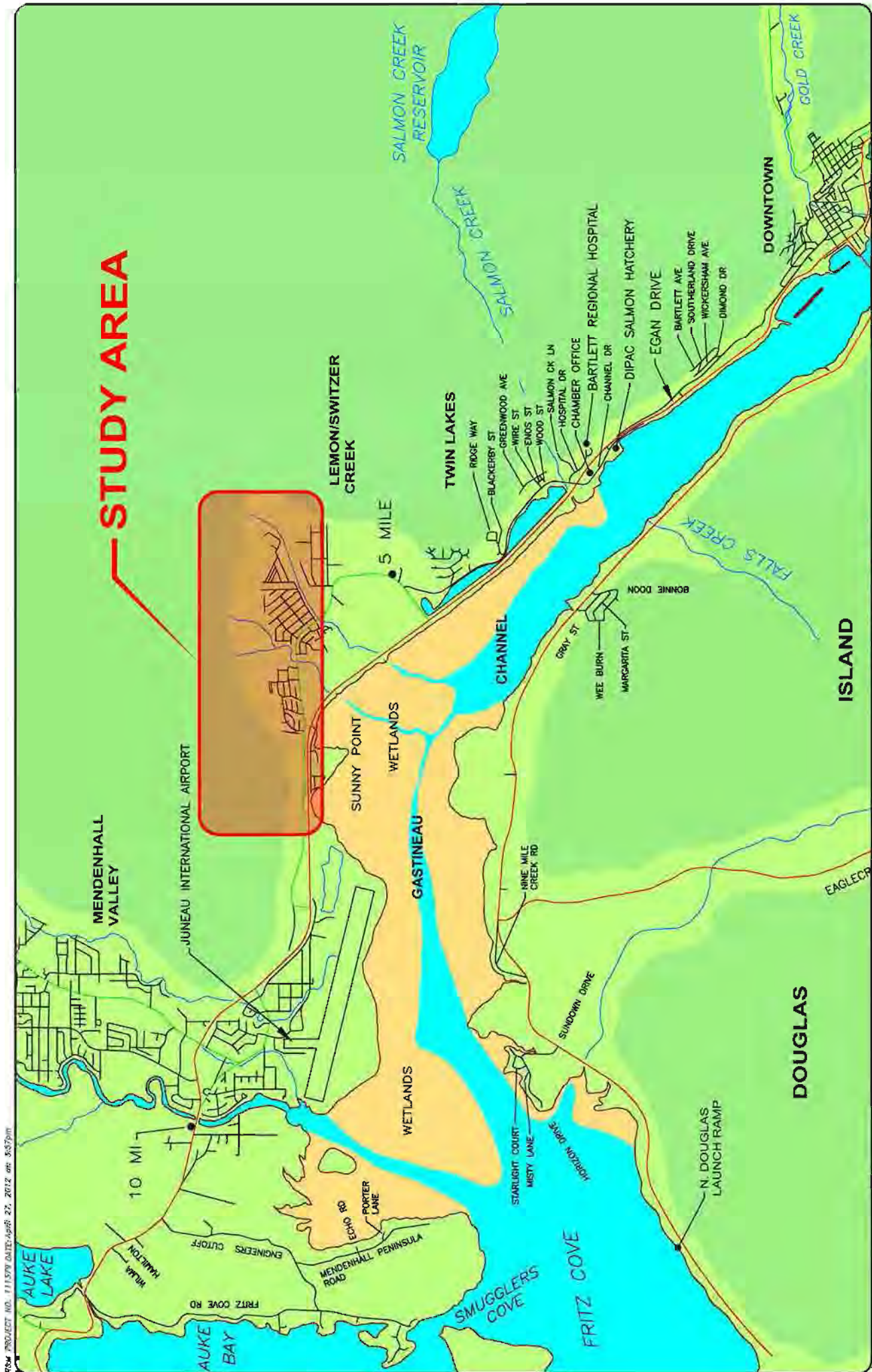


VICINITY MAP  
CBJ SWITZER LANDS  
RESIDENTIAL DEVELOPMENT STUDY  
JUNEAU, ALASKA

CITYBOROUGH OF JUNEAU  
X ALASKA'S CAPITAL CITY



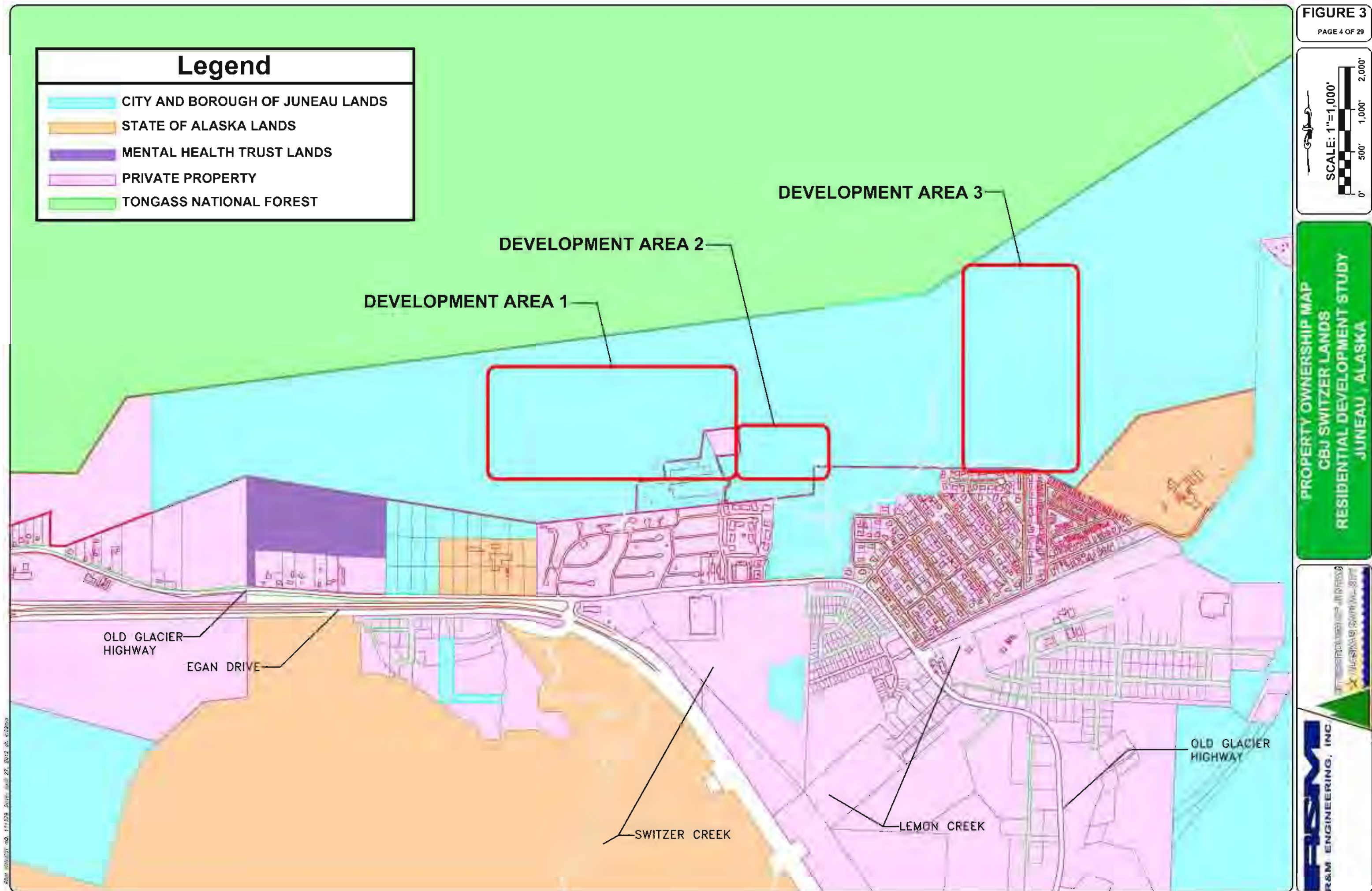
**R&M**  
R&M ENGINEERING, INC.











## 2. Environmental Development Constraints

Development constraints typically include wetlands, rivers, creeks, drainages, waters of the United States, flood zones, unsuitable soils, lack of road access, steep terrain, anadromous fish habitat, eagle nests and other habitat issues. The Switzer areas under study are constrained by most of these issues.

The primary environmental development constraints in this area are steep terrain, wetlands and waters of the United States; anadromous fish streams; and bald eagle nest trees. These constraints are discussed below and are depicted on Development Area 1, Figure 6; Development Area 2, Figure 7; and Development Area 3, Figure 8.

### 2.1 Steep Terrain

To determine unsuitably steep terrain, 2001 LIDAR mapping provided by the CBJ was used to identify areas where slopes exceed 18%. For the purposes of this report, land with a slope greater than 18% is considered too steep to support development. Since maximum road grades are limited to 15% for short distances and desirable road grades are no greater than 8%, gaining access to land with slopes exceeding 18% becomes extremely expensive. After examining the study area, three parcels of land have large enough contiguous areas with slopes acceptable for development. These are called Development Areas 1, 2 and 3 and are shown in Figures 6 through 8.

