

# Application for Major Site Plan Review

Municipality of Anchorage  
 Planning Department  
 PO Box 196650  
 Anchorage, AK 99519-6650



| PETITIONER*  |         | PETITIONER REPRESENTATIVE (if any)                 |         |
|--|---------|--|---------|
| Name (last name first) Don Bantz, President,<br>Alaska Pacific University, |         | Name (last name first) Michelle Ritter, AICP, DOWL |         |
| Mailing Address<br>4101 University Drive                                   |         | Mailing Address<br>4041 B Street                   |         |
| Anchorage, AK 99508  |         | Anchorage, AK 99503                                |         |
| Contact Phone: Day<br>(800) 2527528  | Evening | Contact Phone: Day<br>(907) 562-2000               | Evening |
| Fax  |         | Fax  |         |
| E-mail<br>dbantz@alaskapacific.edu   |         | E-mail<br>mritter@dowl.com                         |         |

\*Report additional petitioners or disclose other co-owners on supplemental form. Failure to divulge other beneficial interest owners may delay processing of this application.

| PROPERTY INFORMATION   |                  |                 |   |
|--|------------------|-----------------|---|
| Property Tax # (000-000-00-000): 005-101-01-000, 005-101-02-000, 005-101-04-000, 004-221-07-000, 004-201-10-000, 005-131-06-000, 005-131-07-000, 005-131-05-000, and 005-131-04-000  |                  |                 |   |
| Site Street Address: 4101 University Drive (APU Campus)  |                  |                 |   |
| Current legal description: (use additional sheet if necessary)<br>Alaska Pacific University Subdivision, Tract C3; APU Endowment Subdivision, Tract C; APU Endowment Subdivision, Tract D; APU Endowment Subdivision, Tract B; APU Endowment Subdivision, Tract A;<br>T13N R3W SEC 27, W2NW4, SE4NW4, S2NE4NW4; T13N R3W SEC 27, NW4NE4NW4 PTN; T13N R3W SEC 27, NE4NW4NE4NW4 PTN; |                  |                 |   |
| Zoning: PLI District   | Acreage: 177.178 | Grid #: SW 1736 | Underlying plat #: 080078, 970024, 920117, 789999 |

| SITE PLAN APPROVAL REQUESTED      |  |
|-----------------------------------|--|
| Use:<br>Institutional Master Plan |  |
| <input type="checkbox"/> New SPR  | <input type="checkbox"/> Amendment to approved site plan Original Case #: 2010-100 |

I hereby certify that (I am)(I have been authorized to act for) owner of the property described above and that I petition for a major site plan review in conformance with Title 21 of the Anchorage Municipal, Code of Ordinances. I understand that payment of the application fee is nonrefundable and is to cover the costs associated with processing this application, and that it does not assure approval of the site plan. I also understand that assigned hearing dates are tentative and may have to be postponed by Planning Department staff, the Planning and Zoning Commission, or Urban Design Commission for administrative reasons.


3/29/16  
 Signature  Owner  Representative (Agents must provide written proof of authorization) Date  
 Michelle Ritter  
 Print Name

|                    |                               |                  |                           |  |
|--------------------|-------------------------------|------------------|---------------------------|--|
| Accepted by:<br>SF | Poster & Affidavit:<br>3+aff: | Fee:<br>\$15,750 | Case Number:<br>2016-0054 | Requested Meeting Date: P2C<br>7-11-16 |
|--------------------|-------------------------------|------------------|---------------------------|--|

**COMPREHENSIVE PLAN INFORMATION**

Anchorage 2020 Urban/Rural Services:  Urban     Rural

Anchorage 2020 Major Elements – site is within or abuts:  
 Major employment center                       Redevelopment/mixed use area                       Town center  
 Neighborhood commercial center                       Industrial reserve  
 Transit - supportive development corridor                       District/area plan area: UMED District

Chugiak-Eagle River Land Use Classification:  
 Commercial                       Industrial                       Parks/open space                       Public lands/institutions                       Town center  
 Transportation/community facility                       Alpine/slope affected                       Special study area                       Development reserve  
 Residential at \_\_\_\_\_ dwelling units per acre                       Environmentally sensitive area

Girdwood- Turnagain Arm Land Use Classification  
 Commercial                       Industrial                       Parks/open space                       Public lands/institutions                       Resort  
 Transportation/community facility                       Alpine/slope affected                       Special study area                       Reserve  
 Residential at \_\_\_\_\_ dwelling units per acre                       Mixed use                       Rural homestead

**ENVIRONMENTAL INFORMATION** (All or portion of site affected)

Wetland Classification:                       None                       "C"                       "B"                       "A"  
Avalanche Zone:                       None                       Blue Zone                       Red Zone  
Floodplain:                       None                       100 year                       500 year  
Seismic Zone (Harding/Lawson):                       "1"                       "2"                       "3"                       "4"                       "5"

**RECENT REGULATORY INFORMATION** (Events that have occurred in last 5 years for all or portion of site)

Rezoning - Case Number:  
 Preliminary Plat  Final Plat - Case Number(s):  
 Conditional Use - Case Number(s):  
 Zoning variance - Case Number(s):  
 Land Use Enforcement Action for  
 Building or Land Use Permit for  
 Wetland permit:  Army Corp of Engineers                       Municipality of Anchorage

**APPLICATION REQUIREMENTS**

1 copy required:     Signed application (original)  
                                  Watershed sign off form, completed  
                                  8 ½" by 11" copy of site plan/building plans submittal

35 copies required:  Signed application (copies)  
 Project narrative explaining:  
                                  the project                       planning objectives  
                                  addressing the site plan review criteria on page 3 of this application  
 Site plan to scale depicting, with dimensions:  
                                  building footprints                       parking areas                       vehicle circulation and driveways  
                                  pedestrian facilities                       lighting                       grading  
                                  landscaping                       loading facilities                       freestanding sign location(s)  
                                  required open space                       drainage                       snow storage area or alternative strategy  
                                  trash receptacle location and screening detail                       fences  
                                  significant natural features                       easements                       project location  
 Building plans to scale depicting, with dimensions:  
                                  building elevations                       floor plans                       exterior colors and textures  
 Assembly Ordinance enacting zoning special limitations, if applicable  
 Summary of community meeting(s)

(Additional information may be required.)

### GENERAL SITE PLAN REVIEW STANDARDS (AMC 21.03.180F.)

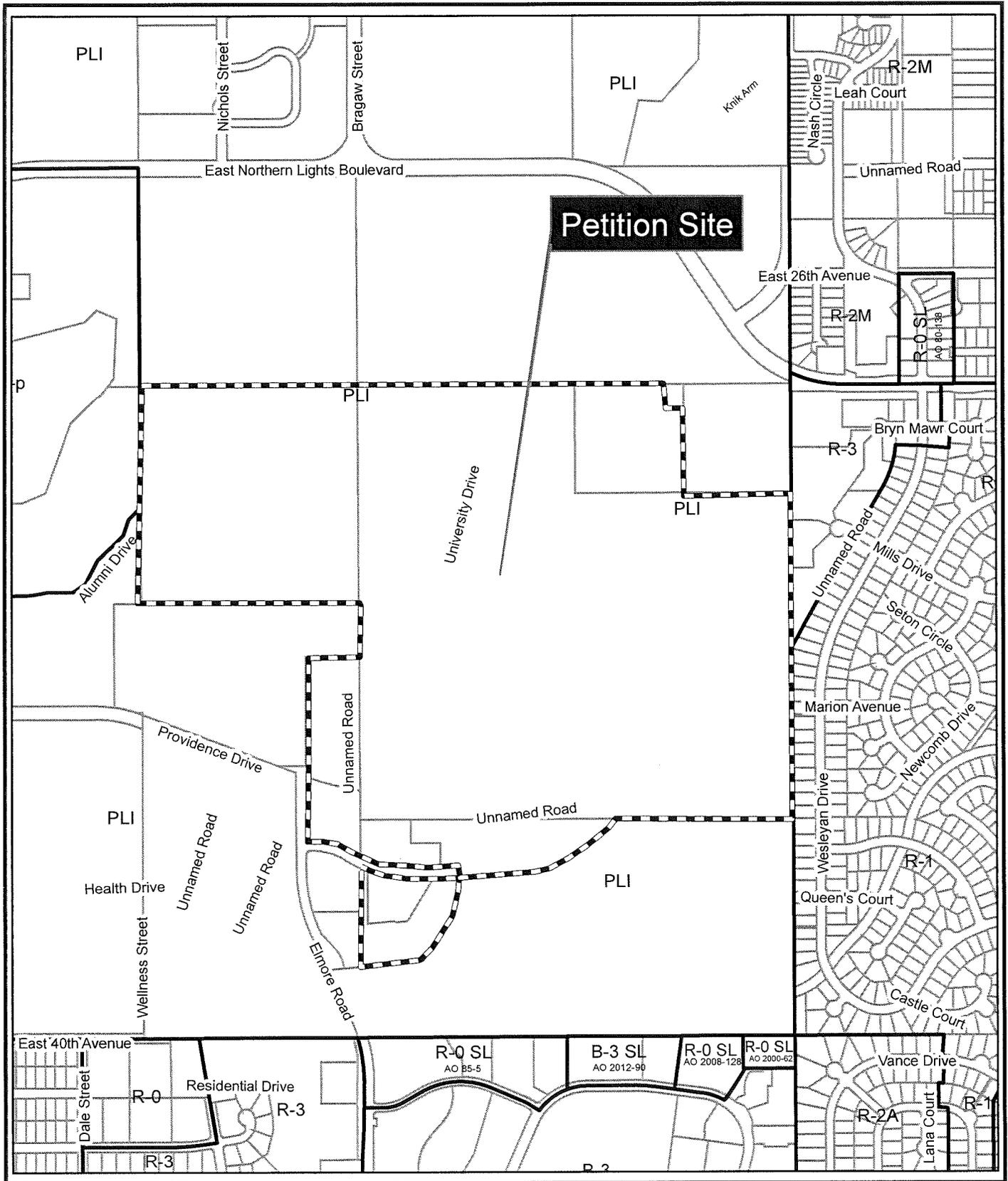
The Urban Design Commission or the Planning and Zoning Commission shall review the proposed site plan governed by the general site plan approval criteria for consistency with conformity to the requirements of this title, and the effects of the proposal on the area surrounding the site. Each standard must have a response in as much detail as it takes to explain how your project satisfies the standard. The burden of proof rests with you.

1. The site plan is consistent with any previously approved subdivision plat, planned development master plan, or any other precedent plan or land use approval;
2. The site plan complies with all applicable development and design standards set forth in this title, including but not limited to the provisions in chapter 21.04, *Zoning Districts*, chapter 21.05, *Use Regulations*, chapter 21.06, *Dimensional Standards and Measurements*, and chapter 21.07, *Development and Design Standards*;
3. The site plan addresses any significant adverse impacts that can reasonably be anticipated to result from the use, by mitigating or offsetting those impacts to the maximum extent feasible; and
4. The development proposed in the site plan is consistent with the goals, objectives, and policies of the comprehensive plan.

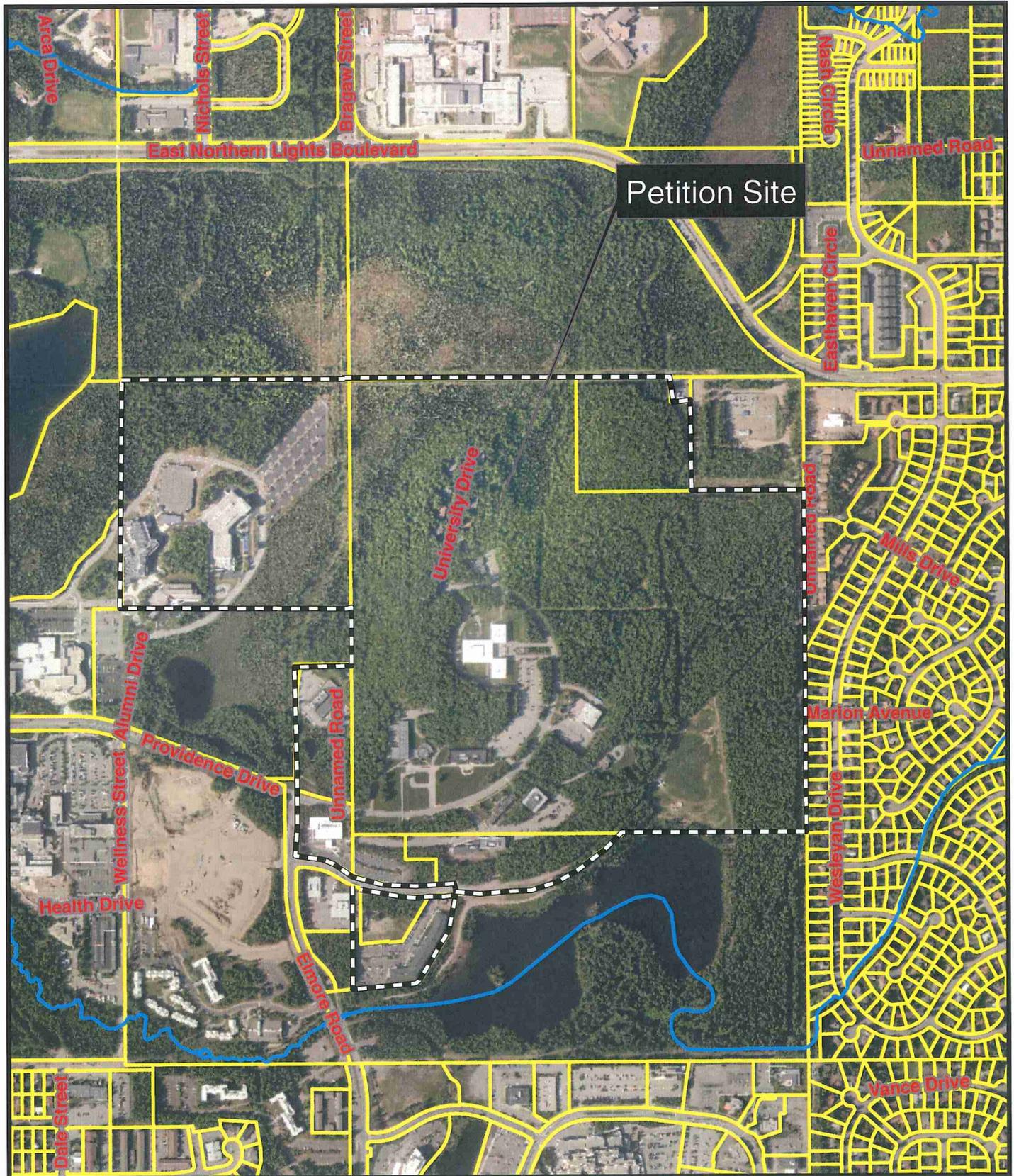
### SPECIAL LIMITATION STANDARDS (if applicable)

The applicable commission shall review the proposed site plan governed by special limitation for consistency with the special limitations, goals, policies and land use designations of the comprehensive development plan and other municipal plans adopted by the assembly, conformity to the requirements of this title, and the effects of the proposal on the area surrounding the site. Each special limitation standard must have a response in as much detail as it takes to explain how your project satisfies the standard. The burden of proof rests with you.

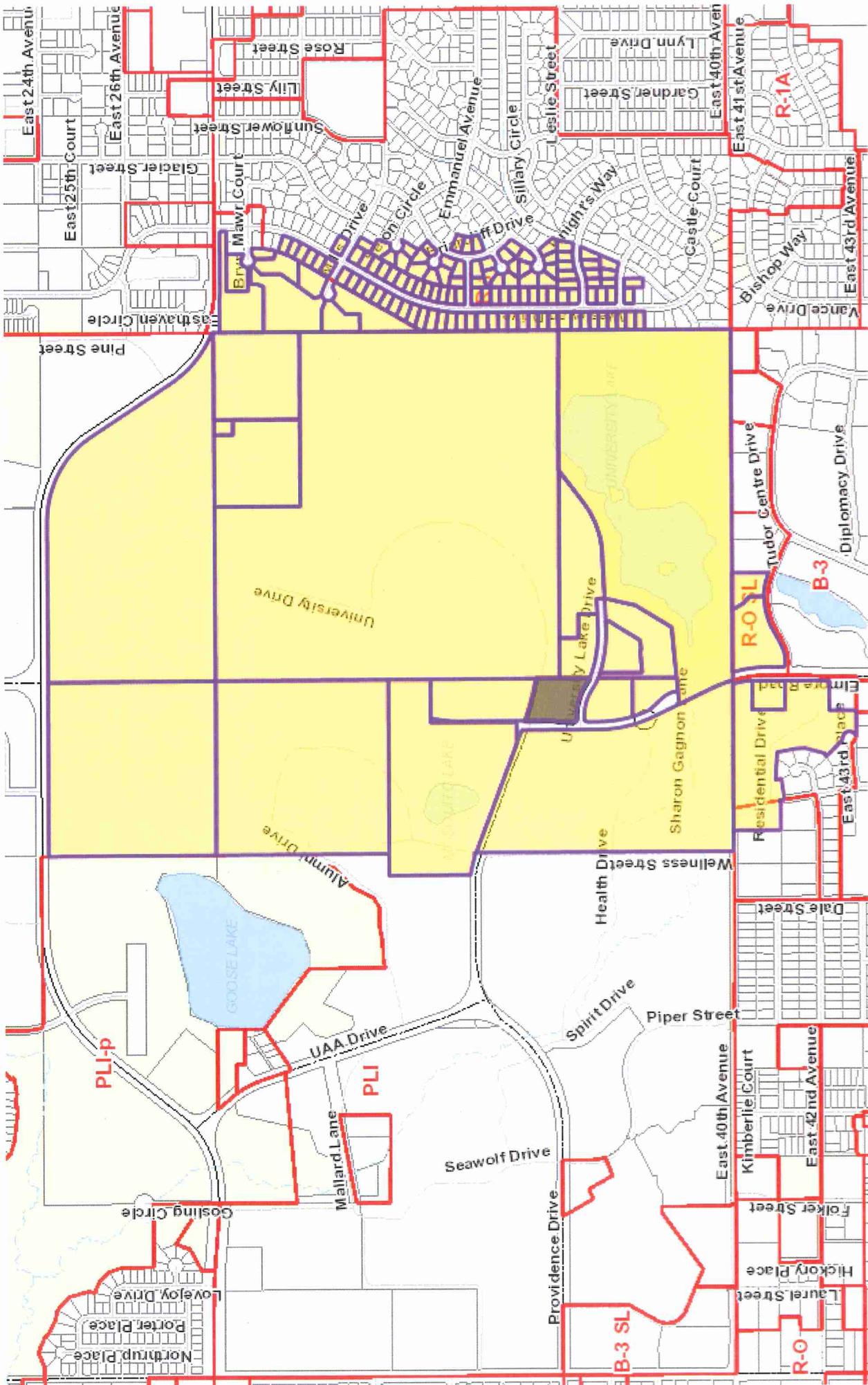
# 2016-0054



# 2016-0054



Anchorage



2016-0054 PHN map  
distance = 600' (142 pcls)

U Building One, LLC  
425 G Street, Suite 210  
Anchorage, AK 99501

December 22, 2015

Mr. Hal A. Hart, AICP  
Community Development Director  
Municipality of Anchorage  
4800 Elmore Road  
Anchorage, Alaska 99507

Subject: Alaska Pacific University Institutional Master Plan Amendment  
Letter of Authorization

Dear Mr. Hart:

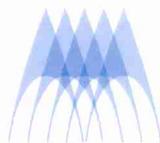
U Building One, LLC is the long term leaseholder of the property identified by the following tax identification number: 004-201-10-000.

U Building One, LLC authorizes DOWL to act on our behalf regarding the APU Institutional Master Plan Amendment for the above mentioned property. If you have any questions please feel free to call me at (907) 646-4644.

Sincerely,



Mark E. Pfeffer, Manager  
U Building One, LLC



December 23, 2015

Mr. Hal A. Hart, AICP  
Community Development Director  
Municipality of Anchorage  
4800 Elmore Road  
Anchorage, Alaska 99507

Subject: Alaska Pacific University Institutional Master Plan Amendment  
Letter of Authorization

Dear Mr. Hart:

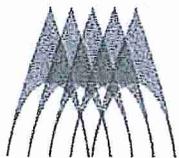
Alaska Pacific University (APU) is the owner of the properties identified by the following tax identification numbers:

- 005-101-01-000;
- 005-101-02-000;
- 005-101-04-000;
- 004-221-07-000;
- 004-201-10-000;
- 005-131-06-000;
- 005-131-07-000;
- 005-131-05-000; and
- 005-131-04-000.

APU authorizes DOWL to act on our behalf regarding the APU Institutional Master Plan Amendment for the above mentioned properties. If you have any questions please feel free to call me at (907) 564-8220.

Sincerely,

Deborah Johnston  
Chief Financial Officer  
Alaska Pacific University



# Alaska Pacific University

**President:**  
Don Bantz

**Chair:**  
Harry McDonald

**Vice Chair:**  
Trigg Davis

**Secretary:**  
David Karp

**Treasurer:**  
Roger Chan

Hugh A. Ashlock  
Robert Batch  
Mary Bettis  
Carl Brady, Jr.  
Larry Cash  
Andrew Eker  
John Eng  
Charlie Fahl  
Katherine Gottlieb  
Robert Gottstein  
Roberta Graham  
Wesley Heinold  
Patricia Brown Heller  
Christopher Hodel  
Karen L. Hunt  
Francis T. Hurley  
Donald Keil, Jr.  
Sue Linford  
Bonnie Mehner  
Lottie M. Michael  
David O'Connor  
Edward Rasmuson  
William Sheffield  
Jan Sieberts  
George Walton  
John Wanamaker  
Eric E. Wohlforth

December 18, 2015

To Whom It May Concern:

During my absence from December 19, 2015 - January 7, 2016, Tracy Stewart, Academic Dean of Alaska Pacific University will serve as Acting President of Alaska Pacific University, and has such authority to act accordingly.

Deborah Johnston, CFO, is also empowered, with the approval of the Chairman and/or Vice Chairman of the APU Board of Trustees, to act on behalf of the President to execute any documents concerning the Memorandum of Agreement between UAA and APU dated January 2014 and the contract with Dowl re: Campus Master Plan updates. In addition, she is empowered to act on behalf of the President, with the approval of the Chairman and/or Vice Chairman of the APU Board of Trustees, for any financial or real estate related actions, when required.