### 2.2 Wetlands and Waters of the United States

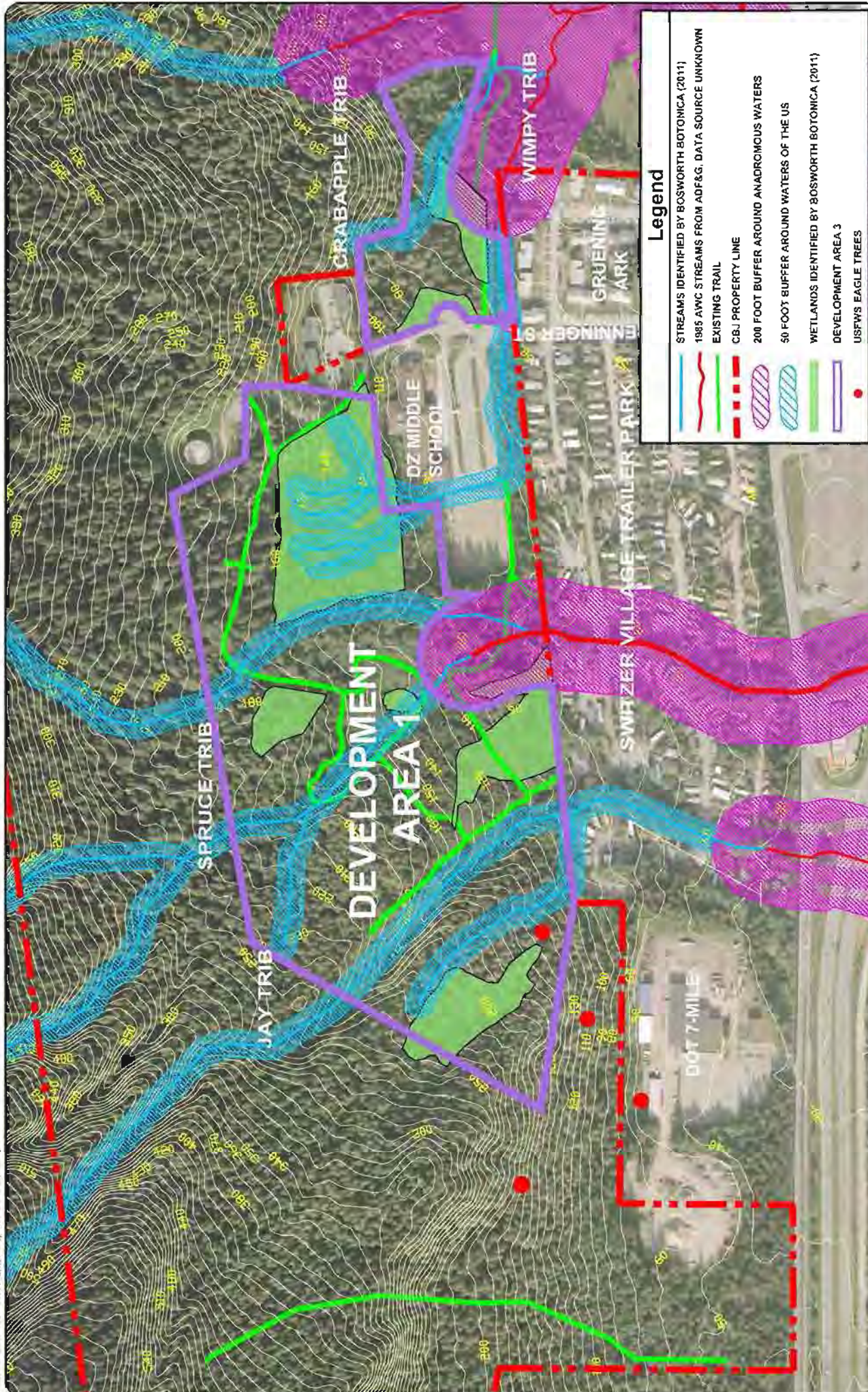
The United States Army Corp of Engineers (USACE) has jurisdiction over wetlands and over Waters of the United States (WOTUS). Wetlands on this site are primarily fen and bog type wetlands.

Koren Bosworth, of Bosworth Botanical, was subcontracted to trace streams and outline wetland boundaries. A comprehensive wetland survey was performed and an AutoCAD drawing produced with wetland boundaries and streams. All streams require a 50 foot buffer in accordance with CBJ code. All proposed access alignments in the development areas attempt to minimize wetland impact, as well as stream crossings.

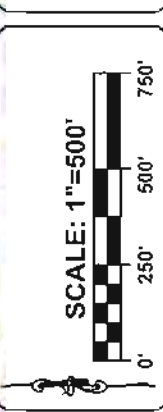
### 2.3 Anadromous Fish Streams

The study area contains three main anadromous fish streams: Switzer Creek, East Creek and West Creek. These are noted by the Alaska Department of Fish and Game (ADF&G) in their Anadromous Waters Catalog (AWC) as anadromous stream numbers 111-40-10070, 111-40-10060, and 111-40-10050, respectively. In addition, a number of tributaries of these streams contain anadromous fish habitat, although not all have been catalogued. We received and used AutoCAD drawings from ADF&G Division of Sports Fish (September 1, 2011) showing the extent of the anadromous fish streams.





**FIGURE 4**  
PAGE 6 OF 29

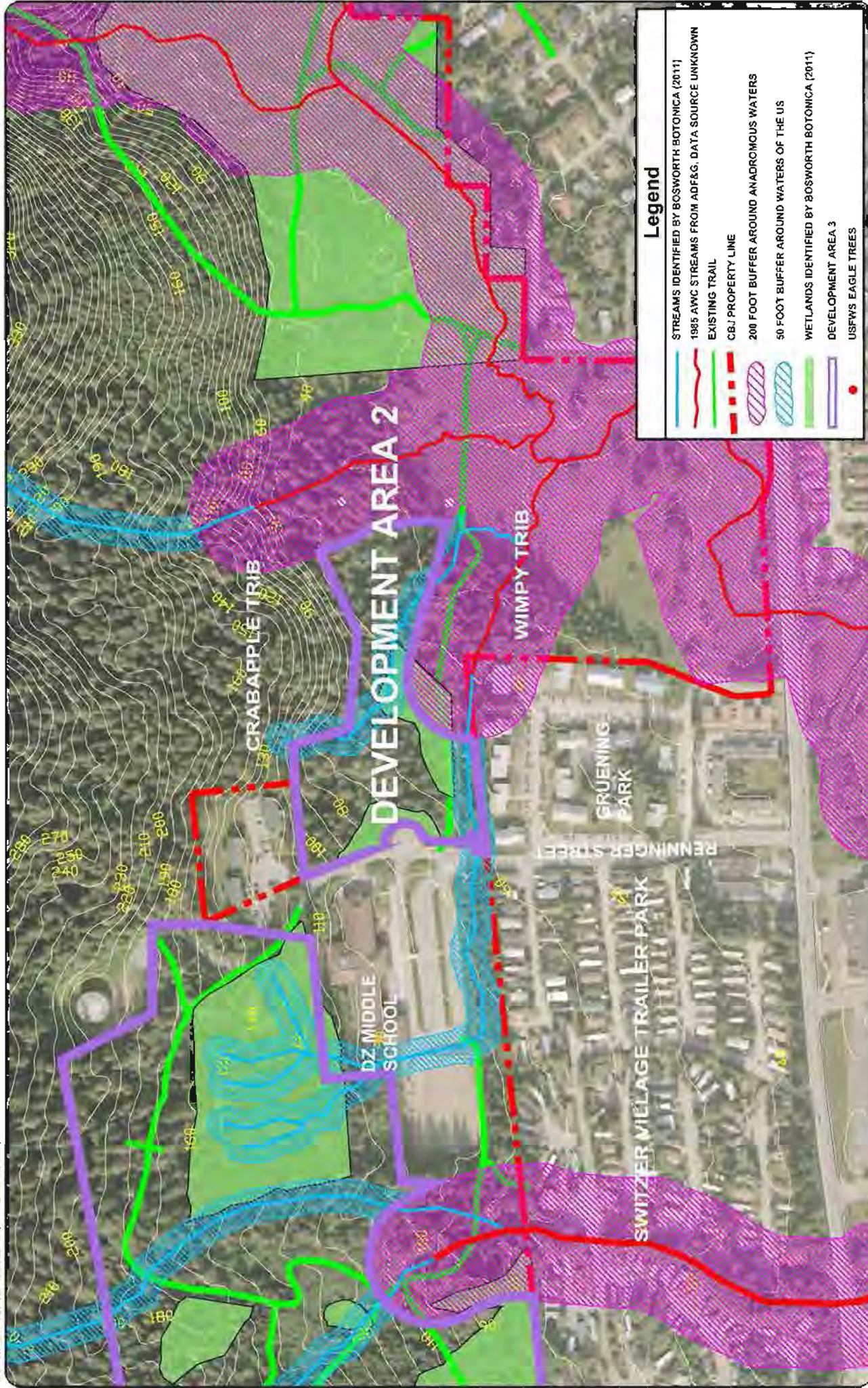


**ENVIRONMENTAL CONSTRAINTS MAP AREA 1**  
**CBJ SWITZER LANDS**  
**RESIDENTIAL DEVELOPMENT STUDY**  
**JUNEAU, ALASKA**

**R&M ENGINEERING, INC.**

CITYBOROUGH OF JUNEAU  
ALASKA'S CAPITAL CITY

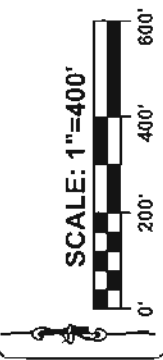





### Legend

- STREAMS IDENTIFIED BY BOSWORTH BOTONICA (2011)
- 1985 AWC STREAMS FROM ADF&G, DATA SOURCE UNKNOWN
- EXISTING TRAIL
- CBJ PROPERTY LINE
- 200 FOOT BUFFER AROUND ANADROMOUS WATERS
- 50 FOOT BUFFER AROUND WATERS OF THE US
- WETLANDS IDENTIFIED BY BOSWORTH BOTONICA (2011)
- DEVELOPMENT AREA 3
- USFS EAGLE TREES