Sincerely,

Don Bantz  
President

**Supplemental Form: OWNERSHIP AND BENEFICIAL INTEREST DISCLOSURE**

**PETITIONER: CORPORATE OFFICERS OR PARTNERS**

Applicants for an entitlement that will be in possession and the responsibility of more than one individual, such as a co-owner, joint venture, partnerships, corporations, company, or other similar form of ownership, are required to disclose a full and complete list of the name and address of each principal. (use additional paper if necessary)

| Name           | Title or Office(if any) | Address               |
|----------------|-------------------------|-----------------------|
| Don Bantz, APU | President               | 4101 University Drive |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |
|                |                         |                       |

**PROPERTY OWNER: CORPORATE OFFICERS OR PARTNERS**

The petitioner of a property owned by more than one individual that will benefit from an entitlement is required to disclose a full and complete list of the name and address of each partner, officer, or co-owner. The other owner interest to be reported is co-owner, joint venture, partnership, corporation, company, or other similar form of ownership. (use additional paper if necessary)

| Name | Title or Office(if any) | Address |
|------|-------------------------|---------|
|      |                         |         |
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|      |                         |         |

**Attach this sheet to your application form**

|              |      |                 |             |
|--------------|------|-----------------|-------------|
| Accepted by: | Date | Application for | Case Number |
|--------------|------|-----------------|-------------|

**Supplemental Form: *ADDITIONAL PETITIONERS***

**ADDITIONAL PETITIONERS:**

Applicants for an entitlement involving more than one property description and owned by more than one individual are required to provide the name, legal description of property owned, and signature of each petitioner. Persons signatory to this application supplement are deemed to be petitioners (use additional paper if necessary)

We, the undersigned, hereby apply for: \_\_\_\_\_

| Signature | Name (printed or typed) | Legal description of property owned within petition area |
|-----------|-------------------------|--|
| 1.        |                         |  |
| 2.        |                         |  |
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| 19.       |                         |  |
| 20.       |                         |  |

**Attach this sheet to your application form**

|              |      |                 |             |
|--------------|------|-----------------|-------------|
| Accepted by: | Date | Application for | Case Number |
|--------------|------|-----------------|-------------|

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UNIVERSITY AREA COMMUNITY COUNCIL (UACC)

Wednesday May 4, 2016, 7:00-9:00 P.M.

**LOCATION:**

**University Baptist Church  
4313 Wright Street (corner of Tudor and Wright St.)**

1. Opening (7:00 P.M.)
  - A. Welcome & Introductions (5 min.)
2. Approval of Minutes: April 4, 2016 – (3 min.)
3. Additions to and Approval of May's Agenda (2 min.)
4. Informational Reports
  - A. Reports from Public Servants/Elected Officials (10 min each)
  - B. UACC Board Report (5 min.)
  - C. FCC Representative Report (5 min.)
5. New Business (7:50 P.M.)
  - A. Anchorage Talks Transit – How the People Mover Should be Using its Resources – Collin Hodges, Transit Planner, Anchorage Dept. of Transportation (15 min.)
  - B. The Alaska Pacific University Institutional Master Plan – Tim Potter, DOWL (10 min.)
  - C. Providence Rezone/Replat of three parcels on Piper St. btw Tudor Road and 42<sup>nd</sup> Ave.– Michelle Ritter, DOWL (10 min.)
  - D. Resolution re: Anchorage Parks and Rec's University Park Master Plan drafted by Stephen Rafuse – Steve Zemke, UACC Secretary (2 min.)
6. Adjournment no later than 8:55 PM

***“The purpose of the council shall be to improve communications between the citizens of the community and all entities, which may affect it, to encourage community involvement of all citizens, and to respond to local government proposals submitted to the council.”***

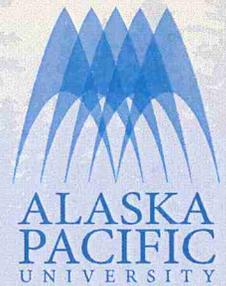
*You're Invited!*

**University Area Council Meeting  
Alaska Pacific University  
Institutional Master Plan Amendment  
Regular Meeting Agenda Item Notification**

**\*Wednesday, May 4, 2016**

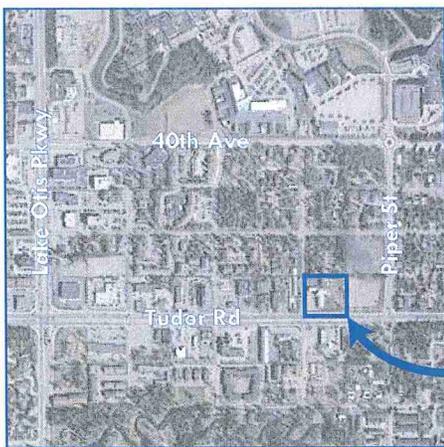
**7:00 PM – 9:00 PM**

**University Baptist Church  
4313 Wright Street  
Anchorage, Alaska 99508**



**Wednesday, May 4, 2016**

Alaska Pacific University (APU) with DOWL will be at the regularly scheduled University Area Community Council on May 4th, 2016, to present on a proposed Institutional Master Plan Amendment. The proposed amendments will update the plan to current municipal code standards and reflect future changes and refinements to the campus master plan.



**University Baptist Church  
4313 Wright Street  
Anchorage, Alaska 99508  
7:00 PM – 9:00 PM**

We welcome your feedback! There will be an opportunity to provide your comments at the meeting. You can also submit your comments or request information by contacting Michelle Ritter:

**Michelle Ritter, AICP, Senior Planner DOWL**  
4041 B Street  
Anchorage, AK 99503  
(907) 562-2000  
mritter@dowl.com





**Office Locations**

**ALASKA**

- Anchorage
- Juneau
- Fairbanks
- Ketchikan
- Kodiak
- Palmer

**ARIZONA**

- Tempe
- Tucson

**COLORADO**

- Golden
- Gunnison
- Montrose

**MONTANA**

- Billings
- Bozeman
- Butte
- Great Falls
- Helena
- Miles City

**NORTH DAKOTA**

- Dickinson

**OREGON**

- Bend

**WASHINGTON**

- Redmond
- Seattle

**WYOMING**

- Gillette
- Lander
- Laramie
- Sheridan

**MEETING SUMMARY**

|                           |   |                   |        |
|---------------------------|---|-------------------|--------|
| <b>Date:</b>              | 5/4/16                                    | <b>Time:</b>      | 7:00pm |
| <b>Meeting called by:</b> | University Area Community Council         | <b>Attendees:</b> |        |
| <b>Project:</b>           | APU Master Plan Amendment                 | DOWL<br>APU       |        |
| <b>Project Number:</b>    | 1132.62127.01                             |                   |        |
| <b>Subject:</b>           | 2 <sup>nd</sup> Community Council Meeting |                   |        |

**Meeting Notes:**

Background:

*DOWL and APU attended the University Area Community Council (UACC) on May 4<sup>th</sup>, 2016 to present amendments to the Alaska Pacific University (APU) Master Plan. Although DOWL had presented the project at the March 2<sup>nd</sup>, 2016 UACC meeting, it was explained that the deadline for mailed notification in advance of the previous meeting had unintentionally been missed, by less than 24 hours.*

*APU's existing plan addressed topics such as design standards, parking, snow storage, land use, and growth of the university and endowment lands. DOWL explained how the endowment lands provide revenue to APU and are a vital component to the function of the university.*

*The revised master plan supports development of the endowment lands, while increasing the trail buffers. One of the major changes to the land use map includes increased natural buffer zones along the Chester Creek Trail and between new development on the endowment lands. The previous plan called for 25-foot buffers, which have been increased to 100-foot buffers. The buffers will create development pods which will break up visual impacts on the campus and allow for developments that are appropriate in scale with the community.*

*Additionally, since the original master plan was approved, several planning actions have occurred including implementation of new Title 21, the Northern Access Project, and the 2015 UMED District Plan Update. The amendments to the APU Master Plan reflect these planning actions and the*

*requirements of new Title 21. The amendment will also update the land use and development standards to reflect future development patterns on the campus. The amendment is a public process that will go to the Planning and Zoning Commission in July 11<sup>th</sup>.*

Community Questions and Comments

Community (C): Does the property line include the Chester Creek Trail easement?

DOWL: Yes, the trail easement is on APU's campus. The proposed 100-foot buffer would be measured from the west edge of the physical trail itself.

C: Is the northern edge of the APU campus shown on the plan?

DOWL: Yes, the parcels to the north are owned by UAA.

C: What restrictions does APU put on the type of tenants that could be located on the campus? How does university characterize the uses?

DOWL: The Institutional Master Plan will layout design and use standards. For instance there will be size restrictions on uses with a commercial component recognizing a commercial development such as Costco or Fred Meyer would not be in scale with the campus. Building height restrictions will also be included.

C: When will plan details be available?

DOWL: The Institutional Master Plan will be submitted within two weeks. As soon as we have incorporated final comments from the community and the client we will make available.

C: What uses have been considered on west side?

DOWL: Restaurant and retail are considered on the west side, envisioning a walkable, bike-able UMED Village development, and we will distribute a copy to the community council.

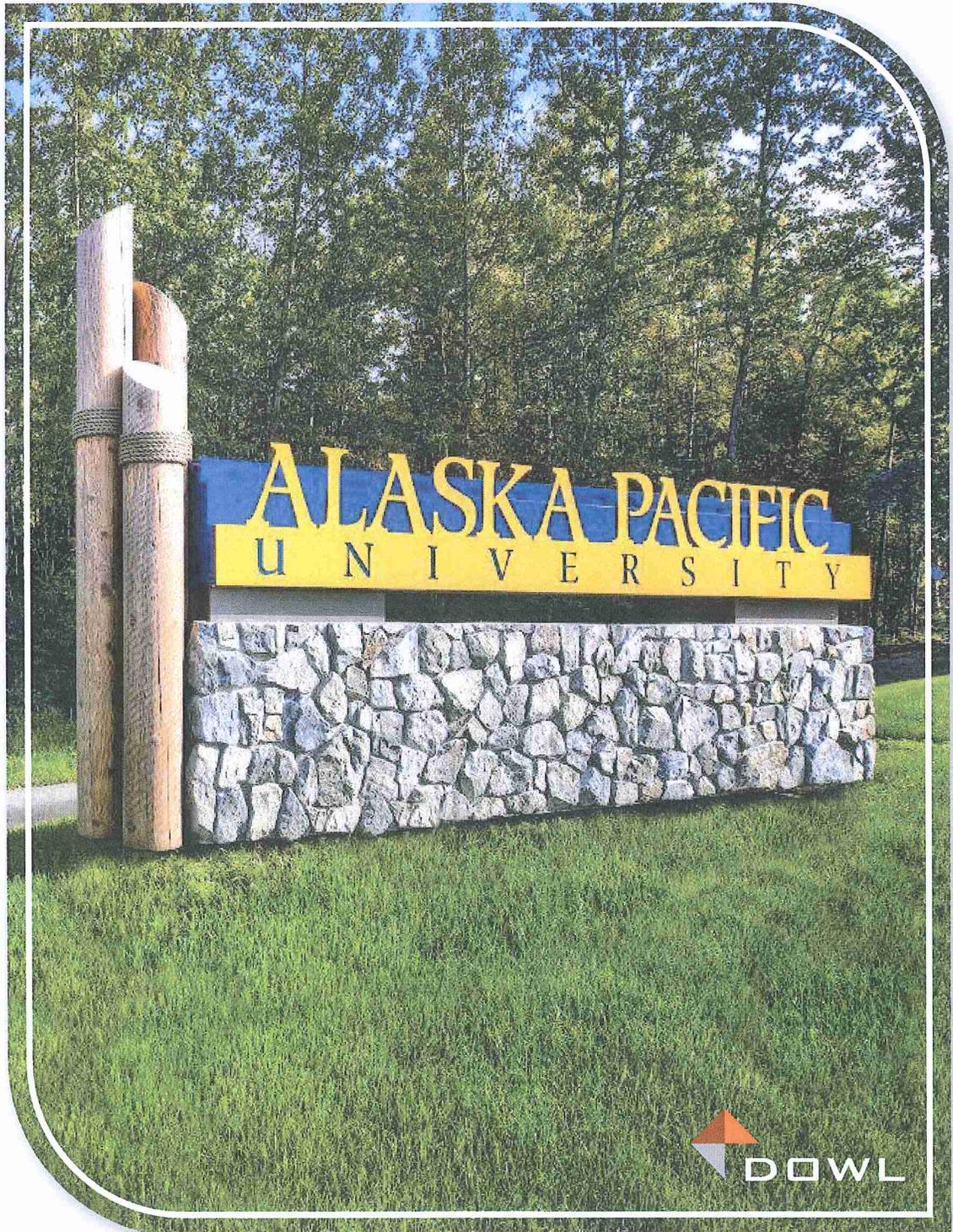
APU: Plan allows for market and community driven development over a 10-20 year period. It is meant to allow APU flexibility in determining uses on campus, but APU is committed to maintaining a certain character to development. Part of the reason they are pushing for this is to create a commercial village concept.

C: Are ski trails included in the plan?

APU: No, however, maintaining ski trails is important to APU. The goal is to upgrade the trails to make them more usable year-round, and integrate them into the development. Increasing the buffers gives APU flexibility to do this.

# ALASKA PACIFIC UNIVERSITY INSTITUTIONAL MASTER PLAN

Anchorage, Alaska    March 2016



**ALASKA PACIFIC UNIVERSITY**  
**INSTITUTIONAL MASTER PLAN**  
**ANCHORAGE, ALASKA**

**Prepared for:**

Alaska Pacific University  
4101 University Drive  
Anchorage, Alaska 99508

**Prepared by:**

DOWL  
4041 B Street  
Anchorage, Alaska 99503

W.O. 1132.62127.01

May 2016

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**LIST OF ACRONYMS**

|                             |  |
|-----------------------------|--|
| ADF&G.....                  | Alaska Department of Fish and Game                 |
| AMC .....                   | Anchorage Municipal Code                           |
| <i>Anchorage 2020</i> ..... | Anchorage Bowl Comprehensive Plan                  |
| APM.....                    | Alaska Public Media                                |
| APU.....                    | Alaska Pacific University                          |
| AWMP .....                  | Anchorage Wetlands Management Plan                 |
| AWWU .....                  | Anchorage Waste Water Utility                      |
| cfs .....                   | cubic feet per second                              |
| CIP .....                   | cast iron pipe                                     |
| CMP .....                   | corrugated metal pipe                              |
| District Plan .....         | 2015 Universities and Medical District Plan Update |
| FTE .....                   | Full Time Equivalent                               |
| LUPM .....                  | Land Use Plan Map                                  |
| MOA .....                   | Municipality of Anchorage                          |
| NSF .....                   | net square feet                                    |
| SF .....                    | square feet  |
| UAA .....                   | University of Alaska Anchorage                     |
| UMED.....                   | Universities and Medical                           |
| USGS .....                  | U.S. Geological Survey                             |

## **1.0 INTRODUCTION**

### **1.1 Overview**

Alaska Pacific University (APU) is a private, higher educational institution providing academic programming at both undergraduate and graduate levels. With a present enrollment of approximately 550 Full Time Equivalent (FTE) students, APU today draws much of its student body from Alaska, as well as from 26 states and 11 foreign countries.

APU offers on-campus students access to nine undergraduate majors, eight graduate programs, and a doctoral program, listed in Appendix A. The university also provides access to higher educational opportunities through distance learning, making select degree and certificate programs available within the Anchorage area and to rural Alaskans throughout the state.

### **1.2 Mission and Goals**

APU's academic growth and development are founded on the following Mission Statement and Goals.

#### **1.2.1 Mission Statement**

APU is a private, independent university that promotes the fullest development of its students through liberal arts and professional programs while emphasizing individual attention to students, the development of leadership abilities, and the nurturing of spiritual and moral values consistent with its Christian heritage while respecting the religious convictions of all (*adopted December 1995*).

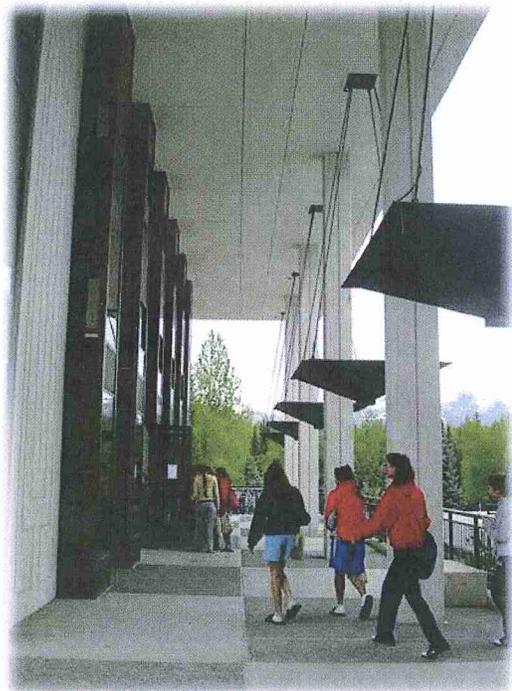
#### **1.2.2 Educational Goals**

- Emphasize personal growth through student-centered, experiential education using Alaska, the Arctic, and the Pacific Rim as laboratories for learning.
- Develop leadership for active service to society by encouraging openness to positive change, innovation, and individual initiative.

- Promote international and multicultural education while welcoming learners of all ages: from Alaska, with a special commitment to Alaska Natives; from other states of the United States; and from the international community.
- Maintain academic excellence by combining the breadth, integrative understanding, and critical thinking of the liberal arts with practical and focused knowledge for professional careers.

### 1.2.3 Administrative Goals

- Faculty and Staff: Attract and retain quality faculty and staff by creating a positive environment in which to work, teach, and grow through continuing professional development.
- Student Support Services: Provide students with the mentoring, counseling, tutoring, cultural, and spiritual support services they need to succeed.
- Recruitment and Enrollment: Develop effective recruitment programs that address the needs of potential students and their families with the objectives to increase enrollment and to attract diverse, multicultural students.
- Financial Management: Ensure financial stability through budget discipline, efficient use of facilities and resources, appropriate development of endowment lands, and fundraising efforts based on broad community support.
- Campus Facilities: Maintain first-rate facilities and an attractive, safe campus.
- Communication: Maintain open and continuous communication among all constituents.



### 1.3 Background

APU dedicated its campus in 1959, and began operations with students first enrolled in the fall of 1960. Over the past five decades, enrollment has increased to a current level exceeding 550 FTE students. During this period of time, APU in response to the growth of its educational programs, has constructed a variety of on-campus facilities, such as the Moseley Sports Center in 1986, the Carr Gottstein Academic Center in 1991, and more recently, Segelhorst Hall (on-campus housing) and the Glenn Olds Hall, occupied by the U.S. Geological Survey (USGS), in 2007, and expanded in 2011.

In 1996, the university published the results of a comprehensive *Institutional Self Study*, which defined the status of its facilities at that time and identified an array of space actions necessary to correct physical deficiencies and extend the useful life of its capital assets. The study also emphasized the need to develop and update a comprehensive plan for the campus, which would preserve and enhance the natural environment and beauty of the present site, while providing for endowment property development to support APU's educational needs and goals.

In 2002, a *Campus Master Plan Update* was prepared by DOWL Engineers and the Omni-Group, Inc. This master planning effort served as an update of various studies conducted over the previous five years, and focused on APU campus planning issues in a comprehensive manner. An update to this study was published in 2004.

The *2011 Alaska Pacific University Master Plan* (APU Master Plan) was prepared by DOWL Engineers and approved by the Municipality of Anchorage (MOA) Planning and Zoning Commission (Appendix B). The plan reflected development plans of the APU endowment lands and proposed standards that would allow future development on the campus. A campus land use map outlined spaces for development, development reserves, open space, and roads. The draft plan was revised over several years in anticipation of the Anchorage Municipal Code (AMC) Title 21 Rewrite, but was ultimately approved in 2012, prior to the Title 21 Rewrite. In 2012, the Assembly approved an amendment to the 2003 Universities and Medical (UMED) District Framework Master Plan adopting the APU land use designations from the APU Master Plan (Appendix C).

Since the 2011 APU Master Plan was approved, little development has occurred on the campus, but several planning elements within the UMED District have been updated which affect land use on the campus. These include the Title 21 Rewrite, the Northern Access Project, and the 2015 UMED District Plan Update (District Plan). The purpose of this institutional master plan document is to summarize and update the previous planning efforts in a format that is consistent with the standards of Title 21, and MOA Planning and Zoning Commission for an institutional master plan review.

## **2.0 EXISTING ENVIRONMENT**

The APU campus is located within the UMED District, just northeast of the geographic center of the Anchorage Bowl (Figure 1). It is located about 2.5 miles from downtown Anchorage and 5 miles from Ted Stevens Anchorage International Airport on a wooded, elevated, and scenic setting with dramatic views in all directions.

### **2.1 Physical Environment**

This section describes the existing physical conditions on the APU campus.

#### **2.1.1 Surficial Geology**

Surficial geology refers to unconsolidated materials that have collected on the surface of the land. These materials or deposits are classified according to their grain size and sorting, or the range of grain sizes within a particular sample. The majority of the unconsolidated materials in the Anchorage Bowl were deposited as a result of the last glaciations that occurred between 10,000 and 25,000 years ago.

Surficial deposits are grossly organized into three main categories: coarse-grained deposits, fine-grained deposits, and mixed coarse-grained and fine-grained deposits (diamicton). Table 1 describes the deposit types found on the APU campus. Engineering studies completed for the MOA have shown that the surface geology for the APU campus consists primarily of marine, glacial, and/or lake deposits in lowlands and elongate hills (Figure 2). These surface soils consist

of coarse and fine-grained materials. The areas surrounding the campus consist of alluvium in abandoned channels and in stream terraces and lake and pond sediments.

2.1.2 Soils

Soils are an important element in any site development process. Because soils have both structural and hydrological characteristics, understanding soil types will help determine appropriate land uses for a given area. The structural characteristics of soils determine what types of built structures can be safely constructed on a site, while hydrological characteristics can be used to plan for storm water management.

**Table 1: Surficial Geology Deposits on the Alaska Pacific University Campus**

| TYPE OF DEPOSIT                                | DEPOSIT NAME AND SYMBOL   | DESCRIPTION  |
|--|---|--|
| Mixed Coarse-Grained and Fine-Grained Deposits | Gm – Glacial and/or Marine Deposits   | Typically in elongate hills. These features consist chiefly of diamicton, but they include some beds of fine sand and silt; thin beds of gravel and sand occur locally. May grade into deposits mapped as unit <b>mg</b> .   |
| Mixed Coarse-Grained and Fine-Grained Deposits | Mg – Marine, Glacial, and/or Lacustrine Deposits.                               | Typically, in broad low areas adjacent to the hills mapped as unit <b>gm</b> , and in isolated hills farther west; deposits consist of a variety of interbedded materials that generally have much fine-grained sand, and some clay. Silty materials are more common in the eastern part of the map unit and sandy materials in the western part. The isolated hills are the intermediate member of a series, the end members of which are the sharply defined hills mapped as unit <b>gm</b> (diamicton) to the east, and the broad low hills mapped as unit <b>sh</b> (sand) to the west. It is not always possible to determine precisely into which of these three map units the materials in some of the intermediate hills should be placed. |
| Coarse-Grained Deposits                        | Al – Alluvium in Abandoned Stream Channels and In Terraces Along Modern Streams | Gravel and sand, generally well bedded and well sorted. Deposits in large channels and in other broad areas are chiefly gravel and are thicker than deposits in small narrow channels and terraces, which contain chiefly sand and gravel.   |

The soils map (Figure 3) illustrates the location of the soil types as mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service in 2001. Table 2 indicates the limitations that these soil types pose for the various types of development described. With regard to the information appearing in the table, shallow excavations refer to those occurring during the installation of utilities, basements, and cemeteries. Dwellings are single-family houses of three stories or less. Small commercial buildings are those not exceeding three stories in height and do not have basements. Local roads and streets are constructed of all-weather material and carry automobile and light truck traffic all year. Soil limitations are described as not limited, somewhat limited, and very limited, followed by the reasons for these limitations.