**FIGURE 5**  
PAGE 7 OF 29



**ENVIRONMENTAL CONSTRAINTS MAP AREA 2**  
**CBJ SWITZER LANDS**  
**RESIDENTIAL DEVELOPMENT STUDY**  
**JUNEAU, ALASKA**

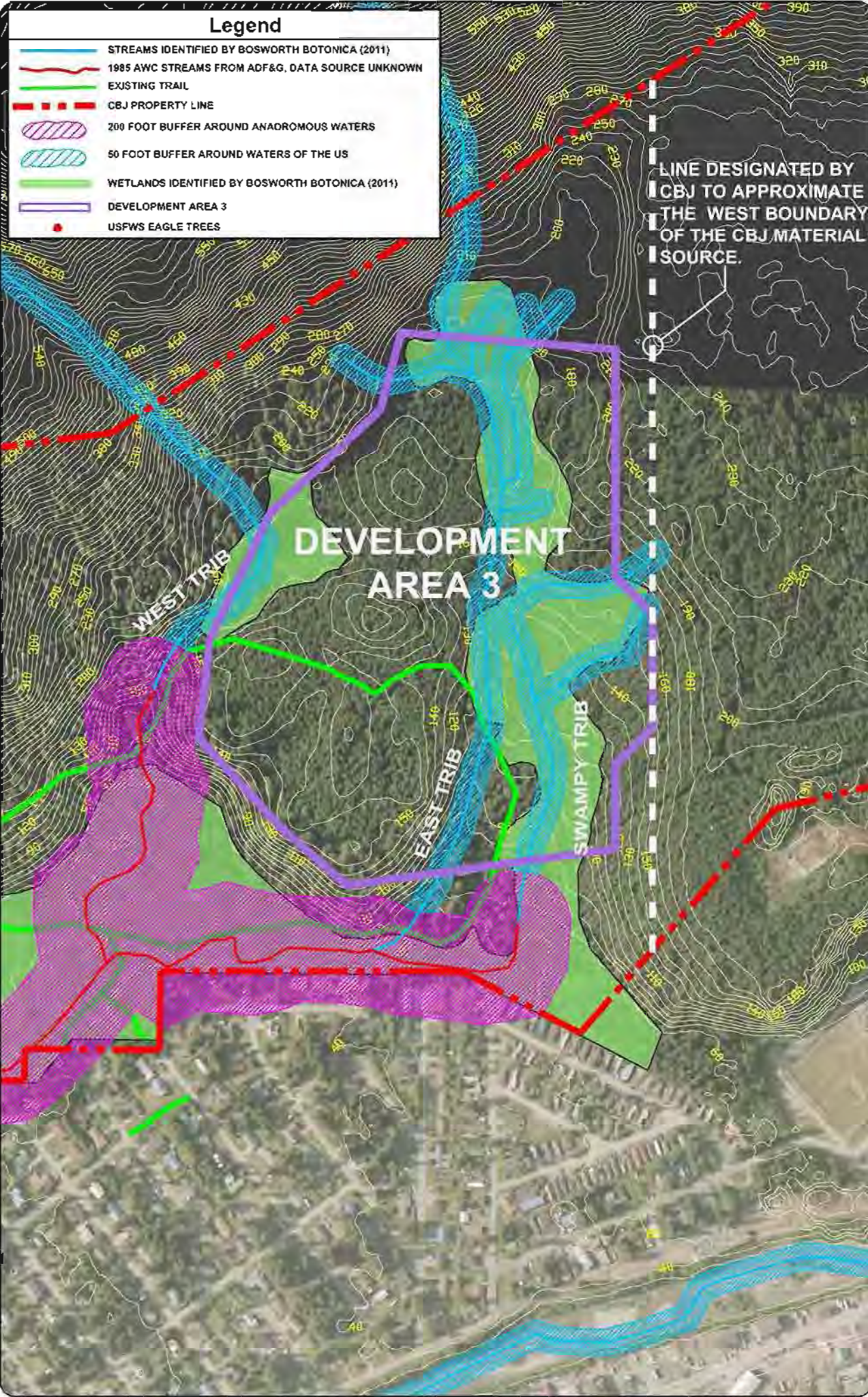


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CITY OF JUNEAU  
ALASKA'S CAPITAL CITY





**ENVIRONMENTAL CONSTRAINTS MAP AREA 3**  
**CBJ SWITZER LANDS**  
**RESIDENTIAL DEVELOPMENT STUDY**  
**JUNEAU, ALASKA**





The locations from ADF&G were adjusted using handheld GPS data obtained by BBC in August and September of 2011. ADF&G Division of Habitat field staff reviewed and approved these adjusted locations in October and November of 2011. They indicated they will nominate these locations for the next AWC catalog revision. All anadromous salmon streams are shown on our constraints figures with a 200-foot buffer, which is recommended by ADF&G. It is noted that road access is allowed through these buffers when designed to meet agency permitting requirements.

## 2.4 Bald Eagle Nest Trees

Bald eagles and their nests are protected by the Bald Eagle Protection Act of 1940. This act prohibits taking or disturbing bald eagles or their nests, and is regulated by the US Fish and Wildlife Service (USFWS). Bald eagles are most susceptible to disturbance during the nesting season, which generally runs from early March through August. The USFWS provided maps with the location of eagle nests. The nests were catalogued into their data base between 1994 and 1996. Bald eagles were recently removed from the endangered species list; which has changed the USFS permitting process.

We could not locate the catalogued USFWS eagle trees in the field. However, we did find a tree that appeared to have an eagle's nest that was not catalogued by USFWS. Eagle nests can be abandoned and new nests can occur each year; so any development will need to reevaluate current nest locations just prior to permitting and construction.

The USFWS catalogued eagles' nests are shown on our constraints figures and on Figure 5.

## 2.5 Geology and Geotechnical

Glaciation is the major geologic event that produced the topographic features and soils in the study area. During the late Pleistocene time (10,000 years ago) ice was as much as 4,000 feet thick in this area. Between 8,000 and 10,000 years ago the climate began warming and the ice melted. The glacial-scoured fjords filled with sea water, which was 600 feet higher relative to the land than it is today. The unloading of the ice and tectonic forces combined to produce a steady, but slow rise of the land (isostatic rebound). Glacial outwash poured silt, sand and icebergs into the fjords. The glaciomarine Gastineau Channel Formation was deposited from the glacial outwash material settling out of the seawater during this time of emergence.

As sea level lowered, wave cut benches and elevated beach deposits were left "stranded" above present day sea level.

## 2.6 Surficial Soil Units

The study area is located on the south slope of Heintzleman Ridge. There are six distinct surficial geologic deposits in the study area (*Surficial Geologic Map of the Juneau Urban area and Vicinity, Alaska*), by Robert D. Miller, 1975). Bedrock dominates at elevations above 300 feet to 500 feet, it outcrops or is covered with a thin mantle of soil, trees and brush. The bedrock is metamorphosed sedimentary and volcanic rocks (greywacke, schist and greenstone).

Weathering of the bedrock on steep slopes has produced a variety of gravity deposits (colluvium, talus, rubble and rock falls) downslope from the bedrock outcrops. These deposits consist of angular particles that range in size from silt to boulders. They are generally poorly consolidated and very porous. Their thickness ranges from 2 feet to 20 feet.

Mantling the lower slopes (generally below elevation 300 feet) are the extensive glaciomarine deposits for the Gastineau Channel Formation (Robert D. Miller, 1973). These are blue-gray silts and sands that range in consistency from soft and slippery to dense and rock hard. Their thickness ranges from 4 feet to 60 feet. At their lower elevations they are often covered with elevated silty gravelly raised beach deposits that are less than 5 feet thick.

There is a large, ancient (pre-1500) landslide deposit at the base of Heintzleman Ridge southeast of Switzer Creek. It is a heterogeneous mixture of angular rocks, soil, silt and sand. It probably ranges in thickness from 2 feet to 20 feet. These deposits are stabilized, but likely to be poorly consolidated. Development area 3 is almost entirely on this stabilized landslide deposit.

On the flat terrain in lower Switzer Creek and below Glacier Highway are large areas of emergent intertidal silts and sands that are typically loose and poorly consolidated. Some areas of peat have been noted ranging in thickness from 3 feet to 10 feet.

## 2.7 Geologic Hazards

Small landslides and avalanches are common on the steep upper slopes of Heintzleman Ridge. However, none of the active slide tracks extend below 2,000 foot elevation in this study area. Timberline is at approximately 2,000 foot elevation and the slope is heavily forested and less steep below this elevation.

Previously published work show that slopes in Juneau steeper than 37 degrees are generally highly unstable with regard to landslide hazards and slopes between 28-37 degrees are generally considered potentially unstable (*Geophysical Hazards Investigation for the City and Borough of Juneau, Alaska, a Summary Report*, by DMJM, 1972).

## 2.8 Geotechnical Investigations

R&M conducted over 100 test pits and soil boring logs in the vicinity of Development Areas 1 and 2 in conjunction with housing projects and the Dzantik'i Heeni Middle School (DZMS) geotechnical reports



and studies. This sub-surface information is not site specific and may not indicate exact conditions for infrastructure and housing construction; but it does give a general idea what to expect.

### **2.8.1 Geotechnical Investigations in Development Area 1**

R&M performed 46 test pits, probes and bore holes in 1990 related to the geotechnical report for DZMS. There was no strong pattern of stratification or segregation found on the site. Soil conditions at the site satisfy most of the criteria for definition of “fan deposits”. Rapid Channel changes have resulted in the burial of peat deposits and fallen or standing trees by granular material. Some stream cut banks reveal cross sections of stream channels crossing stream channels which were subsequently filled.