Soil borings indicate that the subsurface soils are primarily sands and silts with a thin layer of peat material at the surface. Any development that is planned for the campus should be preceded by a soils investigation to determine the site-specific conditions.

### 2.1.3 Topography

The APU campus is situated on an elevated area of Anchorage with the topography falling away from the campus in all directions (Figure 4). There are two hills located on the campus. The highest hill is located west of the Atwood Building and rises about 100 feet higher than the average elevation in the surrounding UMED campus area and about 50 feet above most of the campus. The Mlakar President's Home, which is the home of the university President, was constructed on the other hill east of the Moseley Sports Center. This hill is about 50 feet higher than the sports fields to the east and about 25 feet above the campus. The core area of the campus is relatively flat with several areas that are suitable for development.

**Table 2: Soil Types on the Alaska Pacific University Campus**

| SOIL NAME AND MAP SYMBOL   | DWELLINGS WITH BASEMENTS                                       | DWELLINGS WITHOUT BASEMENTS   | SMALL COMMERCIAL BUILDINGS  | SHALLOW EXCAVATIONS  | LOCAL ROADS AND STREETS  |
|--|--|---|---|--|--|
| Cryorthents and Urban land, 0 to 5 percent slopes: 407           | Somewhat limited: slope, large stones                          | Somewhat limited: slope, large stones                                 | Very limited: slope, large stones                                     | Very limited: cutbanks cave, depth to dense layer, slope, content of large stones        | Somewhat limited: frost action, slope, content of large stones           |
| Deception-Estelle-Kichatna complex, 12 to 20 percent slopes: 411 | Very limited: slope  | Very limited: slope   | Very limited: slope   | Very limited: slope, depth to dense layer, cutbanks cave                                 | Very limited: slope, frost action  |
| Deception-Estelle-Kichatna complex, 20 to 45 percent slopes: 412 | Very limited: slope  | Very limited: slope   | Very limited: slope   | Very limited: slope, depth to dense layer, cutbanks cave                                 | Very limited: slope, frost action  |
| Deception-Estelle-Kichatna complex, undulating and hilly: 414    | Somewhat limited: slope  | Somewhat limited: slope   | Somewhat limited: slope   | Somewhat to very limited: depth to dense layer, cutbanks cave, slope                     | Somewhat very limited: frost action, slope                               |
| Icknuun peat, 0 to 3 percent slopes: 424                         | Very limited: ponding, subsidence, high water organic material | Very limited: ponding, subsidence, high water table, organic material | Very limited: ponding, subsidence, high water table, organic material | Very limited: ponding, depth to saturated zone, content of organic matter, cutbanks cave | Very limited: ponding, depth to saturated zone, subsidence, frost action |
| Kashwitna-Kichatna complex, 0 to 3 percent slopes: 428           | Not limited  | Not limited   | Not limited   | Very limited: cutbanks cave  | Very limited: frost action   |
| Kaswitna-Kichatna complex, 12 to 20 percent slopes: 429          | Very limited: slope  | Very limited: slope   | Very limited: slope   | Very limited: cutbanks cave, slope   | Very limited: frost action, slope  |
| Kashwitna-Kichatna complex, 30 to 85 percent slopes: 430         | Very limited: slope  | Very limited: slope   | Very limited: slope   | Very limited: cutbanks cave, slope   | Very limited: frost action, slope  |
| Kashwitna-Kichatna complex, undulating and steep: 433            | Very limited: slope  | Very limited: slope   | Very limited: slope   | Very limited: cutbanks cave, slope   | Very limited: frost action, slope  |
| Water, fresh: 463  | Not rated  | Not rated   | Not rated   | Not rated  | Not rated  |

#### 2.1.4 Seismic/Mass Wasting Conditions

Mass wasting refers to the movement of large quantities of earth under gravitational force. Examples of mass wasting include landslides, avalanches, coastal flooding and erosion, and tsunami hazards. The APU campus is not known to have any mass wasting potential.

According to the *Anchorage Coastal Resources Atlas*, southern Alaska and the Aleutian Chain together constitute one of the world's most active seismic zones. The susceptibility of seismically-induced ground failure of the APU campus is moderately low to moderate. With regard to development decisions, extra precautions may be appropriate for those areas identified as moderately susceptible to ground failure.

#### 2.1.5 Vegetation

The APU campus was developed in an area that was densely covered with mixed deciduous forest. Portions of the campus were cleared for the existing development, but the areas between the buildings, road, and parking areas remain covered with dense vegetation. These forested areas contain white spruce and birch trees, some of which are 40 to 100 years old.

#### 2.1.6 Wetlands

The *Anchorage Wetlands Management Plan* (AWMP) contains an inventory of wetlands that occur within the boundaries of the MOA. Using a classification system, this plan categorizes each of the inventoried wetlands with regard to their habitat value and development potential. The plan is intended to serve as a guide for development land management decisions.

Wetlands are designated as "A," "B," and "C" in the AWMP with "A" wetlands being highly valued natural system resources best left in an undeveloped, undisturbed state. "B" wetlands are designated as conservation wetlands that have both highly and moderately valuable natural system resources. This type of wetland can support limited development, particularly in the less critical resource areas. "C" wetlands are developable. They have the lowest natural resource value of the wetland categories in terms of hydrology, habitat, and social functions.

Since the APU campus has essentially been constructed on a hill, there are no designated wetlands located in the core area of the University. Areas at the bottom of the slopes to the north and west of campus have been designated as “A” and “B” wetlands (Figure 5).

The AWMP recommends that the “A” wetlands to the north of the campus core be preserved. There are isolated areas that can be filled for recreation or road expansions. The AWMP requires that a 25-foot transitional buffer be maintained between any fill areas and adjacent “A” wetlands. In addition, a 65-foot water body setback is required around Mosquito Lake.

The AWMP designates “B” wetlands on the north side of Providence Drive, along Elmore Road. The AWMP notes that this site provides waterfowl habitat that shall be maintained. This site filters runoff from easterly areas to the Mosquito Lake complex.

#### 2.1.7 Water Features

Significant water features near the APU campus include Chester Creek, University Lake, Mosquito Lake, and Goose Lake (Figure 5).

Chester Creek flows approximately 10 miles from its headwaters in the Chugach Mountains through the heart of the Anchorage Bowl and empties into Knik Arm by Westchester Lagoon. The Chester Creek greenbelt offers a unique experience for enjoying nature in the heart of Anchorage, providing important habitat for both fish and wildlife. Chester Creek is identified as an anadromous stream, with Coho and Pink Salmon, Rainbow Trout, and Dolly Varden all occupying the creek. The Chester Creek Trail begins at Goose Lake Park, follows the creek through the greenbelt, and ends at Westchester Lagoon, where access to other multi-use trails is available. a Chester Creek Trail Extension project has been completed. A 10-foot wide trail with two-foot shoulders runs along the eastern boundary of the APU campus.

Mosquito Lake is located on the University of Alaska (UAA) campus, east of Alumni Drive, and north of Providence Drive. The lands surrounding Mosquito Lake are Class “A” wetlands, which protects the lake from vehicular access and development. A pedestrian trail runs along the southern edge of Mosquito Lake, connecting to other recreational trails within the UAA and APU trail networks.

University Lake is located south of the APU campus and east of Elmore Road, on MOA land. The land for the park was previously part of APU's campus, but was acquired from APU in a land trade with the Municipality. The south fork of Chester Creek flows through the lake, and University Lake Park surrounds all but the northeast corner of the lake. Park amenities include an off-leash dog area. University Lake is often used for recreational activities and academic courses by APU and UAA students and faculty, as well as other residents of the UMED District and the general public, including summer Children's Discovery Camp programs.

University Lake, originally identified on municipal maps as Behm Lake, is the result of natural resource extraction that started around 1960. As can be seen in the 1963 aerial photograph, extraction was occurring in the southwest corner of the APU campus as well as where Tudor Centre is now located (Figure 6). By 1970, excavation had created a ponding of water within the excavated area, which resembles University Lake's current shape. The South Fork of Chester Creek was routed south of the lake to make gravel extraction operations easier. By 1984, excavation within the lake boundary was completed, and some backfilling along the north shore had taken place, finalizing the lake's shape (Figure 7). Additionally, an "S" shaped channel was created to link to the channel west of Elmore Road. Tudor Centre was being developed and ponded excavation areas can be seen in the northwest corner of Tudor Centre where dredging had occurred. The 1994 photograph shows the lake and new channels were in place and well-vegetated. To the south, final grading had occurred at Tudor Centre, some ponds have been filled in and the Alaska Native Hospital was under construction.

Goose Lake is located northwest of the APU campus, south of Northern Lights Boulevard at UAA Drive. Goose Lake is one of Anchorage's most popular lakes for summer swimming and non-motorized boating. Amenities available at Goose Lake Park include ball fields, picnic, and swimming areas, a beach, bike rentals, trail access, and concessions. From mid-May to mid-September, nesting Pacific loons can be viewed on Goose Lake. Other species that are common around the lake include mew and herring gulls, Canada geese, mallards, American widgeons, and various songbirds.

### 2.1.8 Wildlife

#### **Wildlife Resources/Habitat**

Overall, the Anchorage area supports 52 species of mammals, and at least 230 bird species, approximately half of the bird species recorded in the state.

#### **Birds**

*Loons.* Anchorage is the largest city in North America with nesting loons, including Pacific loons, and common loons. Loons have actively used about 14 lakes since 1994, including Goose Lake, near UAA and APU. Loons can be seen on Goose Lake from mid-May to mid-September.

*Canada Geese.* Geese have been nesting in Anchorage since the early 1960s. Most geese in Anchorage are lesser Canada geese, and prefer habitat that features available grass adjacent to open water. The development of the city has attracted an increased population of geese over the years and summer goose population levels have increased at about six percent per year. Geese are a threat to local aircraft and active harassment programs are in place at all local airfields. Geese have also become a local nuisance near lakes, parks, ball fields, and golf courses.

*Waterfowl.* Waterfowl in Anchorage are attracted to the area's lakes, streams, and wetlands. Like geese, the mallard and some waterfowl species have seen population increases in recent years, with mallards averaging about 3,000 birds in the winter.

Other waterfowl that migrate through Anchorage include swans, northern pintail, goldeneyes, mergansers, green-winged teal, bufflehead, scaups, and several other duck species.

*Migratory Songbirds.* Anchorage supports year-round resident songbirds as well as many migratory species that arrive in the spring. Over 90 species of land birds have been recorded in the Anchorage bowl. Of these, approximately 58 species breed in Anchorage including kingfishers, woodpeckers, flycatchers, jays and ravens, swallows, chickadees, thrushes, warblers, sparrows, and finches. Approximately 40 to 50 species are regularly seen in winter.

## **Moose**

Moose are year-round residents in the Anchorage Bowl, with a summer population of about 200-300 moose and as many as 700-1,000 moose in the winter. In the winter, moose in Anchorage are typically concentrated in greenbelts and green spaces, but are also common in residential areas, particularly on the hillside. Moose movements between seasons typically occur in the spring when many moose migrate out of the Anchorage Bowl and into the surrounding Chugach Mountains, and during fall when many moose move back to the Anchorage Bowl during the winter.

Moose in Alaska browse heavily on willow and birch shrubs and on aspen and poplar saplings. They also feed on aquatic vegetation during the summer and on ornamental foliage in residential areas. Generally, males use areas with abundant forage, whereas females with calves tend to avoid deep snow in the winter and use areas with fewer predators in the summer.

On the APU and UAA campuses, moose-human conflicts often occur within the ski trail system, as well as near building entrances with ornamental landscaping. The Alaska Department of Fish and Game (ADF&G) has stated that moose are increasingly foraging in open garbage containers located throughout both campuses and the trail system, as well (D. Battle, personal communication, 2016). This is a concern to ADF&G because unlike bears, moose will defend a garbage site, potentially causing harm to humans. In addition, moose have a much more sensitive digestive tract from bears, and consumption of items found in a garbage (plastic bags, etc.), could be fatal to a moose.

## **Black Bears**

Approximately 250 black bears live in the Anchorage area, including Chugach State Park. ADF&G estimates that approximately 40 to 50 of those black bears live within the Anchorage Bowl. Black bears in Anchorage prefer forested habitat, including stream corridors, indicating that bears may be encountered along the Chester Creek greenbelt, near the APU campus.

ADF&G states bear-human conflicts occur on the APU campus every year (D. Battle, personal communication, 2016). Black bears have been observed foraging through open garbage

containers throughout the APU trails system, on the Chester Creek trail system and greenbelt, and on Northern Lights Boulevard.

### **Beavers**

The beaver population in the Anchorage Bowl appears to be stable at approximately 150 animals. Beavers live along area streams, which are largely within parklands and greenbelts, as well as the military bases. There are beavers present in University Lake Park. Protective measures were taken to prevent all trees adjacent to the lake from being fallen. Metal mesh was wrapped around the base of trees to prevent beaver from falling some of the trees. Additionally, at least one beaver, residing in a lodge on the south shore of the lake has had numerous encounters with off-leash dogs in the park and injured several dogs.

### **Fish**

Chester Creek is identified in the ADF&G *Atlas to the Catalog of Waters Important to the Spawning, Rearing or Migration of Anadromous Fishes* as an anadromous creek. Rainbow Trout, Dolly Varden, and Pink Salmon are present in Chester Creek, and Coho Salmon use the creek for rearing. In addition, the middle fork of Chester Creek is used by Coho Salmon for spawning.

#### 2.1.9 Views

As stated previously, the undeveloped areas in and around the campus are densely covered with trees. These trees obstruct the view of the surrounding mountains except for a few areas of campus. The hill on which the president's home is constructed has a tremendous view of the mountains to the east and south.



## 2.2 Land Use

### 2.2.1 Surrounding Land Use/Ownership

To the east of the APU campus is the College Gate residential subdivision. To the north are undeveloped wetlands, undeveloped property owned by the University of Alaska, and an electrical utility substation. To the west of the campus are the UAA, Providence Alaska Medical Center, the Alaska Psychiatric Institute, Mosquito Lake, and the MOA's Goose Lake Park. To the south is the MOA's University Lake Park, the Alaska Native Medical Center, and medical and office facilities. UAA housing is located to the southwest of the APU campus, directly adjacent to Elmore Road.

### 2.2.2 On-Campus Land Uses

The APU campus land holdings have grown and contracted in size since it was dedicated in 1959. Originally, a 245.5-acre site on the edge of the city, the APU campus grew to a maximum size of 505 acres in 1964. As the city grew around the campus, some acreage was sold to adjacent institutions, in particular UAA, accommodating some of their needed expansion and providing a revenue source for APU operations. Today, APU encompasses about 175 acres, of which approximately 40 acres are developed.

Most of APU's undeveloped land consists of wooded areas, recreation trails, wetlands, steeply sloped areas, and an outdoor sports field. In addition to recreation and open space uses, the undeveloped portions of the APU campus are also used for a variety of other community uses. During the summer months, APU hosts a farmers market, which promotes locally grown food from APU's Spring Creek Farm. They also host several youth summer camps that take advantage of APU's natural setting to encourage outdoor activities.

Developed land consists of academic, administrative, student services, and residential facilities located in Grant Hall, the Carr-Gottstein Academic Center, and the Atwood Center, all centrally located on the inside curve of University Drive. On the outside of University Drive curve are parking lots, three leased buildings occupied by USGS, the Moseley Sports Center, the Mlakar President's Home, and the Alaska Spine Institute. A new hotel is located on the south side of

University Lake Drive, overlooking University Lake. The University Village housing area, including the new Segelhorst Hall, is located at the end of University Drive. In addition, Alaska Public Media (APM) has radio (KSKA) and television (KAKM) studios located on the campus, at the west end of University Drive (Figure 1).

### 2.2.3 Zoning

The APU campus is adjacent to lands zoned PLI District to the north, west, and south. (Figure 8). To the east is the College Gate residential subdivision, zoned Single-Family Residential (R-1) District and Multi-Family Residential (R-3) District.

The APU campus is zoned as Public Lands and Institutions (PLI) District under the MOA's land use regulations (Title 21). The PLI District is intended to include major public and quasi-public civic, administrative, and institutional uses and activities. Universities are among the principal permitted uses for the PLI District. Office, business, and professional uses are also permitted in the PLI District, as are uses and structures, which are necessary or desirable adjuncts to permitted principal uses. Historically, the APU endowment lands have been oriented towards uses that are desirable adjuncts to APU's educational programs and mission, in addition to generating funds for continued operation of the university.

As identified in the new Title 21, AMC 21.03.110, the intent of the Institutional Master Plan is to permit flexibility for a large institution to have greater control over its own land use decisions, while providing a level of understanding to the surrounding community about the potential growth of the institution and the resultant impacts. The Institutional Master Plan allows an institution to create development and design standards that differ from the requirements of Title 21 and to include uses that are desirable in the UMED District, but may not be directly permitted in the PLI District. Additionally, Per AMC 21.05.040E.2.b, "*colleges or universities with an approved institutional master plan are exempt from the review and approval procedures required by table 21.05-1 for projects developed under the auspices of the approved institutional master plan.*" The Institutional Master Plan will allow APU to develop their campus in a manner that is consistent with the university's needs and goals while balancing with community's desires.

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## 2.2.4 Land Use Plans

### 2.2.4.1 *Anchorage Bowl Comprehensive Plan*

*The Anchorage Bowl Comprehensive Plan (Anchorage 2020) was adopted by the Anchorage Assembly in 2001. The purpose of the comprehensive plan is to "...set forth the goals, objectives and policies governing the future land use development of the Municipality that guide the Assembly in taking legislative action to implement the plan."* Anchorage 2020 focuses on the Anchorage Bowl, and is a general blueprint to guide development in the Bowl through 2020. The plan creates a framework for decisions about land use and transportation, as well as public facilities, economic development, housing, and other public issues. Refinement of the plan is accomplished through various implementation actions and policy tools.

The Anchorage 2020 Land Use Policy Map designates the UMED District as a Major Employment Center. Generally, major employment centers will be the most intensely developed areas of the Municipality, serving as focal points for the highest concentrations of office employment with supporting retail and commercial uses. Specifically, Anchorage 2020 includes the following intent for the Major Employment Center designation: *"...to provide the highest concentrations of office employment (greater than 50 employees/acre), and the attendant infrastructure to support a mix of high-intensity land uses in order to support a more balanced transportation system. Medium- to high-density residential developments are intended to surround these core employment centers. Higher density mixed-use development that includes residential uses would also be encouraged within the employment center core. There is an emphasis on connectivity among the land uses to include and facilitate pedestrian and transit facilities along with traditional auto access."*

Anchorage 2020 seeks to increase employment densities to a range of 50 to 75 employees per acre in major employment centers in order to encourage the concentration of medium- to high-density office development in well-defined, compact employment centers, and to reduce travel in single-occupant vehicles. The plan states that the UMED District is Anchorage's leading workplace for education, healthcare and social services, and miscellaneous support services. The district has the potential to accommodate significant density increases.

The plan recommends walking as the transportation mode of choice for short trips within major employment centers. To encourage walking, the plan suggests making the development of a pedestrian network a priority. Implementation of the major employment center designation is supported by Land Use Policy No. 23, and additional direction is provided for in each area's district plan. Policy No. 23 states, "*Major Employment Centers, shown on the Land Use Policy Map, exist at the Downtown, Midtown, and University/Medical areas. Characteristics of these centers are as follows:*

- *Concentrations of medium- to high-density office development with employment densities of more than 50 employees per acre;*
- *Promotion of compact, mixed commercial/office development where businesses are close enough to walk between;*
- *New businesses oriented to the street with parking located in parking structures or to the side or behind the buildings;*
- *Creation or enhancement of public focal points such as plazas or parks, including public art;*
- *Residential development as an ancillary use; and*
- *A pedestrian-oriented environment including expanded sidewalks, crosswalks, street furniture, bus shelters, and landscaping."*

#### *2.2.4.2 Land Use Plan Map*

One implementation tool of Anchorage 2020 is through adoption of a Land Use Plan Map (LUPM). A 2016 draft Anchorage Bowl LUPM has been released to the public and will be scheduled for a public hearing at the Planning and Zoning Commission in the near future.

In 2006, a draft Anchorage Bowl LUPM, approved in concept by the Planning and Zoning Commission, indicated that APU's lands were designated as a Community Facility, Major Institutional use. According to the draft LUPM Narrative, the intent of the Major Institutional designation was to provide for, "*...major public or quasi-public institutional centers that serve a wide area of the community, function as major activity and employment centers, and are not usually integrated into residential areas.*" The narrative notes that supportive uses, such as

food, lodging, group housing, or offices are permitted. The plan also recommends that Major Institutional uses should have access to transportation systems without the need for users to travel through incompatible uses. This designation is implemented by the PLI District and associated required Conditional Use reviews.

In addition, the 2006 draft Anchorage Bowl LUPM, designated the UMED District as an Intermodal/Transit Focus Area. The draft LUPM Narrative stated that the Intermodal/Transit Focus Area designation identifies “...*the approximate location of existing and potential commuter railway/intermodal stations, or represent wider hub areas that enjoy a higher level of transit service, such as more frequent bus arrivals and multiple opportunities to transfer between bus routes.*” The narrative specifically notes that areas designated Major Institutional may include an Intermodal/Transit Focus Area designation to indicate a high level of transit service for the general area.

Although the 2015 draft Anchorage Bowl LUPM provides guidance on possible implementation of Anchorage 2020 policies, the Assembly has not formally adopted a final map. Therefore, the MOA’s 1982 Anchorage Bowl Comprehensive Development Plan LUPM continues to provide guidance, as well. The District Plan, discussed below, also provides guidance for development in the UMED District. Many of its implementation measures have not been completed, however, resulting in conflicts between the plan and APU’s growth and development needs as discussed later in this plan.

#### 2.2.4.3 2015 UMED District Plan Update

The 2015 UMED District Plan Update was adopted in March 8, 2016, replacing the 2003 UMED District Framework Master Plan. The primary purpose of the District Plan Update is, “...*to assess current needs and to identify future actions and land use changes to address those needs.*” The UMED District includes two universities (including APU), two hospitals, a career training center, two schools, several other institutions, and two large municipal parks. The District Plan encourages institutions to create Institutional Master Plans to allow for input from the community council, surrounding neighborhoods, and the municipality.

The District Plan includes eight Vision Elements: Supporting Organizational Missions, Quality of Life, Quality of the Built Environment, Transportation & Mobility, Community & Partnerships, Natural Resources, Economic Sustainability, and Growth & Change. These elements are broad topics that form the structure of the District Plan. The Vision Elements include Goals and Implementation strategies, which create specific objectives and suggest methods to achieve the goals.

The land use plan map within the District Plan updates the Anchorage Bowl LUPM In general, the District Plan encourages master plan development, mixed-use commercial, retail, and housing development and helps maintain stable neighborhoods.