Ground water level varies considerably over the site. In certain test pits, three to four pervious water-bearing soil levels were encountered during excavation; while in the test pits in the most northeasterly corner of the school site, no water was encountered in the highly pervious gravelly soil.

Soil conditions were marginal for the design and construction of the conventional reinforced concrete spread footing foundations used for the school; however, by over-excavating and removing organic soils and over-excavating and re-compacting soft soils in the building footprint, the school foundation has performed very well.

### **2.8.2 Geotechnical Investigations near Development Area 2**

R&M performed subsurface investigations for the original Gruening Park complex in 1972. Some of these borings are just south of Development Area 2. In addition, R&M performed subsurface investigations for the Gruening Park complex addition 1992. Three holes were done for the building in the northeast corner of the complex. In 1994, Crowther Associates did a subsurface investigation north of Development Area 2. After construction of three housing units north of Development Area 2, there were settlement problems with Building C; and R&M did test pits and borings to identify the problem and determine a solution. R&M’s borings and test pits were just north of Development Area 2. Several of the borings for DZMS were just west of Development Area 2, on the west side of Renninger Street.

While none of the existing subsurface information is directly in Development Area 2, the information near the west portion of Development Area 2 is favorable for conventional foundations. The information south of the eastern portion of Development Area 2 led to a piling foundation.

### **2.8.3 Soils in Development Area 3**

We are not aware of any geotechnical investigations in this area; however as noted above, Development Area 3 is almost entirely on a stabilized landslide deposit consisting of a mixture of angular rocks, soil, silt and sand, which may be poorly consolidated. To the east, the CBJ is extracting gravel and R&M has done probes in that area that indicates fairly good sand and gravels; but also includes some peat and organic deposits.

It is our assumption that conventional foundations would be appropriate in Development Area 3; but specific subsurface investigations would be required once housing locations are known.

### 3. Future Elementary School Site

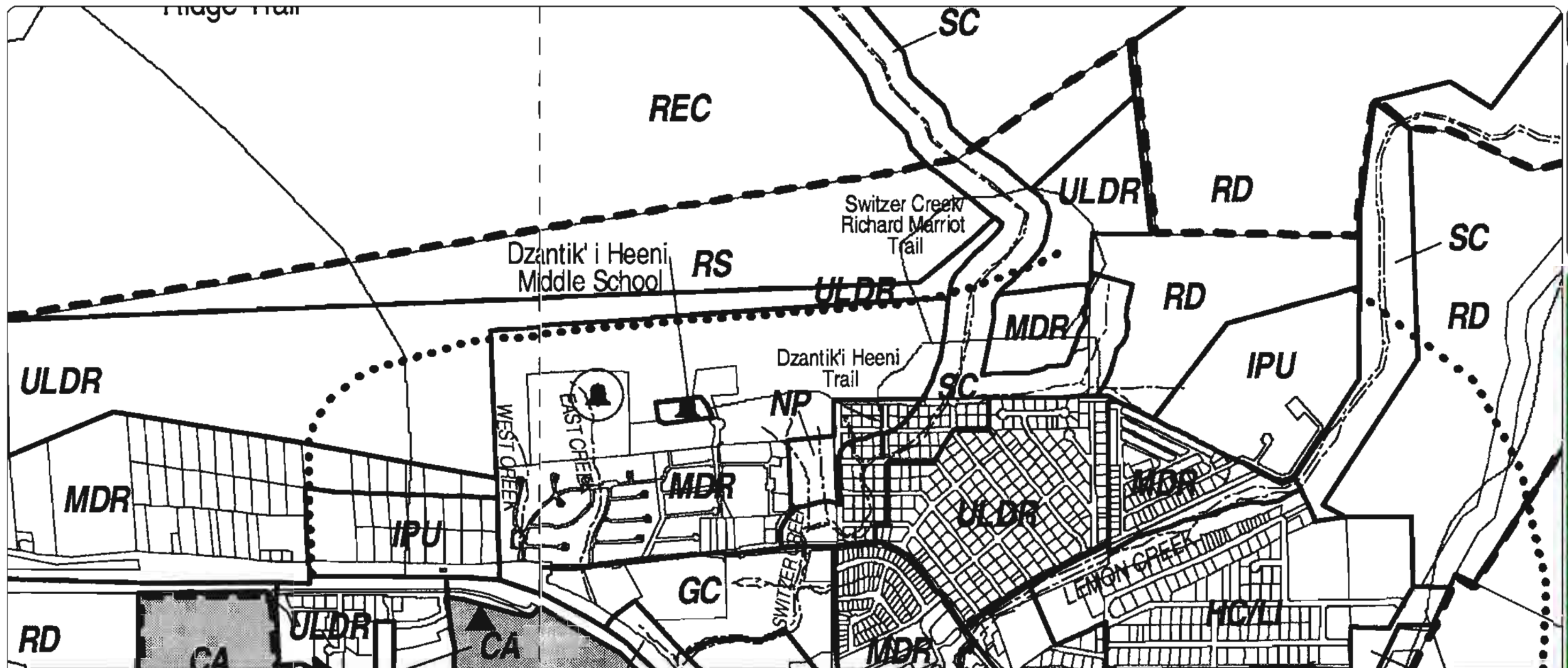
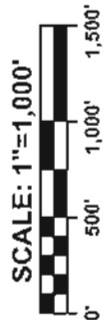
The CBJ and the Juneau School District (JSD) agree that long term community development includes land set aside for a future elementary school in the Switzer Creek area. To support this concept, the CBJ Comprehensive Plan references a future elementary school in the Switzer Creek area. The JSD envisions that the new school would be above the Switzer Creek Mobile Home Park, and separated from DZMS by a trail system and wetlands. However, a specific amount of land and a precise location for the future school has not been established. For this study, and for conceptual planning purposes, the future school site is represented proximate to DZMS. Considering the siting and location needs of an elementary school, this study concludes that a future elementary school could be located in any of the development areas.

The State of Alaska Department of Education and Early Development (DEED) currently use a *Selection Criteria and Evaluation Handbook* (1997), to recommend the site size. That handbook recommends 10 acres plus one acre for every 100 students. Using the average, or the high value of the current Juneau elementary student population, would yield a recommended site of between 13 and 14 acres. DEED is currently drafting a new method which will follow the current recommendations of the Council of Educational Facility Planners publication *The Guide for Planning Educational Facilities*, which will result in a recommendation of less land area for site size. For comparison, we obtained rough site acreage of the existing six elementary schools from Google Earth. The existing school sites average just over 8 acres. The largest is 15 acres and most are less than 8 acres.

Members of the project team met with JSD representatives in November 2011. The JSD expressed interest in maintaining the trails and a future school site west of DZMS. They showed some interest in the 8 acres east of DZMS on the east side of Renninger Street. They were also interested in a planned unit housing development around a future school site in Development Area 3, similar to the way housing is laid out around Glacier Valley School. The need for another elementary school is not immediate and based on recent population trends is probably decades in the future. More consideration will be appropriate as demand for the future school is realized and the CBJ initializes planning for the development areas. For planning purposes, a ten acre site is identified in Development Area 1; but actual size and location would be determined in the future, Figure 11. This school site as depicted could displace up to 230 potential dwelling units.

### 4. Conceptual Development Areas

The Switzer Study Area is located primarily in subarea 5 of the Juneau Comprehensive Plan, which is the Switzer Creek, Lemon Creek and Vanderbilt Creek area land use maps, Figure 7. The Comprehensive Plan lists 15 guidelines and considerations for subarea 5.



## NATURAL RESOURCE

<b>REC</b>	Recreational Resource
<b>RD</b>	Resource Development
<b>SP</b>	State Park
<b>FP</b>	Federal Park
<b>NP</b>	CBJ Natural Area Park
<b>RS</b>	CBJ Recreational Service Park
<b>CA</b>	CBJ Conservation Area
<b>SC</b>	Stream Protection Corridor

## COMMERCIAL INDUSTRIAL

<b>GC</b>	General Commercial
<b>WC</b>	Waterfront Commercial
<b>WCI</b>	Waterfront Commercial Industrial
<b>HC/LI</b>	Heavy Commercial/Light Industrial
<b>IND</b>	Industrial

## RESIDENTIAL

<b>RDR</b>	Rural Dispersed Residential
<b>RLDR</b>	Rural Low Density Residential
<b>ULDR</b>	Urban Low Density Residential
<b>MDR/SF</b>	Medium Density Residential- Single Family
<b>MDR</b>	Medium Density Residential
<b>HDR</b>	High Density Residential
<b>MU</b>	Mixed Use
<b>M/MU</b>	Marine Mixed Use

## PUBLIC

<b>IPU</b>	Institutional and Public Use
	Existing School
	Potential School Location

## ROADS TRAILS

	Potential Arterial (alignment not specific)
	Potential Road (alignment not specific)
	Trails

## OTHER

	New Growth Areas
	Mendenhall Wetlands
	State Game Refuge
	Subarea Boundary
	Urban Service Area
	Beach Access
	Streams

**City & Borough of Juneau**  
**COMPREHENSIVE PLAN**

City & Borough of Juneau  
 Alaska's Capital City  
 Adopted October 20th, 2008  
 Ordinance No. 2008-30



NOTE: Potential geophysical hazards, wetlands, flood zones, natural resource setbacks or other features which can affect properties may be present. CONTACT THE COMMUNITY DEVELOPMENT DEPARTMENT FOR DETAILED INFORMATION.