### Land Use

A fundamental recommendation of the District Plan is that educational and medical institutions within the District be able to grow and compete effectively. The District Plan identifies four main classifications of land use:

Residential – The Residential classification identifies areas already substantially developed for residential purposes and are expected to remain residential for the duration of the District Plan. In addition to residential characteristics, other uses such as schools, churches, parks, child care facilities, and other public or institutional uses may be allowed if determined to be compatible with the needs of the immediate neighborhood.

Commercial – The Commercial classification describes five commercial and retail development scenarios that encourage infill, mixed-use, and higher density residential development. A new neighborhood commercial center is envisioned for the UMED District.

Community Facility – The Community Facility classification includes small, medium, and large-scale development found in the UMED District and supports implementation of the many organizational master planning efforts including the Alaska Native Tribal Health Consortium, APU, Anchorage School District, Mental Health Trust Land Office, and others. The Major Institutional designation is included within this classification. The APU campus, including the academic core and endowment lands, is designated Major Institutional land use in the Draft

UMED District Land Use Plan Map (Appendix D). The APU land designations were previously adopted as an amendment to the 2003 UMED District Framework Master Plan in 2012, as shown on Figure 9. The Major Institutional land use category is implemented by the PLI District.

Park & Natural Resource – The Park & Natural Resource classification includes public lands that are designated parks, watersheds, or natural areas within the UMED District. They are intended to allow for active and passive recreation including trails and park amenities.

### **UMED Village**

The UMED Village is envisioned within the District Plan as a new, neighborhood-level, commercial center, meant to bolster the competitiveness of the universities within the UMED District. Studies included in the District Plan conclude that the UMED Village would be a catalyst for investment and create a vibrant core used by students, staff, residents, and visitors to the UMED District. It is recognized within the District Plan that the APU campus endowment lands may provide a location for the UMED Village, although the precise location is subject to market trends and the individual institutional property owners to self-nominate a site. The uses included in the APU Institutional Master Plan may allow for development on the campus that is in-line with the UMED Village concept.

### **Conservation Easements and Trails**

The District Plan recognizes that the natural environment and existing trails within the UMED District serve an important social function and create opportunities for recreation that make the area a desirable place to live. Many of the trails and natural spaces are located on private property, including trails and spaces on the APU campus. The District Plan supports a conservation easement program with funding from public, private, and land conservation entities such as the Great Land Trust. One of the goals of the District Plan states, “*Identify and fund potential conservation easement properties between consenting parties.*” The program would be established to give private land owners the opportunity to voluntarily identify portions of their property for conservation, watershed protection, and wildlife habitat preservation purposes throughout the Chester Creek Watershed. This mechanism for preserving trails and natural

spaces was also proposed in the 2003 UMED Plan; however, a conservation easement program was not established or funded.

**Design Standards**

The design guidelines within the District Plan are included to ensure the vision and values for new development in the community. They provide general recommendations for a range of development topics such as Building Orientation, Building Massing, Entrance & Orientation, Parking Facilities, Building Articulation, Landscape Buffers, Organizational & Private Development, and more.

**2.3 Existing Infrastructure**

Figure 1 shows existing building locations and roads.

**2.3.1 Structures**

Figure 1 illustrates the location of various structures on the campus and Table 3 provides additional information for each structure, including size and height.

**Table 3: Existing Structures on the Alaska Pacific University Campus**

| <b>BUILDING</b>         | <b>GROSS FLOOR AREA</b> | <b>HEIGHT STORIES</b> |
|-------------------------|-------------------------|-----------------------|
| Alaska Spine Institute  | 58,726 sf               | 3                     |
| APM                     | 18,600 <sup>1</sup> sf  | 2                     |
| Grant Hall              | 53,581 sf               | 3                     |
| Carr-Gottstein          | 26470 sf                | 2                     |
| Atwood Center           | 79,993 sf               | 3 + basement          |
| Moseley Sports Center   | 17,887 sf               | 1                     |
| Grace Hall              | 35,270 sf               | 3 + penthouse         |
| Gould Hall              | 25,123 sf               | 2 + basement          |
| Glenn-Olds Hall         | 27,170 sf               | 3                     |
| Segelhorst Hall         | 8,600 sf                | 2                     |
| University Village      | 27,405 sf               | 2                     |
| Mlakar President's Home | 4,956 sf                | 2                     |
| University Lake Suites  | 88,341 sf               | 3                     |

<sup>1</sup> Estimated

### 2.3.2 Existing Access and Roads

APU is accessed by Providence Drive from the west and Elmore Road from the south. Both roads are classified as minor arterials in the MOA Official Streets and Highways Plan. Primary access is by private automobiles, the People Mover bus system, walking, and bicycle.

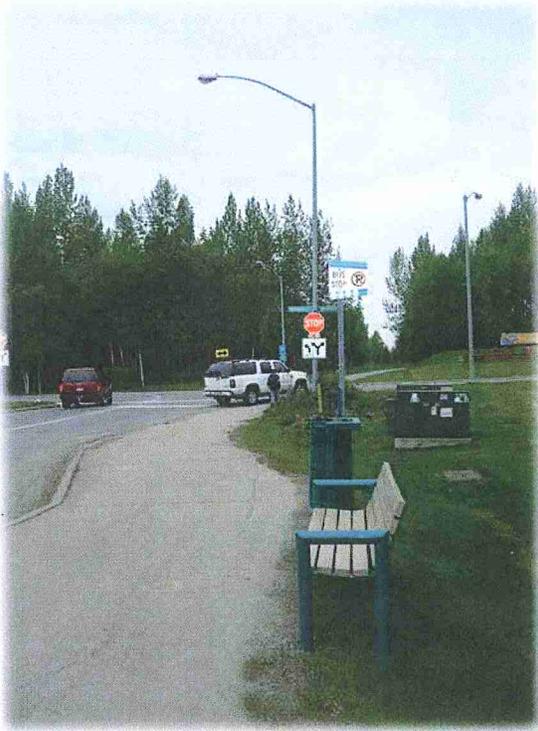
University Drive is a 24-foot wide spine local road providing the sole access to the academic and residential facilities. It extends in an arc from the intersection of Providence Drive and Elmore Road through the center of the campus. Just past the Atwood Center, it turns sharply to the right and extends through the University Village in a straight, northerly direction to a dead end. University Drive has concrete curbs from the Elmore Road/Providence Drive intersection to Grace Hall and along the north-south section serving University Village. The section in between, which has limited development on either side of the road, has no curbs, and resembles a “country lane.” A driveway serves the APM facility near the entrance to the campus. University Lake Drive is a dead-end, paved, local road below the core of the campus and north of University Lake, which provides access to the APU endowment lands.

The *Anchorage Bowl 2025 Long Range Transportation Plan* includes the construction of a north access to the UMED District within the plan’s short-term project recommendations. The north access may be a new .7-mile connection from Providence Drive to Northern Lights Boulevard. The purpose of the connection is to improve circulation, capacity, and safety. This recommendation is supported by the APU Board of Trustees in Resolution 12-02-08, dated December 5, 2002. The resolution states that the Bragaw Street Extension to Northern Lights Boulevard is supported and the Board of Trustees opposes alternatives that extend University Lake Drive to Northern Lights Boulevard through the APU campus. Recognition of need and support for the Northern Access route is further exemplified by APU’s participation in a “Memorandum of Agreement” signed along with other major UMED District institutions in support of the proposed connection.

APU also facilitated obtaining federal funding to support the first phase extension of University Lake Drive to the east to provide for better access to the endowment lands. This project is expected to be constructed in 2017.

### 2.3.3 Transit

Currently, the UMED District is one of the best-served public transit areas in the Municipality. A University Pass system has been implemented to provide UAA, APU, and Charter College students, staff, and faculty incentives to use the People Mover system and to reduce traffic and parking requirements. Six People Mover routes currently serve the UMED District. Route 36 provides service to APU students on University Drive, with six bus stops on campus (Figure 10). Service extends through campus to the Atwood Center.



The *University Medical District and People Mover Transit Analysis*, published in 2004, recommends various system improvements to the existing transit network and bus stops. The recommended improvements for the APU campus included six bus stop locations and enhancements to existing bus stops and the existing crossing area at Elmore Road and University Drive. The six recommended bus stops were installed, and People Mover Route 36 serves the campus.

The analysis also recommends enhancements to the pedestrian crossing at University Drive and Elmore Road. The recommendation in the analysis is a raised pedestrian crossing, with a checkered pattern of colored concrete. The intent of this design is to alert drivers to crossing pedestrians and turning traffic, while increasing safety. The bold patterns are designed to be visible, even when partially obscured by ice, grit, and snow.

#### 2.3.4 Parking

The previous version of Title 21 (aka old code) allowed large campus developments with multiple buildings to provide parking within the identified campus boundaries to meet the overall needs of the campus under a master plan. APU's campus is comprised of multiple parcels that are all owned and managed by the University. APU's parking plan continues the approved approach that all parcels on APU's campus be treated as one underlying parcel from a land use and zoning perspective. The nature of uses, separation of buildings, and separation of parking lots that are provided on APU's campus creates efficient parking utilization over the entire campus. The old code parking requirement for the APU campus is currently estimated at 1,580 spaces, including the new medical office building currently being permitted to construct in 2016.

Parking at APU consists of ten primary lots spread throughout the campus, totaling approximately 1,039 spaces (Figure 10). Table 4 breaks down the current parking inventory available on the APU campus. The first lot is located at the APM radio and television station and is not used by APU students or faculty. The second lot is located on the west side of Grant Hall and is reserved for permit holders and is used by administrative staff. The third lot is to the east of the Carr-Gottstein Academic Center and is part of a larger, contiguous lot shared with the Atwood Center. The fourth lot is southeast of the Atwood Center and is primarily used by residents of the dormitories in the Atwood Center, students from off-campus, and faculty. The fifth lot serves the Moseley Sports Complex and is used both by students and non-student groups using Moseley facilities. The sixth lot is located at Segelhorst Hall and is used by residents of the hall. The seventh lot is located to the south of University Drive and extends to the USGS facilities located in Grace, Gould, and Glenn Olds Halls. This lot is used primarily by Grant Hall administrative staff, students, and faculty, as well as USGS staff operating out of Grace, Gould, and Glenn Olds Halls. In addition, 48 of the spaces on the west end of the lot are reserved for the Alaska Spine Institute. Additionally, the small lot located behind Grant Hall is primarily used for drop-off/pick-up, as well as accessible parking. The eighth lot is located between University Drive and University Lake Drive serving staff, students, and the public at the Alaska Spine Institute. The ninth lot is located at University Lake Suites and is for hotel employees and guests only. The University Village residential area also includes parking for local residents.

Attached garages as well as driveways at the residences allow approximately 25 vehicles to be parked at University Village. A tenth lot is proposed to be constructed in 2016, in order to support the new medical office building that will be immediately adjacent to the University Lake Suites hotel.

**Table 4: Alaska Pacific University Parking Inventory**

| <b>PARKING LOT</b>  | <b>TOTAL SPACES</b> |
|---|---------------------|
| Alaska Spine Institute  | 163                 |
| APM   | 62                  |
| Grant Hall  | 21                  |
| Carr-Gottstein  | 211                 |
| Atwood Center   |                     |
| Moseley Sports Center   | 59                  |
| Grace Hall  | 206                 |
| Gould Hall  |                     |
| Glenn Olds Hall   |                     |
| Segelhorst Hall   | 14                  |
| University Village  | 25                  |
| University Lake Suites  | 144                 |
| Medical Office Tract B*<br>(parking lot split into 2 – north and south of<br>University Lake Drive) | 134                 |
| <b>Total Parking Provided</b>   | <b>1039</b>         |

Note: Shading indicates an APU tenant

\*to be constructed in 2016

APU staff and administration estimates that only 25 percent of APU students own vehicles, and that vehicles are often shared with other students. Lots are most fully used in the evenings when the student population increases. The large lot serving the USGS is among the most used during daytime hours. The west end of this lot is among the least used, due to its location on the edge of the campus and greater distance from campus buildings. Other lots appear to have sufficient

capacity. When one lot fills up, such as when Moseley Sports Center is hosting a major event, people are able to park in the next closest lot with relatively short walking distances. Campus-wide parking works and is currently adequate to meet the needs of students, faculty, guests, and Endowment facilities. The mix of uses have maximum use at different times allowing excellent joint or shared uses of the spaces.

An analysis of parking requirements for the APU campus, based on old Title 21, AMC 21.45.080, is included in Table 5. As illustrated below, approximately 1,580 spaces are required on campus based on the old Title 21 municipal land use code. As indicated in the following tables and narrative, only 994 spaces are currently required under new Title 21 and 1,039 are currently provided.

**Table 5: Old Title 21 Parking Requirements**

| Building                               | Gross Floor Area (SF or rooms) | Parking Requirement |              |
|--|--------------------------------|---------------------|--------------|
|  |                                | Ratio               | Total        |
| Alaska Spine Institute                 | 58,726                         | 1:250 sf            | 234.90       |
| Alaska Spine Institute MRI             | 1,260                          | 1:300 sf            | 4.20         |
| APM <sup>1</sup>                       | 18,600                         | 1:300 sf            | 62.00        |
| Grant Hall                             | 53,581                         | 1:300 sf            | 178.60       |
| Carr-Gottstein                         | 26,470                         | 1:300 sf            | 88.23        |
| Atwood Center                          | 79,993                         | 1:300 sf            | 266.64       |
| Moseley Sports Center                  | 17,887                         | 1:300 sf            | 59.62        |
| Grace Hall                             | 35,270                         | 1:300 sf            | 117.57       |
| Gould Hall                             | 25,123                         | 1:300 sf            | 83.74        |
| Glenn Olds Hall                        | 27,170                         | 1:300 sf            | 90.57        |
| Glenn Olds Hall Addition               | 20,395                         | 1:300 sf            | 67.98        |
| Segelhorst Hall                        | 24                             | 1:2 rooms           | 12           |
| University Village                     | 24                             | 1:2 rooms           | 12           |
| Mlakar President's Home                | 4,956                          | N/A                 | N/A          |
| University Lake Suites                 | 159                            | 1:1 rooms           | 159          |
| Medical Office Tract B*                | 35,718                         | 1:250 sf            | 142.872      |
| <b>Total Old Code Parking Required</b> |                                |                     | <b>1,580</b> |
| <sup>1</sup> Estimated floor area      |                                |                     |              |
| *to be constructed in 2016             |                                |                     |              |
| Note: Shading indicates an APU tenant  |                                |                     |              |

**Table 6: Proposed Parking Requirements**

| Building                              | Gross Floor Area (SF or rooms) | Parking Requirement |            |
|---------------------------------------|--------------------------------|---------------------|------------|
|                                       |                                | Ratio               | Total      |
| Alaska Spine Institute                | 58,726                         | 1:300 sf            | 195.75     |
| Alaska Spine Institute MRI            | 1,260                          | 1:300 sf            | 4.20       |
| APM <sup>1</sup>                      | 18,600                         | 1:600 sf            | 31.00      |
| Grant Hall                            | 53,581                         | 1:600 sf            | 89.30      |
| Carr-Gottstein                        | 26,470                         | 1:600 sf            | 44.12      |
| Atwood Center                         | 79,993                         | 1:600 sf            | 133.32     |
| Moseley Sports Center                 | 17,887                         | 1:600 sf            | 29.81      |
| Grace Hall                            | 35,270                         | 1:600 sf            | 58.78      |
| Gould Hall                            | 25,123                         | 1:600 sf            | 41.87      |
| Glenn Olds Hall                       | 27,170                         | 1:600 sf            | 45.28      |
| Glenn Olds Hall Addition              | 20,395                         | 1:600 sf            | 33.99      |
| Segelhorst Hall                       | 24                             | 1:2 rooms           | 12         |
| University Village                    | 24                             | 1:2 rooms           | 12         |
| Mlakar President's Home               | 4,956                          | N/A                 | N/A        |
| University Lake Suites                | 159                            | 1:0.9 rooms         | 143.1      |
| Medical Office Tract B*               | 35,718                         | 1:300 sf            | 119.06     |
| <b>Total Parking Required</b>         |                                |                     | <b>994</b> |
| <sup>1</sup> Estimated floor area     |                                |                     |            |
| *to be constructed in 2016            |                                |                     |            |
| Note: Shading indicates an APU tenant |                                |                     |            |

Per new code AMC 21.07.090.E.3, “In the case of a use or category of uses not listed in table 21.07-4, or that is listed without a specific parking requirement, the requirements for off-street parking facilities shall be determined by the director and the traffic engineer. Such determination shall be based upon the requirements for the use specified in table 21.07-4 that is most nearly comparable to the unspecified use, traffic engineering principles, and/or parking studies. Any parking study prepared by the applicant shall include estimates of parking demand based on recommendations of the Institute of Transportation Engineering, or other acceptable estimate as approved by the traffic engineer, and shall include other reliable data collected from uses or combinations of uses that are the same as or comparable with the proposed use. Comparability shall be determined by density, scale, bulk, area, type of activity, and location. The study shall document the source of data used to develop the recommendations.” In this

instance, the traffic engineer and the director concurred with a parking study prepared by DOWL on May 6, 2011 (Appendix E). The parking study DOWL completed at APU documented that a ratio of one space to 300 gross square feet (sf) far exceeds actual campus parking demand. Based upon the actual parking usage, the People Mover transit service provided on campus, and the fact that many of the college students attending APU do not own vehicles, but rely on walking or bicycling for transportation within the campus, a reduction to the existing off-street parking requirements would not be expected to adversely affect parking availability on or off campus. Therefore, APU was granted a parking ratio of 1:600 gross sf for existing administrative offices/educational buildings, based on the documented parking demand. In addition, APU would generically apply the 1:600 ratio to future administrative offices/education buildings; however, APU recognizes that the Municipal Traffic Engineer reserves the right to evaluate each new building on a case-by-case basis.

### 2.3.5 Loading Facilities

Several loading facilities exist on the APU campus. The Atwood Center, Grant Hall, APM, Alaska Spine Institute, and USGS buildings have existing loading facilities integrated into the site plans.

### 2.3.6 Recreation and Trails

University Lake, formerly part of APU, is located just south of the campus' southern boundary on municipal parkland. The lake was created by the removal of gravel from the site. Chester Creek flow was redirected through the lake in the early 1980s, which maintains lake levels. University Lake provides a peaceful site for canoeing, kayaking, fishing, picnicking, bird watching, dog walking, and other outdoor pursuits for University students and the general public. APU's outdoor education program uses the lake for a variety of educational program functions. It is surrounded by a trail system used for walking, running, biking, dog walking, and skiing throughout the year.

On the APU campus east of University Lake and below the Mlakar President's Home is the former Ross Olds soccer field. The large field was constructed in 1984 on the largest flat,

cleared area on the APU campus. It has minimal topsoil covering a rocky surface. The soccer fields were used year-round. In the summer, various soccer clubs rented the field for games, tournaments, and events. Due to the amounts of dog feces on the soccer field area, the soccer clubs terminated their leases and use of the fields. In the winter, the fields are groomed and integrated as part of the existing Mahaffey Trail system that traverses the campus. In addition, APU retained a small portion of lake frontage to ensure and accommodate continual access to the northeastern end of University Lake from the lands owned around the soccer fields, allowing for continued university use.

The Mahaffey Trail system winds through the APU campus and connects to other trails in the Municipal trail system (Figure 10). APU students, as well as the general public, use these gravel and dirt trails for access and recreation. The Mahaffey Trail system connects to municipal trails on the north, south, east, and west property boundaries. Informal trails also exist at various other locations on the campus.

Many trail users perceive that APU's trails are part of the larger municipal park and trail system; however, the trails are private and allow for public use as long as no significant impact upon the campus or its educational mission occurs. These trails are not located in easements and therefore can be relocated as needed as the campus develops. The acquisition of conservation easements was proposed in the 2003 UMED Plan. However, a conservation easement program was not established or funded.

APU also has paved trails which connect Grant Hall and the Atwood Center, and the Atwood Center and the Carr-Gottstein Academic Center. The paved trails are in very good condition. Sidewalks and driveways connect other buildings to each other and to the parking lots.

### 2.3.7 Campus Signage

At APU's entrance is a newly erected monument sign greeting visitors to the campus. In the campus center, various signs are on the buildings, on poles, and on temporary placards along the road. Signage style is dated, inconsistent, and of variable size. A more formal and uniform signage standard would enhance campus aesthetics and improve wayfinding. Stop and yield

signs are lacking at intersections of University Drive and driveways to buildings and parking lots.

### 2.3.8 Utilities

The APU campus is provided with complete utility services in the core area. Water, sanitary sewer, electric power, natural gas, telephone, and cable television services are all available within a reasonable distance from the majority of university buildings. Fiber optic cable is also extended to the campus.

Indications are that the existing utilities are adequate for the current demand. The following sections describe each of the utilities available for the APU campus.

#### 2.3.7.1 *Water*

The water system on campus is combination of Anchorage Water/Wastewater Utility (AWWU) water lines and private water lines, owned by APU. The water system is attached on both ends to AWWU water mains (Figure 11). The on-campus piping is mostly 12-inch cast iron pipe (CIP) and a short section of 10-inch CIP near Grant Hall that was installed in about 1964. The AWWU water main that enters the campus from Providence Drive is a 16-inch ductile iron pipe that was installed in 1982. The APU-owned piping begins prior to the water service to Grant Hall. The connection on the north side of campus is to a 12-inch CIP that runs to the subdivision to the east of campus. This AWWU line connects just after the water service to the Atwood Center and was installed about the same time as the campus piping. In 2000, a new water service was added to serve the University Village housing units.

The capacity of the water mains on campus is sufficient for the current demand and for the proposed student housing, a future classroom building, and/or other development anticipated in the academic core for the next 10 years. However, the piping has been in service for over 40 years and may be at, or approaching, the end of its service life. It is not possible to determine the pipe condition from the surface.

### 2.3.7.2 *Sanitary Sewer*

The sewer lines on campus are public mains (Figure 11). The lines are 10-inch concrete pipe installed in 1964. The sewer connects to a 48-inch AWWU sewer main just west of Elmore Road installed in 1970. In about 2000, the sewer was extended from the Atwood Center to connect to University Village housing. The capacity of the sewer lines on campus is sufficient for the current demand and proposed development. However, since the piping has surpassed 40 years of service, it may be at, or approaching, the end of its service life. Sewer piping should be inspected using a television system to evaluate the condition of the existing piping. If the sewer lines are found to be in poor condition, they should be scheduled for replacement or rehabilitation.

### 2.3.7.3 *Storm Drainage and Snow Storage*

There is a limited storm drain system on campus to collect storm runoff (Figure 11). Parking areas and buildings surface drain to a system of bioswales to the drainage areas below the campus. Most of the surface water is absorbed into the surface and swales, reducing the amount of storm water leaving the site. Storm drains discharge to University Lake and the south fork of Chester Creek. A storm water drainage analysis performed by DOWL Engineers (April, 2008) locates the existing storm drain systems on the APU campus and evaluates their capacity. The systems were evaluated for peak runoff flows for 2-year, 6-hour and 10-year, 3-hour storm events.

The study identifies two existing storm drain systems in Elmore Road, to the west of the APU campus. Both systems were constructed by the State of Alaska, Department of Transportation and Public Facilities in 1980 and discharge into the south fork of Chester Creek. The first system is a 12-inch, corrugated metal pipe (CMP) that collects runoff from two catch basins along the pedestrian trail to the east of Elmore Road. Under existing conditions, the 12-inch CMP meets capacity for a 2-year, 6-hour storm event; however, the 10-year, 3-hour flow exceeds the pipe capacity. The second system in Elmore Road consists of an 18-inch CMP main line located to the west of Alaska Spine Institute, and flowing north up Elmore Road. At the intersection of Elmore Road and University Drive, the pipe size increases to 30-inch CMP. This

system outfalls into the south fork of Chester Creek. Under existing conditions, the existing runoff to the 18-inch CMP already surpasses the full-flow capacity of the existing system.

A 12-inch CMP outfall is located at University Lake, to the southeast of the constructed end of University Lake Drive. During field inspections, this pipe was not carrying any water; it could not be determined where the inlet to this pipe is located or what area drains to the system. The study assumed that no water contributes to the outfall; however, an estimate was made that determined the 12-inch CMP would have a full-flow capacity of 1.36 cubic feet per second (cfs).

Two 12-inch CMPs outfall at the north side of University Lake to the south of the sports field. At the time of the field inspection, the pipes were not carrying any water, possibly due to glaciation. The inlets to the pipes could not be located and the areas contributing runoff to the system could not be verified. The DOWL Engineers study assumed that the full-flow capacity for each pipe is 1.36 cfs, which would be exceeded in a 10-year, 3-hour storm event.

The core area of the APU campus, north of University Drive, contributes runoff to the existing 30-inch CMP in Providence Drive. Based on conservative estimates, the 30-inch CMP is undersized for a 10-year, 3-hour storm event at existing conditions.

The area of campus to the north of Moseley Sports Center and Atwood Hall is primarily undeveloped, but contains University Village, Segelhorst Hall, and portions of the campus trail system. No storm drain system exists in this area of campus, and runoff is assumed to flow to low spots in the terrain. Water that does not infiltrate may reach wetland areas to the north of the APU campus.

Removal of snow on University Drive, up to the edge of University Village, is handled by the MOA. Snow removal on other surfaces has been handled by both APU maintenance staff and contractors. Snow in parking lots is normally pushed to a corner or edge of a parking lot, and removed at a later time, when the volume dictates removal. Snow removed from parking lots is typically stored on campus; however, snow from the Alaska Spine Institute and University Lake Suites is disposed of off-campus as set out in their leases. Snow from on-campus lots is stored near the end of University Lake Drive. This has been the practice since development started on

campus in the late 1950s. The specific placement of snow may shift slightly each year, depending upon ongoing development activity.

#### *2.3.7.4 Electric Power*

The University purchases electricity from Municipal Light and Power. The power cables throughout the campus are all underground and access to 12.47 kilovolt electricity is available to all buildings. The cables for much of the campus appear to have been replaced since 1990; however, some areas of campus near Gould Hall have original 1961 cables.

#### *2.3.7.5 Natural Gas*

Natural gas is provided by ENSTAR to all buildings. A 12-inch gas main runs adjacent to the campus on the west. The gas lines are fed from a gas main that runs west of the campus. ENSTAR has a feeder line, a meter located west of Grant Hall, and all gas piping downstream of the meter belongs to APU. A 3-inch gas main runs from the meter through campus to the Atwood Center. Individual 1-1/4-inch lines feed the buildings on campus. APU's gas lines are old and frequently need repairs.

#### *2.3.7.6 Telephone*

Telephone service is provided by Alaska Communications Systems and is available to all buildings on campus. These systems have been installed in various stages from the 1960s to the present.

#### *2.3.7.7 Cable Television, Fiber Optic*

Cable television is available to all buildings on campus except the Moseley Sports Center and fiber optic is available to all of the main buildings at the University. These services are provided by General Communications Incorporated.

2.3.8.8 *Fuel Storage*

APU facilities are heated with natural gas. Maintenance staff store limited amounts of fuel at the maintenance site, in small cans (for small engines) and in diesel barrels (for larger equipment). At this time, no additional fuel storage is envisioned.

**3.0 CAMPUS MASTER PLAN**

**3.1 Campus Development Needs**

This section of the campus master plan discusses the potential for future development to meet APU's needs associated with expanding academic programs and funding university operations. The enrollment level at APU has increased from 506 FTE students in 2001 to 550 FTE students in 2008, an increase of almost 10 percent. Since then, APU's enrollment has varied. As APU establishes relationships with various industries through development of its endowment lands, it may continue to find opportunities to develop academic programs that support these industries. For example, APU has re-established its Hospitality Management program, based on its developing relationship with the University Lake Suites Hotel (NANA/Marriott). Additionally, APU has recently completed a student health center on the campus.

APU's internal campus master plan, completed in 2004, identified the need for almost 100,000 net square feet (NSF) of additional space for future operations of 735 FTE students. The space requirements were allocated as shown in Table 7.

**Table 7 – Campus Development Needs**

|                              |                   |
|------------------------------|-------------------|
| Academic/Support Space       | 15,219 NSF        |
| Institute of the North Space | 22,525 NSF        |
| Student Residential Space    | 55,600 NSF        |
| Central Maintenance Space    | 6,000 NSF         |
| <b>Total Space Required</b>  | <b>99,344 NSF</b> |

Since that planning effort, APU has completed construction of Segelhorst Hall to meet student residential space needs and remodeled the University Village residence units. In addition, the

Institute of the North has been relocated off-campus. Similarly, maintenance space needs have been reduced as APU has outsourced many of its maintenance activities over the last several years. With the growing student population, however, there is still likely to be a need for additional academic and support facilities within the next 10 to 20 years. APU has sufficient lands designated to accommodate increases in both academic and housing needs.

APU also has Endowment Development Lands to be developed and operated to both provide operating revenues to the university and to provide opportunities for cooperative education and training programs and spaces between APU and private/public partners. Cooperative opportunities may include incorporation of conferencing, meeting and classroom space within some of the new buildings on endowment lands, as was done with the Alaska Spine Institute.

The following sections discuss the proposed Campus Land Use Plan that will be used to guide development on the campus to meet the university's academic and financial needs.

### **3.2 Campus Land Use Plan**

The Campus LUPM is illustrated in Figure 12. Four land use categories have been identified and are described below. It should be noted that the land use area boundaries are general in nature and represent the general arrangement and location of uses on the campus. The exact boundaries of any particular land use district on campus may be refined as development occurs.

As previously addressed, new Title 21 includes a section on Institutional Master Planning that allows institutions such as APU to prepare a Master Plan for the lands that are under the ownership of the institution. This is designed to provide flexibility to institutions to carry out development of their lands in accordance with the institution's mission. APU's 2011 Master Plan has been updated to better match the requirements of new Title 21. Although APU's lands consist of several separate parcels, the entire land holding is managed as one campus and the development and design standards included in the Master Plan address the campus as a single parcel. This master plan is proposed to set the management policies and regulations for development activities on the campus in the future, in accordance with section AMC 21.03.110.

### 3.2.1 Land Use Categories

**Academic Core.** The Academic Core contains the existing academic, administrative, student services, core residential, and support areas of the APU campus, all positioned along University Drive. These lands are relatively flat, have reasonably good soil conditions, and are served by existing utilities and roads. The Academic Core is considered prime land for future academic, administrative, and student services building expansion, with the goal of locating such buildings in close walking distance to each other. It also includes existing vegetated areas between the Atwood Center and Grant Hall and the vegetated areas north and west of University Drive. The vegetated areas are recognized for their important aesthetic and recreation value, and development for academic purposes may be considered in the long-term with careful consideration of the natural environment. It also includes Segelhorst Hall, the most recent housing development, just north of the Atwood Center and east of University Village.

**Recreation/Open Space.** These are areas designated for existing and future recreation and open space uses for APU students and, to some extent, the broader community. It includes areas that are adjacent to the University Lake and Chester Creek Trail, as well as buffering space between the proposed development areas. The areas are proposed to remain mostly undeveloped in a natural state because of topographic challenges, a desire to maintain a buffer between land uses, and a desire to retain the opportunity for a permanent trail system around and through the campus. The intent of this land use designation is to establish buffers between uses to reduce the visual effects of development in the areas while providing space for recreation and natural vegetation. While the existing campus trails are not in trail easements (other than the University Lake Trail and Chester Creek Trail along the southern and eastern boundaries of the campus), trail connectivity will be maintained to the greatest extent possible when campus lands are developed. Limited development of the greenbelt areas may be necessary, particularly for trails, recreational uses, vehicle access, and utility extensions.

**Endowment Development Priority.** Endowment Development Priority lands are areas allocated for uses compatible with the University's mission and community's growth needs. Endowment Development Priority lands may be developed by APU, with both land and facilities leased, or developed by others, with only the land leased. Lease revenues from Endowment

Development Priority lands or buildings generate revenues to support APU's operating and capital cost needs. The Endowment Development Priority land use classification mirrors the intent of the ten-year development envelope, as described in Title 21, and is proposed for development in the short-to-medium term. These lands are easier to develop due to proximity to existing roads and utilities, flat slopes and good soils, and desirable locations relative to existing facilities and University Lake. Previous Endowment Development Priority developments have also incorporated classroom, conference room, or other spaces for use by APU programs, which help meet the net square footage needs of APU without requiring additional capital expenditures by the University. Future development of the Endowment Development Priority lands may include commercial, professional, and other uses that are desired by the community and local institutions, as outlined in Section 3.2.2. Designation as endowment land is not intended to preclude the ability for these lands to be used for academic uses, supporting residential uses, or accessory uses including snow disposal or other administrative support infrastructure.

**Endowment Development Reserve.** The Endowment Development Reserve lands, located on the north and northeast portions of the campus, are lands that are not likely to be developed in the short-term due to wetlands, poorer soils, topography, and the lack of access and utilities. This land use classification mirrors the intent of the twenty-year development area, as described in Title 21. The current 2025 Long-Range Transportation Plan for Anchorage proposes a new access to the UMED District from Northern Lights Boulevard to Providence Drive, via an extension of Elmore Road. Construction of this access could result in some of the northern Endowment Development Reserve lands becoming more accessible for development. If these lands are developed, site planning would be designed to carefully integrate existing natural features and trails. As mentioned previously, the private trails on APU are not located in trail easements and can be relocated as appropriate, as development occurs on campus. Future development of the Endowment Development Reserve may include a range of uses as outlined by this plan.

### 3.2.2 Allowable Uses

Future development of Endowment Development Priority and Endowment Development Reserve is likely to continue to encompass a variety of institutional, health care, commercial,

office facilities, and other uses that are compatible with and supportive of APU's academic and financial operations. In general, all of the uses that are permitted by Title 21 within the PLI District would be included in the APU Institutional Master Plan. This includes those uses that require any type of review process, as by-right permitted principal uses. Additionally, the following use categories would be permitted principal uses on the APU campus, unless further specified to include or exclude individual uses below.

### **Residential Uses**

*Intent:* Although dormitories are a permitted use accessory to college or university, residential uses have been included as permitted principal uses in the APU Institutional Master Plan to allow a variety of residential developments. As the campus grows, it may be necessary to provide additional housing options to meet demand in the UMED District. Additionally, the District Plan discusses the option of using institutional lands for future housing needs, including mixed residential/commercial developments in the UMED Village. It is not intended, however, to allow for development of mobile home uses. The following use categories are included:

- Household Living Uses (excludes Mobile Homes) (Multi-family housing developments shall not be subject to AMC 21.07.110, Residential Design Standards; Multi-family housing developments shall be reviewed by the APU Advisory Committee); and
- Group Living Uses.

### **Community Uses**

*Intent:* This section includes a range of uses that are typically permitted in the PLI District under a conditional use or major site plan review; under the Institutional Master Plan the proposed uses would be permitted principal uses. The intent is to allow uses that may be desired for civic or institutional needs, as growth occurs in the District. It is not intended to include uses that generally do not fit the UMED District intent such as a cemetery, crematorium, or homeless and transient shelter. The following use categories are generally included in the APU Institutional Master Plan, unless further specified:

- Adult Care;
- Child Care Service;

- Community Services (excludes crematoriums, cemeteries, and homeless/transient shelters);
- Cultural Facilities;
- Educational Facilities;
- Health Care Facilities;
- Parks and Open Areas;
- Public Safety Facilities;
- Transportation Facilities (includes Transit Center and Heliport uses only);
- Utility Facilities; and
- Telecommunication Facilities.

### **Commercial Uses**

*Intent:* Modern university campuses typically incorporate a variety of commercial uses for the benefit of students, employees, and local residents. It is widely recognized that the UMED District is under-served by basic commercial uses. It is the intent of the APU Institutional Master Plan to allow for a range of commercial uses that support the district's position as a major employment center. Development may include office and professional type uses, as well as neighborhood-commercial-scale retail and food and beverage services. The inclusion of commercial uses is also in line with the UMED Village concept set forth in the District Plan. The following use categories have been included under the APU Institutional Master Plan:

- Agricultural;
- Animal Sales, Service, & Care (excludes large domestic animal facility);
- Assembly;
- Entertainment and Recreation;
- Food and Beverage Service;
- Office;
- Personal Services, Repair, and Rental;
- Retail Sales (excluding fueling station, auction house, and pawnshop) (individual uses under 50,000 sf are permitted and shall not be subject to AMC 21.07.120, Large Retail

Establishments, design standards or major site plan review; developments under 50,000 sf shall be reviewed by the APU Advisory Committee);

- Vehicle and Equipment (includes parking lots and structures; excludes vehicle sales and rental and vehicle repair, major and minor); and
- Visitor Accommodations.

### **Industrial Uses**

*Intent:* As the community continues to grow and transition into new economic sectors, new manufacturing processes or technology industries may emerge. Industrial uses have been included within the APU Institutional Master Plan to allow APU to respond to potential shifts in economic markets and potentially allow for technology and small-scale manufacturing uses to be located on the campus, including their research and development. This would also allow business and institutions to create storage spaces in support of other uses. It is not intended to permit heavy manufacturing uses; traditional, drive-in self-storage facilities; waste and salvage yards; or other more intensive uses. The following industrial use categories are included in the plan:

- Industrial Service (excludes heavy equipment sales and rental);
- Self-Storage Facility (includes indoor, multi-level, building, storage facility);
- Manufacturing and Production (excludes heavy manufacturing); and
- Warehouse and Storage Uses (includes warehouse or wholesale establishment, general and light, and storage yard).

**Accessory Uses.** Accessory uses, including maintenance facilities and snow storage, may be located within any of the land use districts on campus. Accessory uses include any and all operations, activities, and uses needed to maintain and operate the university.

### 3.2.3 Design Guidelines for Future Development

The APU Institutional Master Plan design guidelines have been developed to meet the intent of the District Plan Design Guidelines, while allowing flexibility for APU. It includes standards for lot coverage, yard requirements, parking, snow removal, road improvements, utilities, circulation, conservation/trail easements, academic/support facilities, and residential facilities.

The Institutional Master Plan design guidelines have precedence over the District Plan Design Guidelines and zoning and use standards of Title 21.

### **Academic/Support Facilities**

As discussed above, APU is likely to need over 15,000 square feet of additional academic and support space over the next 10 years. Guidelines for siting and design of future academic and support buildings are listed below.

- Locate academic building(s) in the academic core area to minimize walking distances and maximize convenience for students moving between classes.
- Preserve views of mountains from existing and future buildings.
- Locate buildings close to existing utilities and plan future development with regard to utility and traffic connections.
- Minimize elimination of existing vegetation.
- Three-story developments on the campus are permitted outright. Development greater than three stories shall be permitted subject to review by the APU Advisory Committee. Development over 75 feet shall be a permitted as a conditional use.

### **Residential Facilities**

Current student housing needs have been met with construction of the Segelhorst Hall and remodeling upgrades at University Village. Future residential development may include housing for students and staff, as well as market-rate multi-family housing that would be available to the public. Guidelines for siting and design of future residential areas are listed below.

- Locate new residential facilities in close proximity to existing and future commercial and institutional facilities.
- Consider view sheds and sunlight access when siting new residences.
- Multi-family housing shall be designed with a distinctive character that provides variety and visual interest and is consistent with other developments on the campus. Multi-family housing shall not be subject to the standards of AMC 21.07.110.
- Site new residential facilities on pleasant, vegetated sites.

- Consider pedestrian access to campus facilities and trails when siting new residential areas.
- Site new facilities in areas with convenient access to utilities.
- Site new facilities in areas that have the potential for future expansion.

### **Lot Coverage Standards**

Lot coverage calculations should be based on the campus as a whole, rather than on individual buildings or projects. This allows APU to cluster development to promote walkability while maintaining more open space and buffers between campus facilities and adjacent land uses. Parking structures, particularly those under shared use agreements with other UMED institutional uses, should not count against lot coverage calculations.

### **Yard Requirements**

Yard setbacks are proposed to be based on the campus as a large single parcel, rather than based upon the campus' multiple individual parcels. Interior common lot lines within the campus will not be subject to front, side, and rear yard requirements. This allows APU to locate their buildings closer together and create a more walkable environment.

### **Parking**

APU's goal is to provide sufficient parking to support campus operations, but to minimize visual impacts from excess parking. Parking will be considered on a campus-wide basis recognizing and maximizing the shared use of parking based upon varying needs and times of parking demand. The campus has excellent transit access and an extensive trail network that can be used for bicycling and walking. Parking needs are to be met through careful placement of parking at key areas. Total parking needs for existing facilities are currently met, as described earlier. APU enjoys a very low student to vehicle ownership ratio and will continue to monitor this trend, as it results in a lower demand for parking spaces on campus. APU believes that previously approved studies of campus parking demand support a parking requirement of one space per 600 sf. This parking demand takes into account the transit service provided to the campus, the well-connected trail system, and the low rate of automobile ownership on campus. However, should a future

building be determined, by its use or other characteristics, to require more or less parking, we recognize that the MOA Traffic Engineer will reserve the right to evaluate each new building on a case-by-case basis. However, a new parking agreement shall not be required unless the overall parking requirement of 1:600 changes due to future uses.

Guidelines for siting and design of new campus parking areas are listed below.

- Parking demand on the APU campus is to be calculated as 1:600 sf, based on campus-specific factors.
- Various parking options may be intermixed with building options including parking lots.
- The location of parking facilities to new development shall be considered on a campus-wide basis to encourage pedestrian-oriented uses and a walkable campus.
- Prevent parking from becoming the dominant feature along University Drive and University Lake Drive by creating centralized parking areas and pedestrian connections to multiple uses on the campus.
- Use vegetation to screen parking from roadways, where possible.
- Minimize parking directly in front of or behind new buildings, where possible.
- Consider the cost effectiveness and convenience of parking at the lower levels of new developments.
- Loading facilities shall not be included with development unless necessary for the use. Loading facilities shall be located to minimize the view main entrances and roadways.

### **Snow Removal**

As a winter city campus, APU has a significant amount of snow to manage on the campus. APU manages snow generated in the academic core, on-campus residential areas, campus roads and trails, endowment properties, and parking areas. As mentioned previously, the APU campus consists of multiple parcels that are all owned and operated by the University. Title 21 recognizes that snow among abutting or contiguous lots can be jointly managed for snow storage and disposal purposes. APU will continue to manage their snow under a unified campus management plan. University Lake Suites is responsible for management of snow generated on their site. Guidelines for siting and management of snow storage sites are listed below.

- Snow should be stored on the development site, when possible, to reduce the costs associated with transporting snow. Multiple uses and developments on the campus may use a common snow storage areas, located on adjacent parcel or development sites.
- Major snow disposal sites on campus should be sited in areas that have easy access by trucks, maximize use of cleared areas (minimize clearing treed areas), minimize impacts to on-campus and off-campus residential areas, and allow access to snow for use on trails as needed.
- Snowmelt should be prevented from draining directly into water features, such as University Lake and Chester Creek. Snow disposal sites shall be designed to allow for snowmelt infiltration into the soils to the greatest extent possible. Retention areas for snowmelt should also be considered for treatment prior to off-site discharge.

### **Landscaping**

- Maintain existing vegetation, where possible.
- All areas not devoted to development or driving surfaces will be replaced with landscaping, lawn, trails, walkways, or site amenities that are generally consistent with APU's campus design. This standard shall be applied generally to all landscaping requirements including site perimeter, parking lot perimeter, and parking lot interior landscaping to provide APU flexibility as a unified campus.
- The campus is being developed as a common development, therefore code required site perimeter landscaping shall only be applied along the perimeter of the campus, unless a common development standards are accepted by the adjacent property owner.
- Use landscaping to buffer parking areas from major trails and roadways.

### **Endowment Development Priority and Reserve Lands**

Most of APU's Endowment Development Priority and Reserve Lands (Endowment Development Lands) are undeveloped and located outside the core campus area. The Endowment Development Lands support the University through the generation of revenues for

campus operations and by the development of facilities and expertise that can support academic programs. Examples of this include the USGS facilities at Glenn Olds Hall, the Alaska Spine Institute, and the University Lake Suites hotel. These facilities support APU operations financially through lease payments as well as through programmatic relationships with APU's academic programs in business, environmental sciences, hospitality, health services administration, and outdoor recreation.

Future development of the Endowment Development Lands is likely to continue to encompass a variety of institutional, health care, commercial, and office facilities that are compatible with and supportive of APU's academic and financial operations. Guidelines for the siting and design of facilities within the Endowment Development Lands are listed below.

- Site and orient buildings to take advantage of scenic views.
- Consider solar aspect, prevailing winds, and other climatic features to create favorable microclimates for usable outdoor spaces.
- Design buildings to be compatible with adjacent campus development in terms of mass, height, and exterior materials.
- Three-story developments on the campus are permitted outright. Development greater than three stories shall be permitted subject to review by the APU Advisory Committee. Buildings up to 75 feet are permitted within the PLI District in the UMED District area. Increasing the height of developments helps to minimize the building footprints, preserve existing parking and vegetation, and save costs while creating developments that are compatible with other UMED developments. Development over 75 feet shall be a permitted as a conditional use.

### **Road Improvements**

APU is currently accessed via two dead-end roads. As the campus continues to develop, the MOA has indicated that additional circulation improvements will be required. It is APU's desire that University Lake Drive and University Drive will eventually be connected as shown

conceptually on the Campus Land Use Map. In 2010, the MOA and APU entered into a Memorandum of Agreement to have the MOA move forward with the design for the extension of University Lake Drive approximately 1,500 linear feet. In addition, the MOA constructed in 2014 a new roundabout between Tudor Road and the Elmore Road/University Lake Drive intersection on Elmore Road. It is also expected that the UAA will also include a new connection from this roundabout to the University Lake Drive extension. These road improvements, the closer connection of University Lake Drive and University Drive, and the connection to the proposed roundabout on Elmore Road, are expected to provide APU with sufficient access, emergency access, and circulation through the planning period (Appendix F).

Although the Northern Access Project has recently been postponed, the road is still included in the 2014 Official Streets and Highways Plan and the District Plan. It is anticipated that the project will be developed in the future to allow for growth of the UMED District and improve traffic circulation to and from the area. Therefore, the potential connections are still included in the APU Institutional Master Plan maps.

### **Additional Campus Design Standards**

APU has adopted the following additional design standards for development on the APU campus.

- **Wayfinding & Signage:** Signage is planned to include building mounted or monument type signs. No pole mounted signs will be permitted. Campus wide directional signage shall be coordinated in a campus template, so as to look common and cohesive. Sign standards will be in-line with AMC Title 21, unless alternative sign requirements are included under a unified sign plan.
- Encourage non-motorized transportation through provision of a system of trails that promote safe pedestrian and bicycle access.
- Continue to consider the linear development of academic facilities to serve as indoor pedestrian corridors during inclement weather.

- Maintain the quality environment of APU by protecting the natural buffers and incorporating consideration of open space and scenic views into future planning and design efforts.
- Continue to work with the MOA Transit Department to provide efficient bus transportation that meets the needs of APU employees and students.
- Use appropriate wayfinding signage on roads and trails to direct students and visitors to major destinations and transit stops.
- Road design on campus should retain a rural “country-lane” design standard to remain consistent with the small campus context and to minimize potential adverse effects on the natural environment and recreation features.

### **3.3 Consistency with Adopted Plans**

This section documents the APU Institutional Master Plan’s consistency with the goals and policies of *Anchorage 2020*, the Anchorage LUPM, and the District Plan.

#### **3.3.1 Anchorage 2020**

The UMED District is recognized in the MOA comprehensive plan as a Major Employment Center. Major employment centers are areas with high densities of employment. The UMED employment center in particular, is recognized as Anchorage’s leading workplace for education, healthcare, and social services. These services are provided not just for Anchorage, UMED institutions provide service to both the southcentral region and the state.

As noted, the policies associated with Major Employment Centers in Anchorage 2020 call for high concentrations of office development, mixed commercial/office development, and pedestrian-oriented development. This Institutional Master Plan allows for a mix of uses within the UMED District, consistent with its role as a Major Employment Center. The design standards outlined earlier in this master plan provide guidance for development to meet Anchorage 2020’s policies regarding site design, building orientation, and attention to pedestrian circulation and amenities. In particular, the campus parking plan reduces parking on campus and instead promotes transit and alternative transportation for faculty, staff, and students.

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### 3.3.2 Land Use Plan Map

A new Anchorage Bowl LUPM for implementing Anchorage 2020 has not yet been adopted by the Assembly. The policy map in Anchorage 2020 designates the UMED District as a Major Employment Center, as discussed above. The MOA's currently adopted LUPM is the Generalized Land Use Plan from the 1982 Anchorage Bowl Comprehensive Development Plan, which shows all of APU's campus as Public Lands and Institutions.

Anchorage 2020's implementation policies call for the policy map to guide development until other strategies are adopted that provide more specific guidance. Although the previous APU land use designations were adopted by the Assembly in 2012 as an amendment to the 2003 UMED Plan, the proposed APU Campus Land Use designations (Figure 12) will not modify the recently approved UMED District Land Use Plan Map. The District Land Use Plan Map designates the APU campus as Major Institutional land use. In accordance with the institutional master plan process, as defined in Title 21, the proposed land uses within the Adopted APU Institutional Master Plan would be permitted within the PLI District, thus an update to the District Land Use Plan Map is not required.

### 3.3.3 UMED District Plan

As previously addressed, the APU Institutional Master Plan is consistent with the intent of the District Plan. One of the key components of the District Plan is that major organizations should create and submit institutional master plans as outlined in Title 21. This allows for public involvement and coordination prior to approval. The APU Institutional Master Plan is also in line with many of the Vision Elements and Goals of the District Plan, some of which are outlined below.

- *Supporting Organizational Missions.* The District Plan recognizes that the UMED District is the second largest employment sector in the State and that the organizations have created a center of economic growth, education, research, and health services. One of the goals under this Vision Element is, "*Identify a comprehensive land use strategy for the entire District to allow institutional growth and ancillary uses that support*

*organizational missions.*” The Implementation section for this goal states, “*Foster commercial and retail development that withstands market realities and responds to the desires and recommendations of UMED management, student, staff, and nearby residents.*” Another goal under this Vision Element is, “*Shape future growth in accordance with the distinct values expressed in this plan.*” Implementation of this goal states, “*Encourage the UMED organizations to seek Assembly approval of adopted master plans.*” APU’s amendment to their master plan is supportive of this goal.

- *Quality of the Built Environment.* This Vision Element focuses on design standards that allow for sustainable development, increased density, and helps strengthen the UMED District identity. A goal of this Vision Element is, “*Analyze regulatory barriers to achieving desired development within the UMED District core and create partnerships to identify and resolve solutions to such regulatory barriers.*” The Implementation section of this goal includes, “*Work with stakeholders, design firms, engineers, and contractors to identify and implement ways of streamlining review and approval processes.*” The Institutional Master Plan process is intended to allow institutions greater development and design flexibility, which allows for new development in the district while cutting down on regulations.

The “Quality of the Built Environment” Vision Element includes UMED District Design Guidelines for a range of topics including buffers, building mass and orientation, native landscapes, pedestrian and bicycle access, etc. The APU Institutional Master Plan adheres to and expands upon these generic design guidelines.

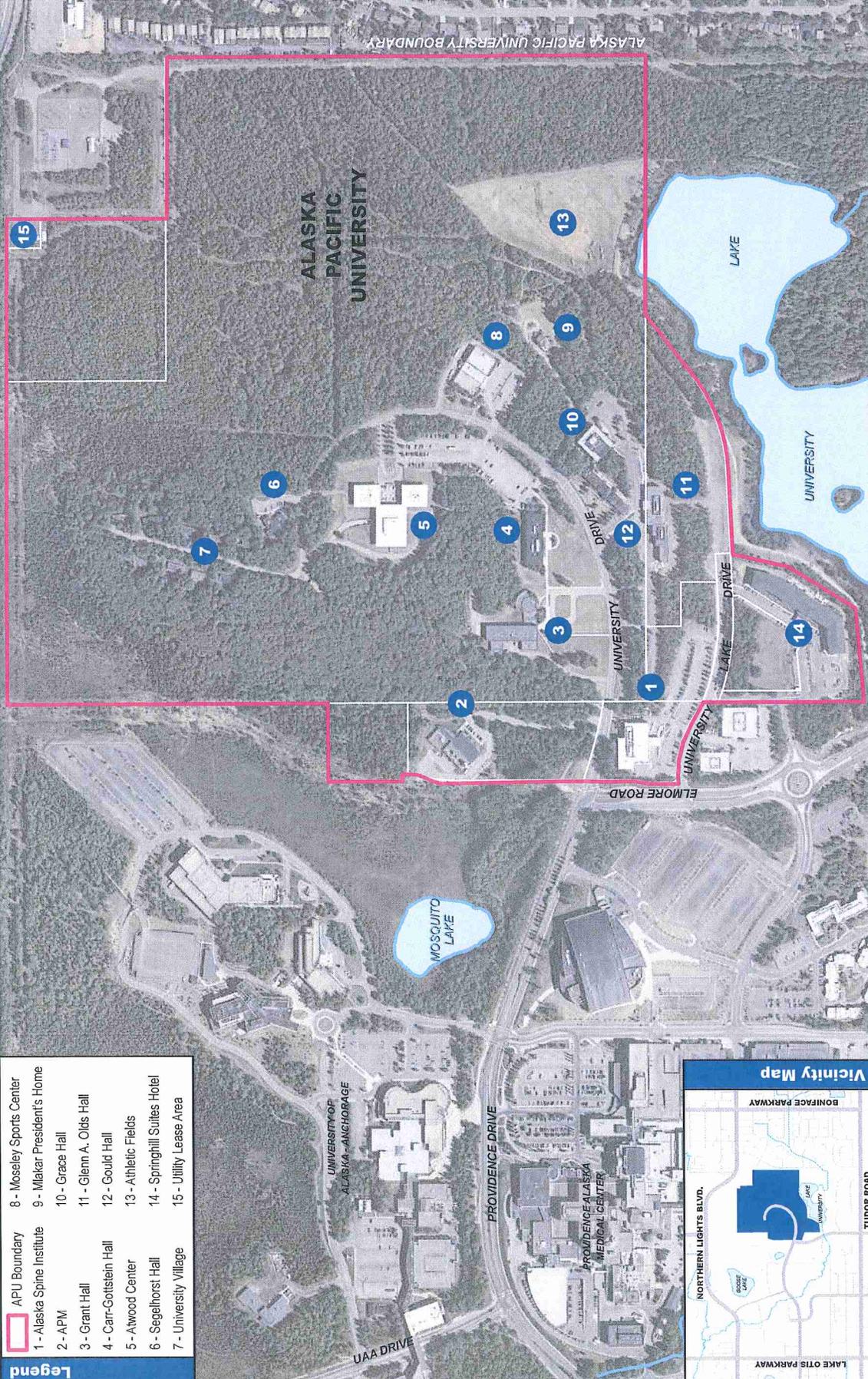
- *Economic Stability.* This element recommends meeting current demand and creating new demand for commercial development and housing, which will in turn activate the local economy. The APU Institutional Master Plan will allow for new areas of development that support the growth of the existing institutions in the UMED District while allowing for new commercial and residential development.
- *Growth and Change.* The background for this vision element recognizes that growth and change are inevitable within the UMED District. The APU Institutional Master Plan

outlines where potential developments will occur on the Endowment Development Priority lands. These developments will help to support APU's educational mission while serving the students, employees, and residents of the UMED District. The lands classified as Endowment Development Reserve are unlikely to be developed within the next ten years, which will allow for a gradual transition of the campus. The proposed natural buffers will ensure that future development of the endowment lands is setback from the University Lake Trail and Chester Creek Trail (Figure 13).

#### **4.0 SUMMARY**

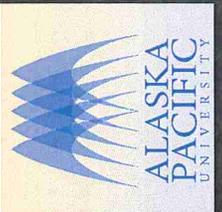
The UMED District provides countless services to the residents of adjacent neighborhoods and the greater Anchorage area including a variety of medical, educational, cultural, and recreational amenities. It is recognized that the growth of the institutions is an important part of maintaining a healthy employment center. APU lands represent a substantial portion of the developable lands remaining in the UMED District and as the community continues to grow, these lands cannot continue to be overlooked for future development.

The APU Institutional Master Plan will give APU flexibility to development their Endowment Development Lands in a manner that supports the educational missions of the university. It will also allow for a range of development that is compatible with the UMED District including commercial uses that are desired by local residents, students, and employees. This institutional master plan provides guidance to allow for future growth and development on the APU campus, while maintaining and supporting the quality of development in the UMED District. The development proposed is consistent with the *Anchorage 2020* comprehensive plan's designation of the area as a Major Employment Center and is compatible with the surrounding mixture of institutional and residential uses.



**Legend**

|   |                        |                              |
|---|------------------------|------------------------------|
|   | APU Boundary           | 8 - Mesaley Sports Center    |
| 1 | Alaska Spine Institute | 9 - Mlakar President's Home  |
| 2 | APM                    | 10 - Grace Hall              |
| 3 | Grant Hall             | 11 - Glenn A. Olds Hall      |
| 4 | Carr-Gottstein Hall    | 12 - Gould Hall              |
| 5 | Atwood Center          | 13 - Athletic Fields         |
| 6 | Segelhorst Hall        | 14 - Springhill Suites Hotel |
| 7 | University Village     | 15 - Utility Lease Area      |

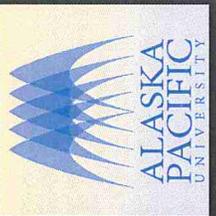
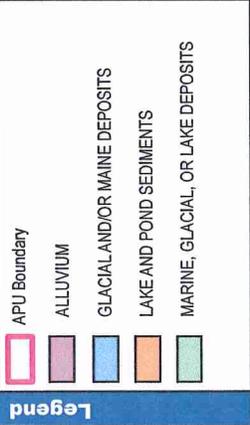
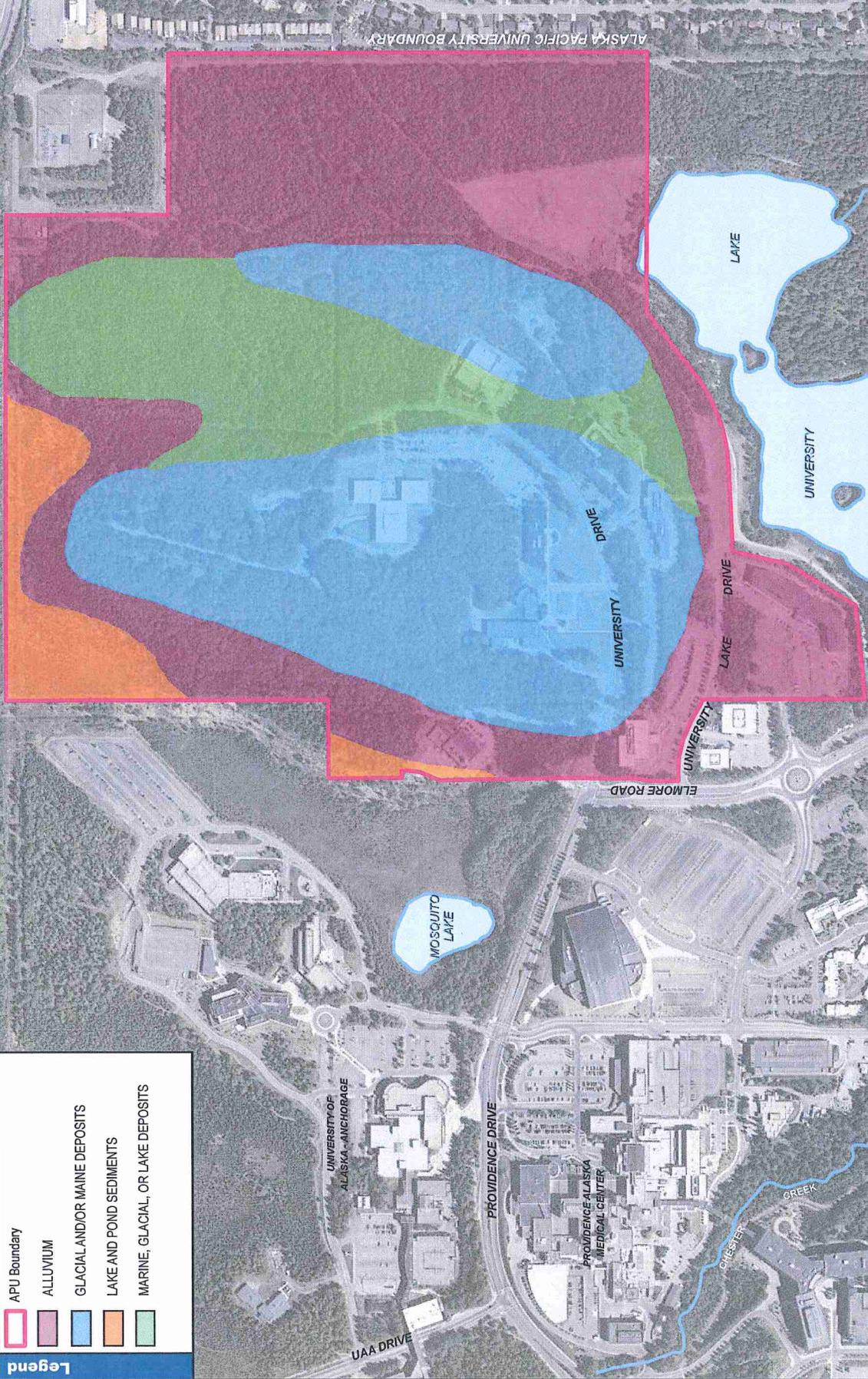


## VICINITY AND LOCATION MAP

### ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

**Figure 1**

March 2016



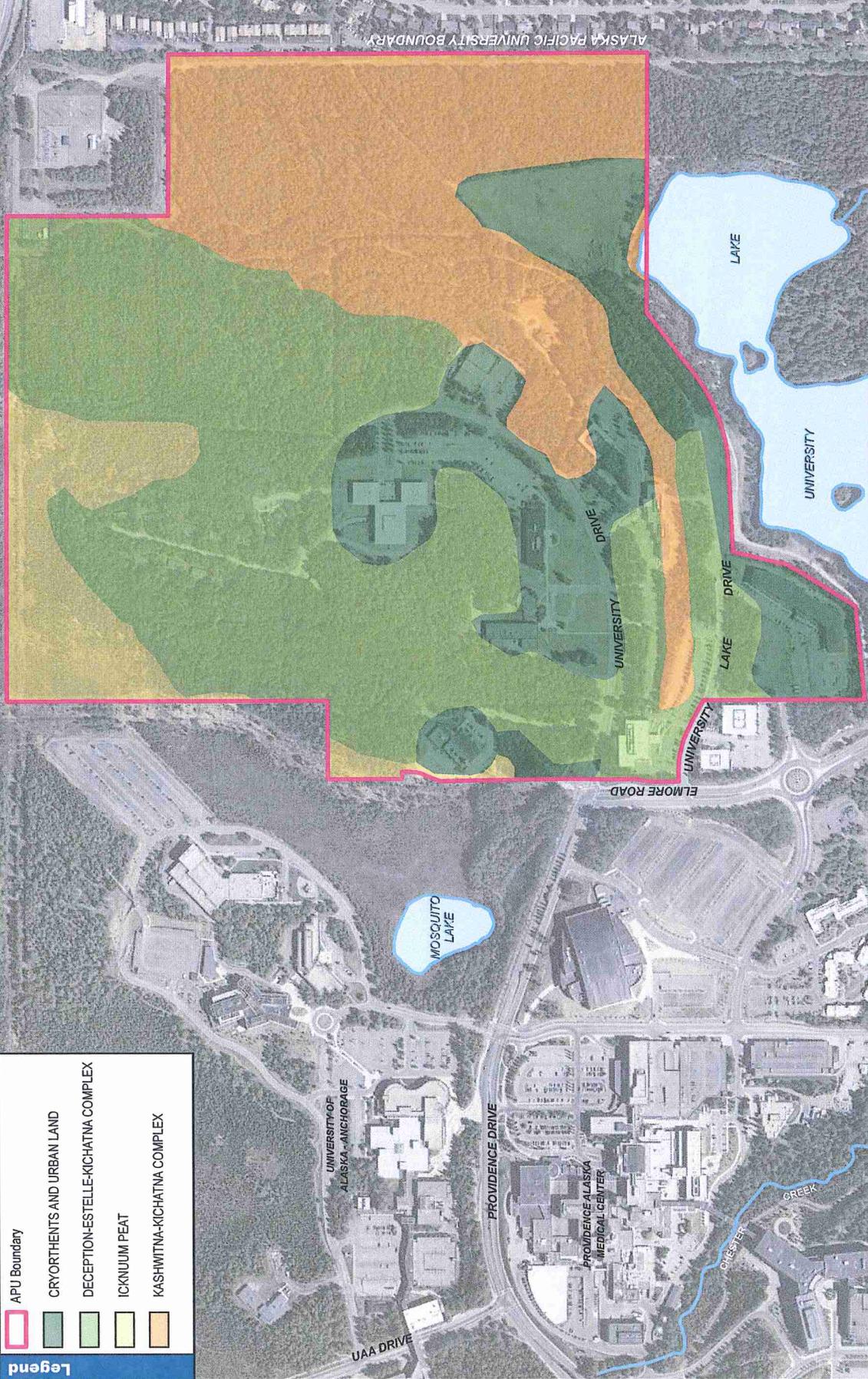
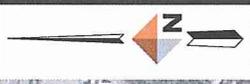
## SURFICIAL GEOLOGY

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

Figure 2

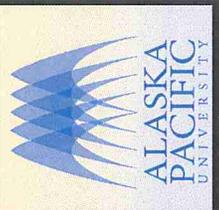
March 2016





**Legend**

- APU Boundary
- CRYORIENTHS AND URBAN LAND
- DECEPTION-ESTELLE-KICHATNA COMPLEX
- ICKNUUM PEAT
- KASHWITNA-KICHATNA COMPLEX



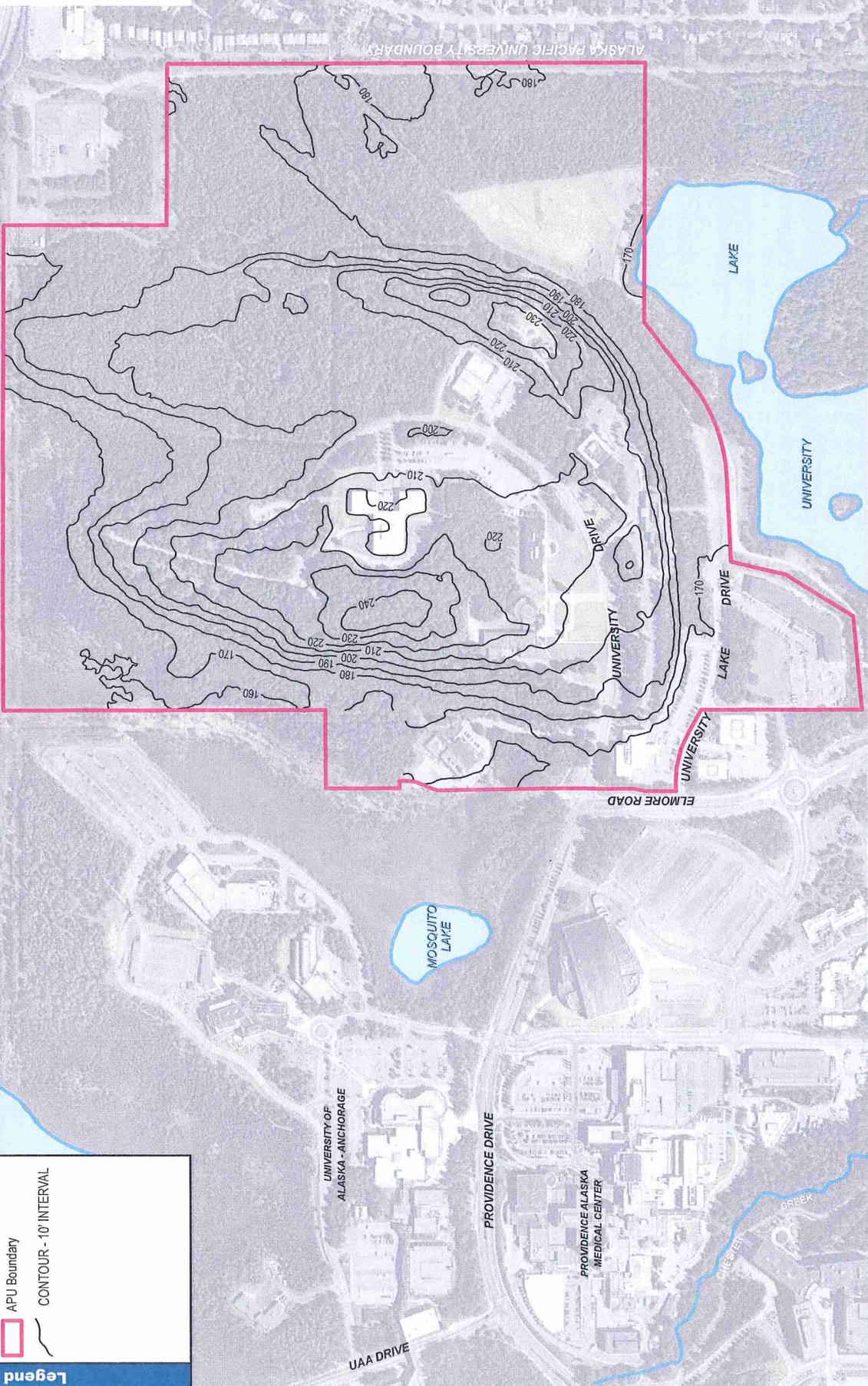
### SOILS MAP

## ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

Figure 3

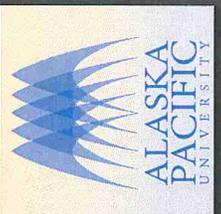
March 2016





**Legend**

-  APU Boundary
-  CONTOUR - 10' INTERVAL

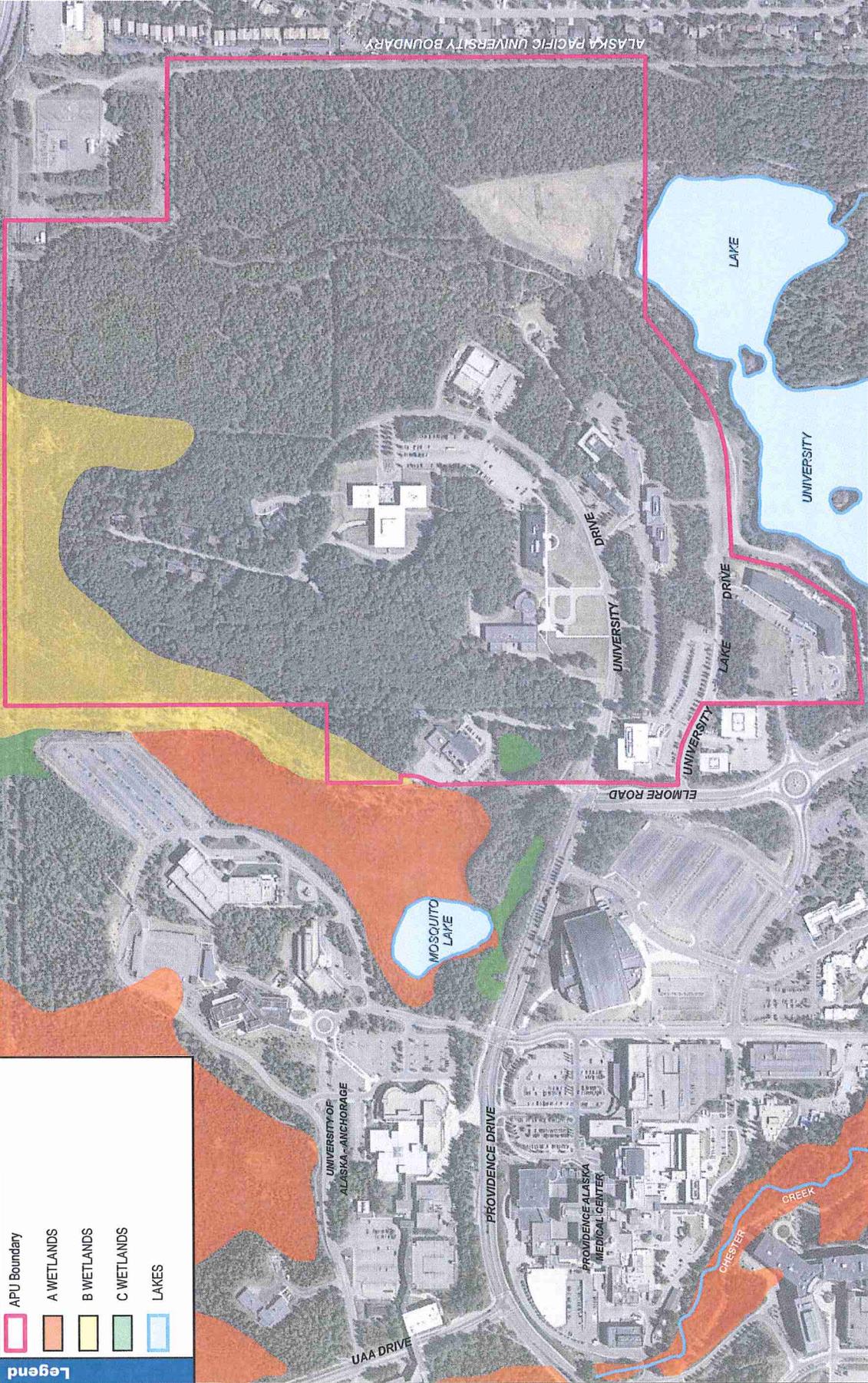


# TOPOGRAPHIC MAP

## ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

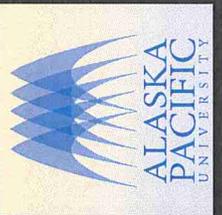
Figure 4  
 March 2016





**Legend**

- APU Boundary
- A WETLANDS
- B WETLANDS
- C WETLANDS
- LAKES



## WETLANDS AND WATER FEATURES

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

**Figure 5**

March 2016

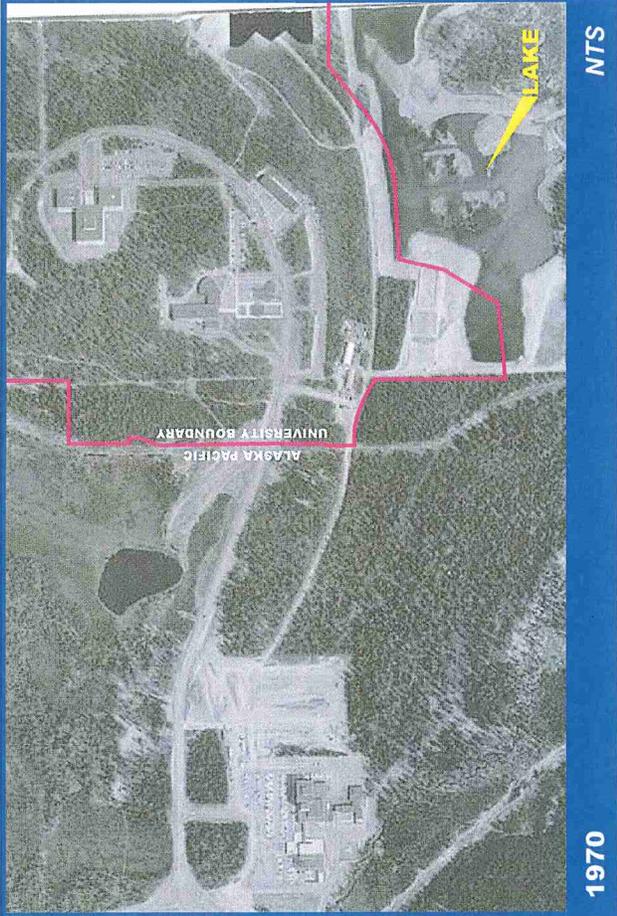
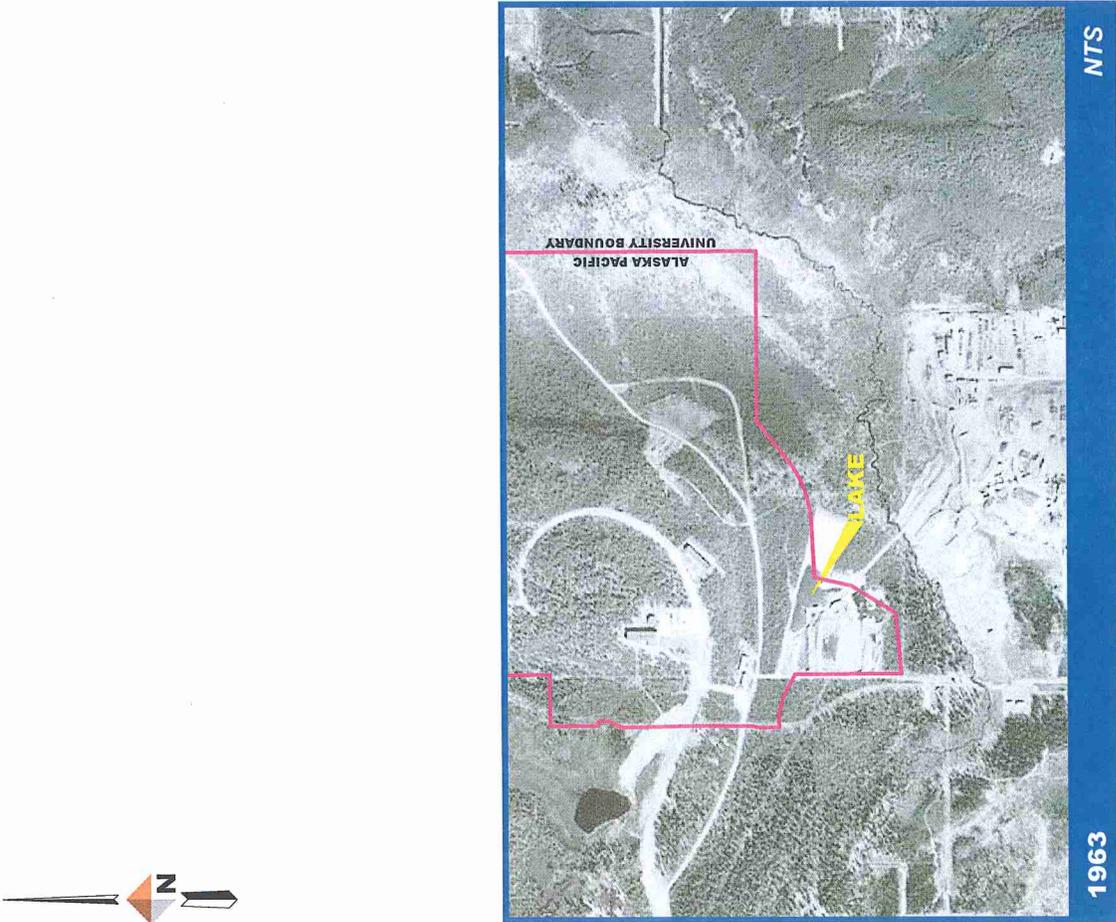


Figure 6

March 2016



## HISTORICAL AERIAL PHOTOGRAPHS (1963, 1970)

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE



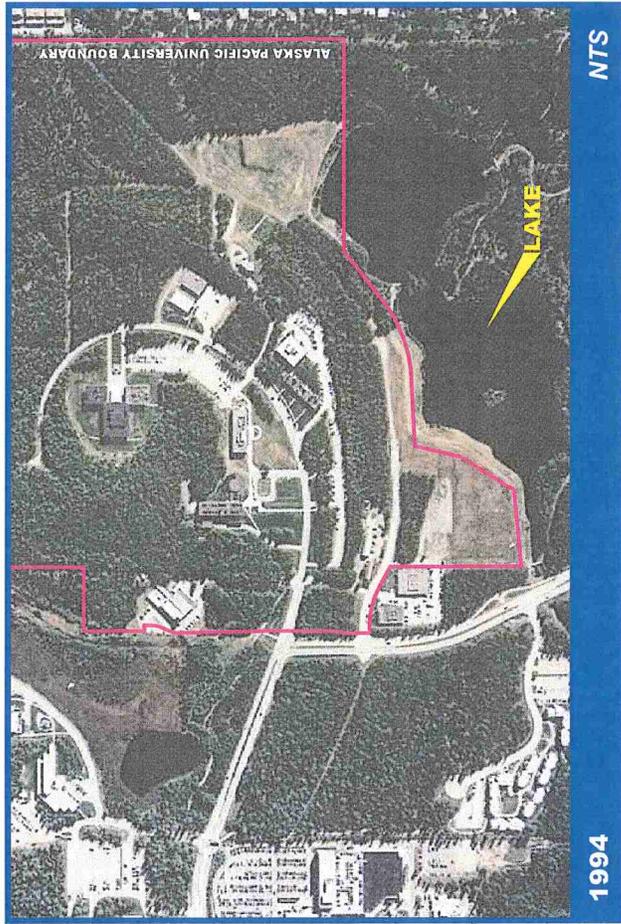
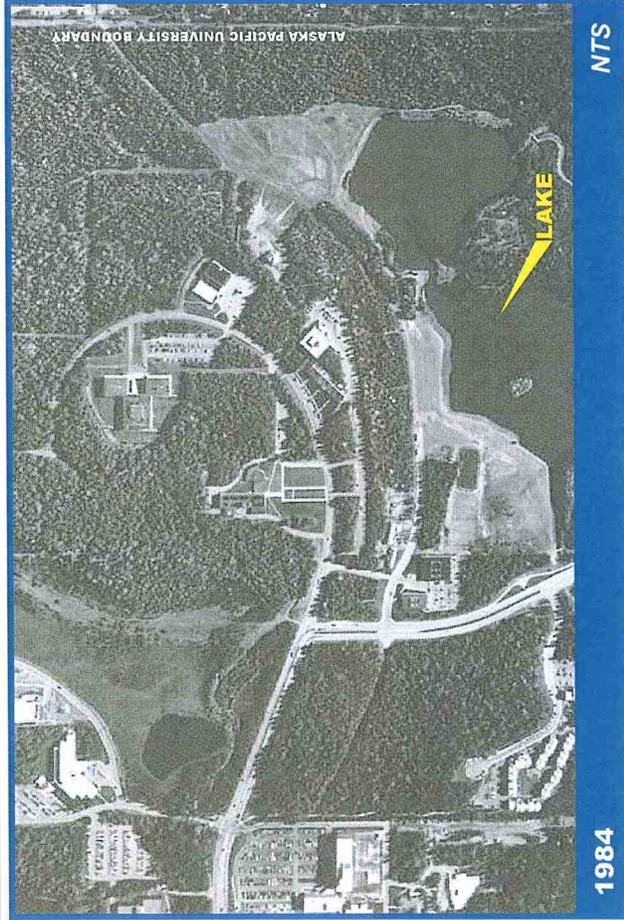


Figure 7

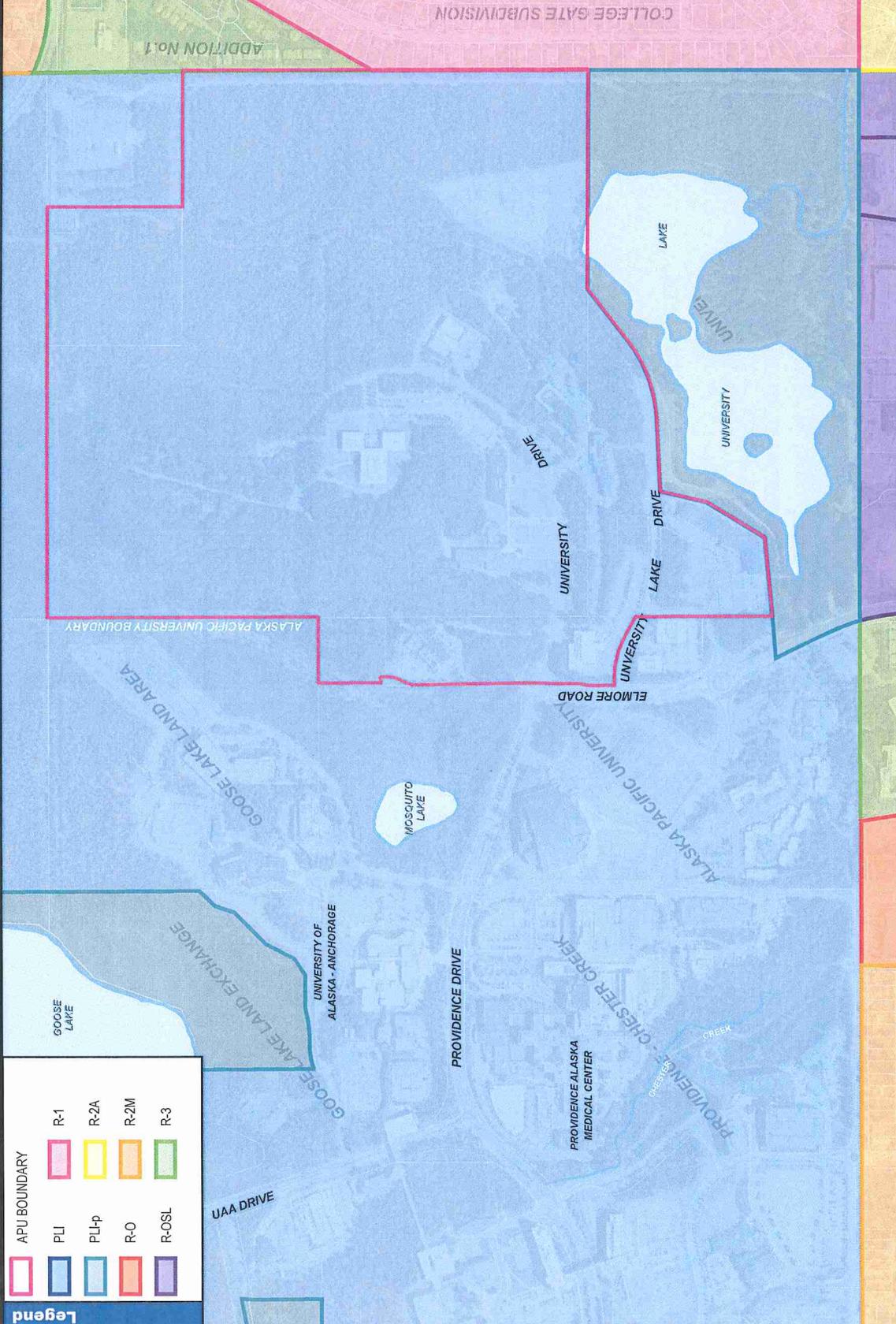
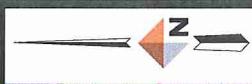
March 2016



## HISTORICAL AERIAL PHOTOGRAPHS (1984, 1994)

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE





**Legend**

|              |      |
|--------------|------|
| APU BOUNDARY | R-1  |
| PLI          | R-2A |
| PLI-p        | R-2M |
| R-O          | R-3  |
| R-OSL        |      |

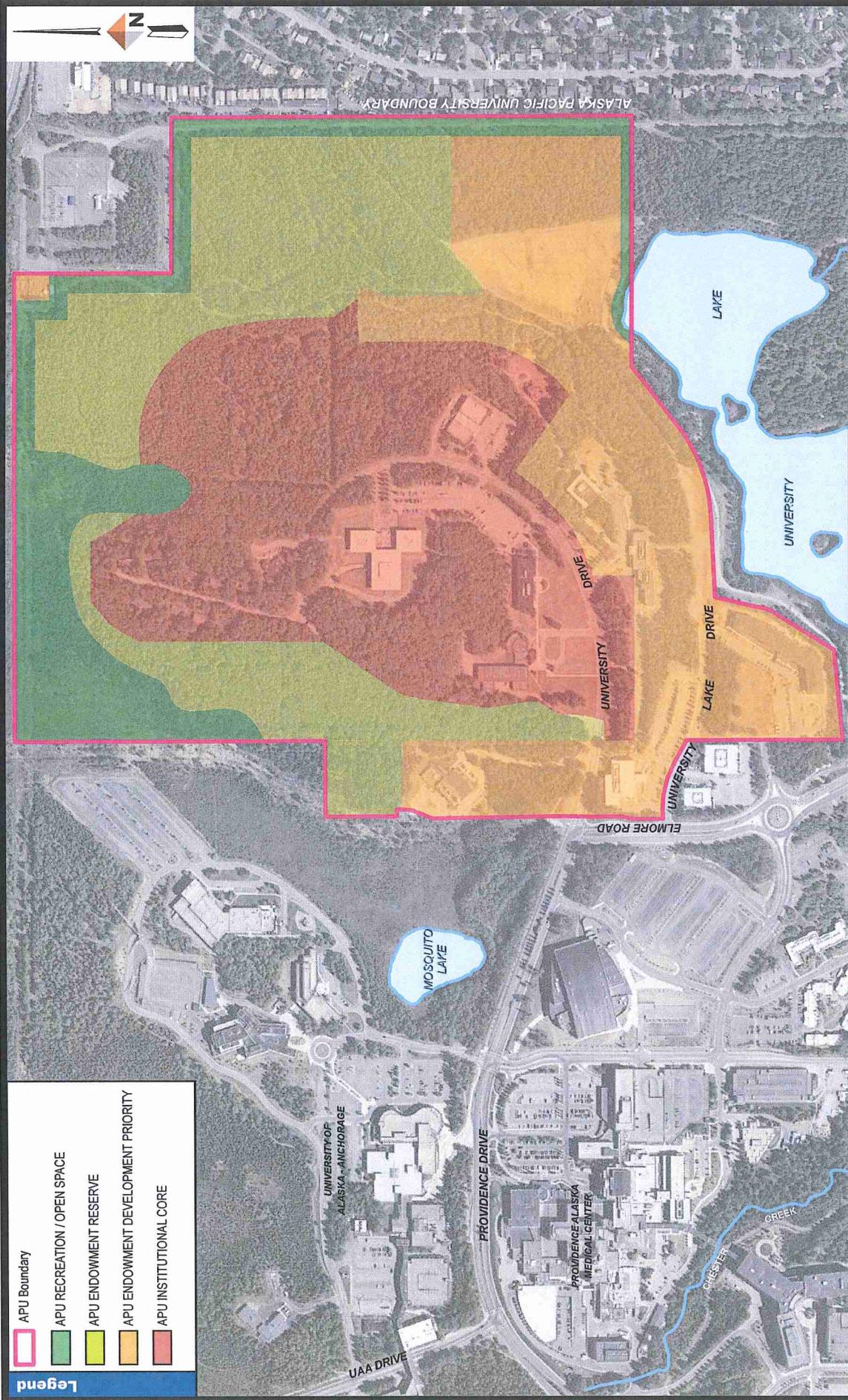
## ZONING MAP

# ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

Figure 8

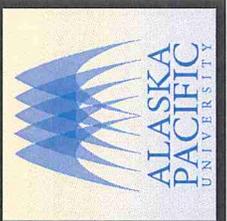
March 2016





**Legend**

- APU Boundary
- APU RECREATION / OPEN SPACE
- APU ENDOWMENT RESERVE
- APU ENDOWMENT DEVELOPMENT PRIORITY
- APU INSTITUTIONAL CORE

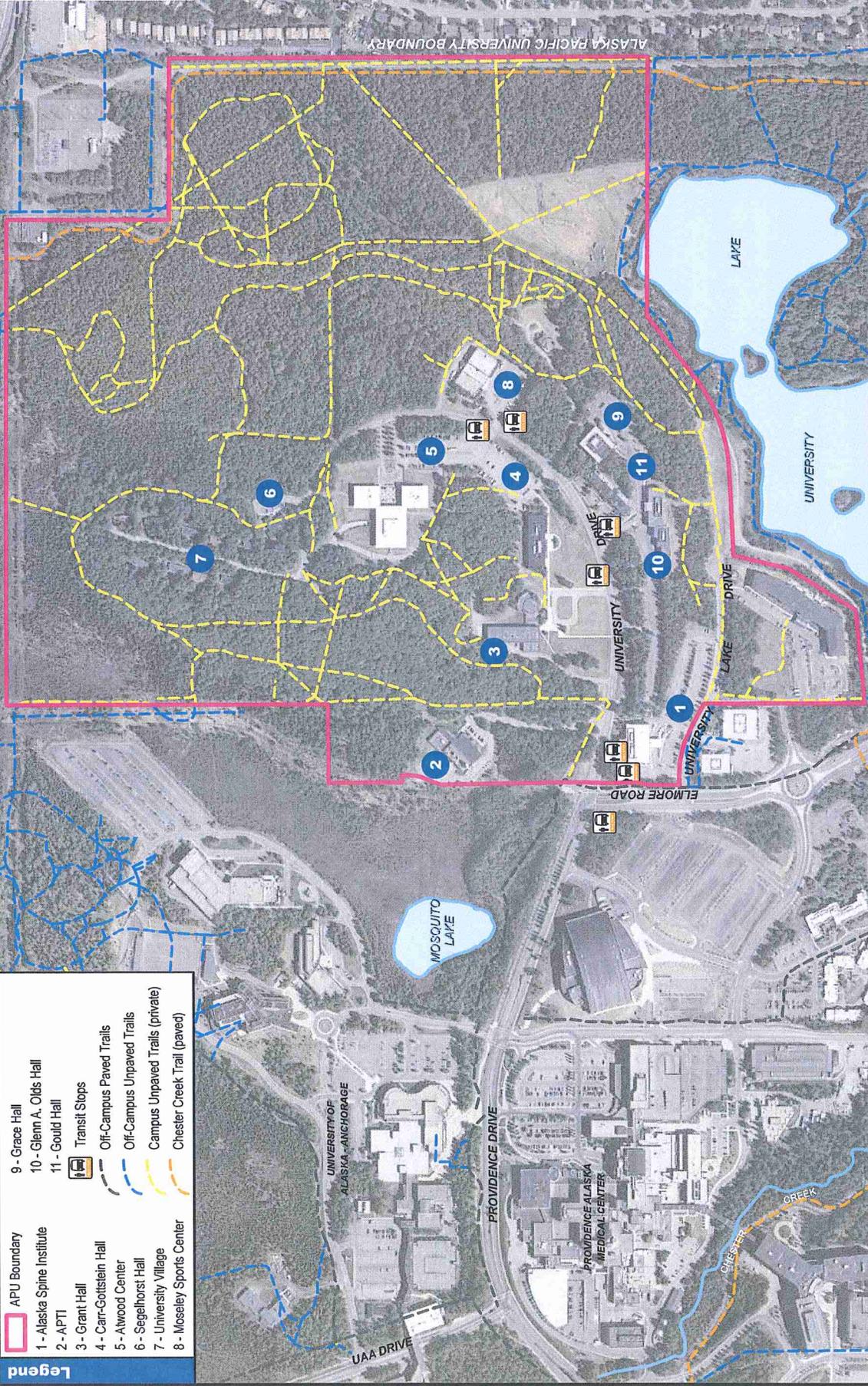


**2012 UMED PLAN DESIGNATIONS**

**ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE**

**Figure 9**

March 2016



- Legend**
- 9 - Grace Hall
  - 10 - Glenn A. Olds Hall
  - 11 - Gould Hall
  - Transit Stops
  - Off-Campus Paved Trails
  - Off-Campus Unpaved Trails
  - Campus Unpaved Trails (private)
  - Chester Creek Trail (paved)
- APU Boundary
  - 1 - Alaska Spine Institute
  - 2 - APTI
  - 3 - Grant Hall
  - 4 - Carr-Gottstein Hall
  - 5 - Alwood Center
  - 6 - Segelhorst Hall
  - 7 - University Village
  - 8 - Moseley Sports Center

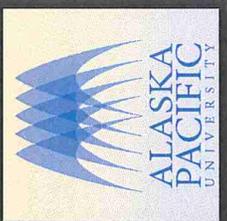
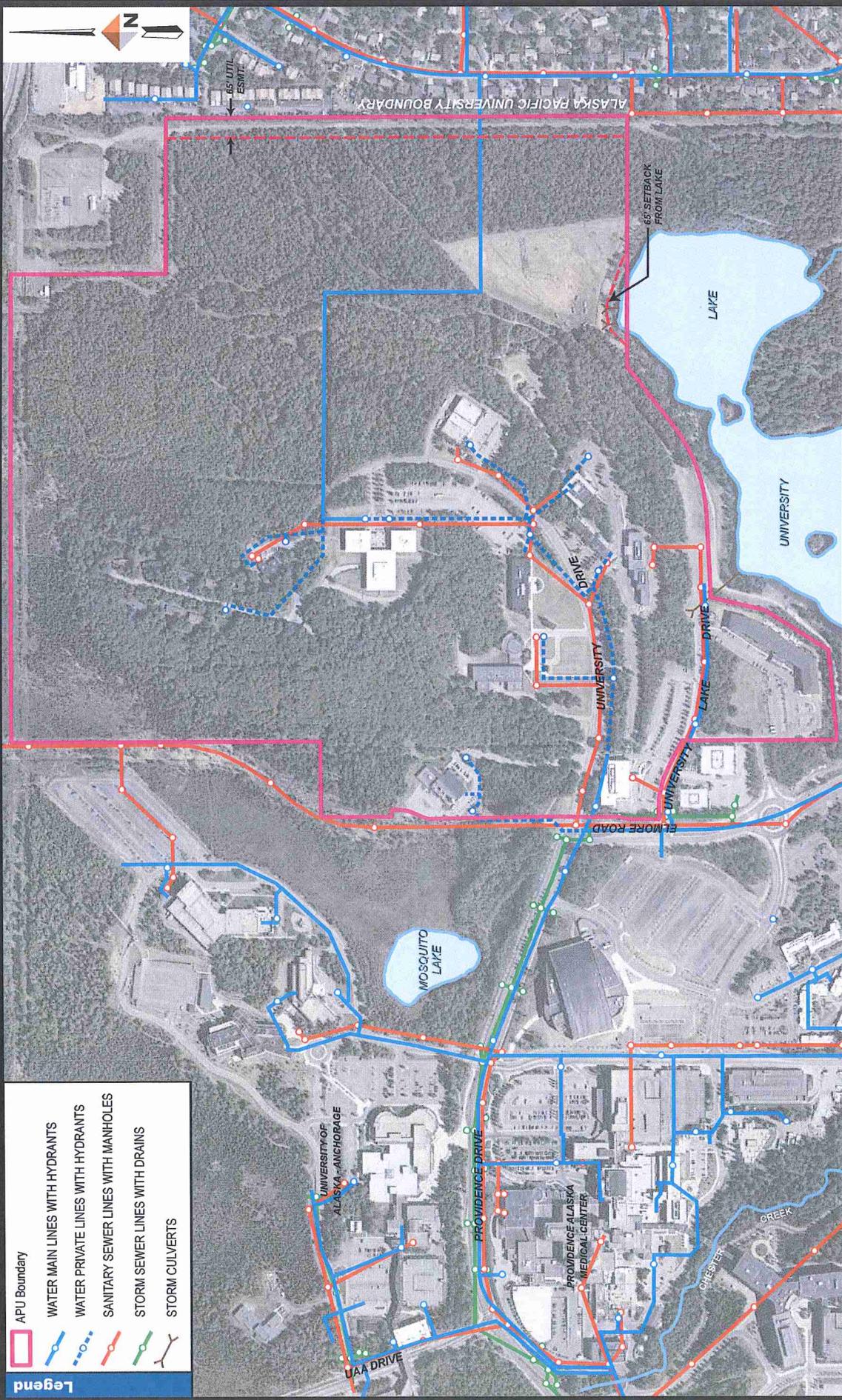


## PARKING, TRANSIT STOPS, AND CAMPUS TRAILS

Figure 10

March 2016





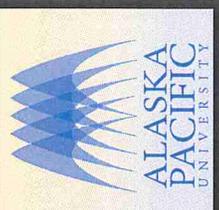
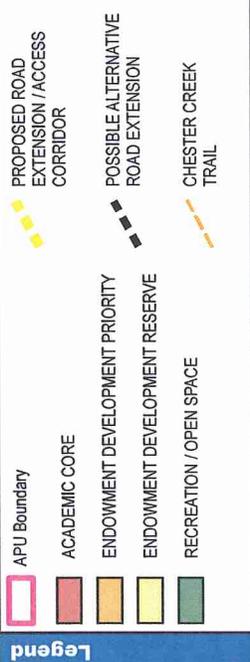
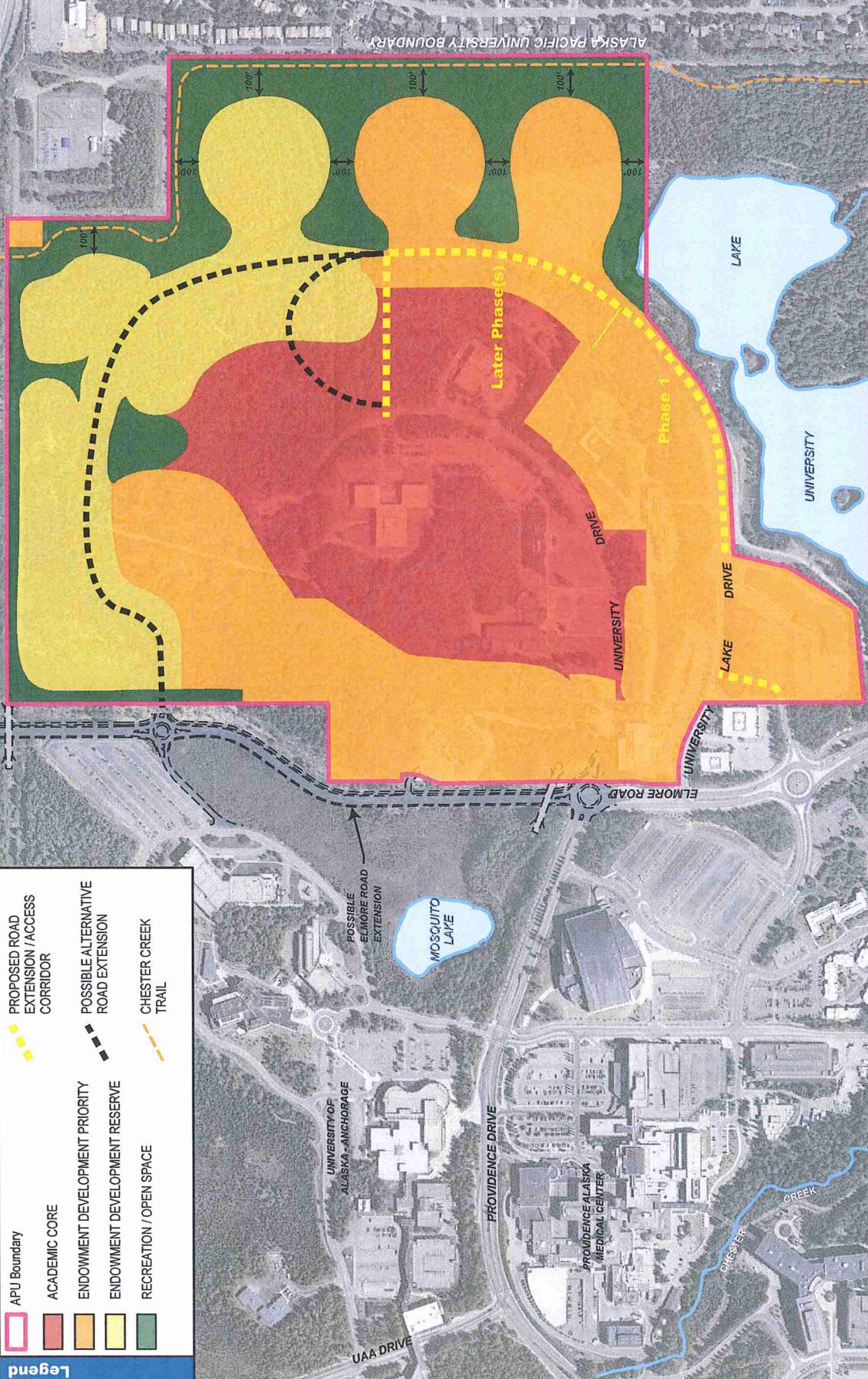
# WATER, SANITARY SEWER, AND STORM SEWER SYSTEMS

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

Figure 11

March 2016





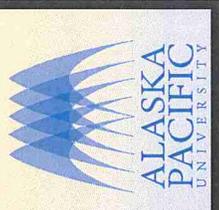
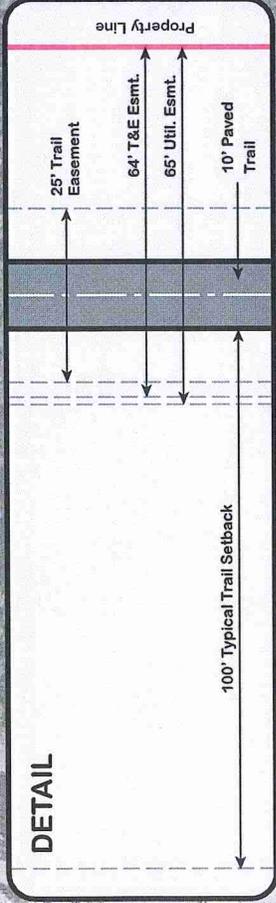
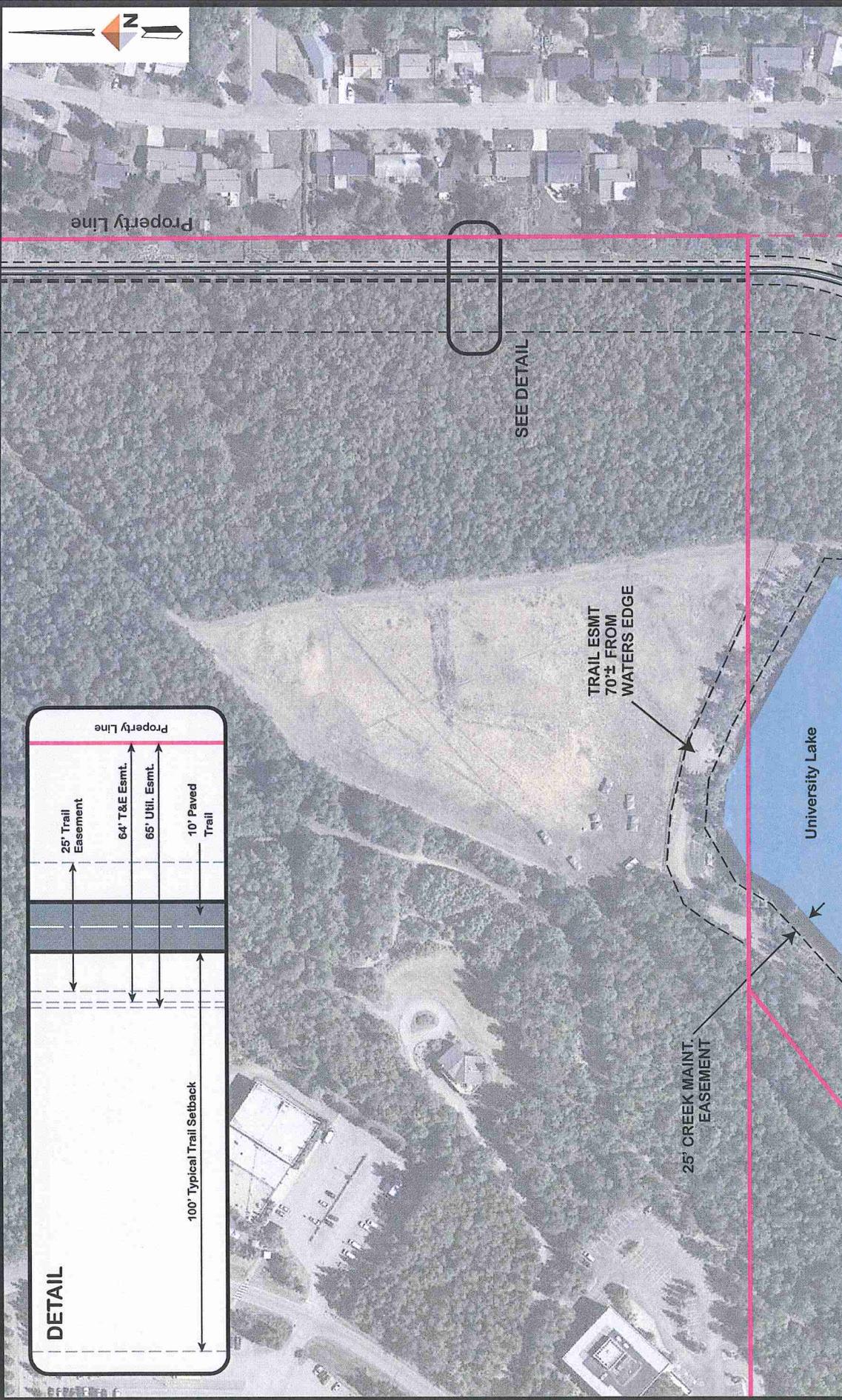
**PROPOSED APU CAMPUS LAND USE MAP**

**ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE**

**Figure 12**

**March 2016**





# CHESTER CREEK TRAIL BUFFER

ALASKA PACIFIC UNIVERSITY MASTER PLAN UPDATE

Figure 13

March 2016



## **APPENDIX A**

### APU Programs

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| Program  | Degree  | Degree Level                          | Department      | Audience  | Delivery          |
|--|---|---------------------------------------|-----------------|---|-------------------|
| <a href="#">Accelerated Business Administration &amp; Management / Master of Business Administration</a> | Bachelor of Arts, Master of Business Administration | Combined Bachelor's & Master's Degree | Business        | Professional Studies                              | Campus, eLearning |
| <a href="#">Alaska Native Executive Leadership Program</a>   | Graduate Certificate                                | Graduate Certificate                  | Business        | Alaska Native Executive Leadership                | Campus            |
| <a href="#">Alaska Native Governance</a>   | Bachelor of Arts                                    | Bachelor's Degree                     | Liberal Studies | Alaska Native Executive Leadership, Undergraduate |                   |

| Program                                      | Degree                            | Degree Level         | Department            | Audience                 | Delivery          |
|--|-----------------------------------|----------------------|-----------------------|--------------------------|-------------------|
| Business Administration                      | Associate of Arts                 | Associate's Degree   | Business              | Professional Studies     | Campus, eLearning |
| Business Administration & Management         | Bachelor of Arts                  | Bachelor's Degree    | Business              | Professional Studies     |                   |
| Certificate Option for Teachers K-8          | Graduate Certificate              | Graduate Certificate | Education             | Graduate                 | Campus            |
| Counseling Psychology                        | Bachelor of Arts                  | Bachelor's Degree    | Counseling Psychology | Undergraduate            |                   |
| Counseling Psychology                        | Master of Science                 | Master's Degree      | Counseling Psychology | Graduate                 | Campus            |
| Counseling Psychology                        | Doctor of Psychology              | Doctoral Degree      | Counseling Psychology | Graduate                 | Campus, eLearning |
| Creative & Professional Writing              | Bachelor of Arts                  | Bachelor's Degree    | Liberal Studies       | Undergraduate            |                   |
| Early Honors                                 |                                   |                      |                       | Early Honors Dual Credit | Campus            |
| Earth Sciences                               | Bachelor of Science               | Bachelor's Degree    | Environmental Science | Undergraduate            |                   |
| Environmental Science                        | Bachelor of Science               | Bachelor's Degree    | Environmental Science | Undergraduate            |                   |
| Environmental Science                        | Master of Science                 | Master's Degree      | Environmental Science | Graduate                 | Campus            |
| Graduate Studies in Entrepreneurship         | Graduate Certificate              | Graduate Certificate | Business              | Graduate                 | Campus            |
| Graduate Studies in Investments              | Graduate Certificate              | Graduate Certificate | Business              | Graduate                 | Campus            |
| Health Services Administration Concentration | Master of Business Administration | Master's Degree      | Business              | Graduate                 |                   |
| Information & Communication Technology       | Executive Master of               | Master's Degree      | Business              | Graduate                 |                   |

| Program   | Degree                                      | Degree Level                                     | Department                 | Audience           | Delivery |
|---|---|--|----------------------------|--------------------|----------|
|   | Business Administration                     |  |                            |                    |          |
| <a href="#">Liberal Studies</a>   | Bachelor of Arts                            | Bachelor's Degree                                | Liberal Studies            | Undergraduate      |          |
| <a href="#">Marine Biology</a>  | Bachelor of Science                         | Bachelor's Degree                                | Environmental Science      | Undergraduate      |          |
| <a href="#">Master of Arts Program</a>  | Master of Arts                              | Master's Degree                                  | Liberal Studies            | Graduate           |          |
| <a href="#">Master of Business Administration</a>                               | Master of Business Administration           | Master's Degree                                  | Business                   | Graduate           |          |
| <a href="#">Non-Degree Seeking</a>  |   |  |                            | Non-Degree Seeking |          |
| <a href="#">Outdoor &amp; Environmental Education</a>                           | Master of Science                           | Master's Degree                                  | Education, Outdoor Studies | Graduate           | Campus   |
| <a href="#">Outdoor &amp; Environmental Education with Teaching Certificate</a> | Graduate Certificate, Master of Science     | Combined Graduate Certificates & Master's Degree | Education, Outdoor Studies | Graduate           | Campus   |
| <a href="#">Outdoor Studies</a>   | Bachelor of Arts                            | Bachelor's Degree                                | Outdoor Studies            | Undergraduate      |          |
| <a href="#">Strategic Leadership</a>  | Executive Master of Business Administration | Master's Degree                                  | Business                   | Graduate           |          |
| <a href="#">Sustainability Studies</a>  | Bachelor of Arts                            | Bachelor's Degree                                | Liberal Studies            | Undergraduate      |          |

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**APPENDIX B**

Planning and Zoning Commission Resolution

**MUNICIPALITY OF ANCHORAGE**  
**PLANNING AND ZONING COMMISSION RESOLUTION NO. 2012-005**

A RESOLUTION RECOMMENDING APPROVAL OF AN AMENDMENT TO THE *U-MED/UNIVERSITIES AND MEDICAL DISTRICT FRAMEWORK MASTER PLAN (U-MED PLAN)* ADDING FOUR LAND USE CATEGORIES AND CHANGING THE RECOMMENDED PLAN MAP AFFECTING LANDS ON ALASKA PACIFIC UNIVERSITY.

(Case No. 2011-108)

---

WHEREAS, the Planning and Zoning Commission is empowered under AMC 21.05.040 to review and make recommendations on any modification to the comprehensive plan prior to Assembly action on the amendment. The plan may be reviewed when land use decisions and adopted studies and plans make changes affecting the plan; and

WHEREAS, the *U-MED/Universities and Medical District Framework Master Plan (U-Med Plan)* was adopted by the Assembly as an element of *Anchorage 2020—Anchorage Bowl Comprehensive Plan (Anchorage 2020)* in October 2003 (AO 2003-129)(aa) and revised in June 2009 (AO 2009-69); and

WHEREAS, notices of the proposed plan amendment were published and a public hearing was held on October 10, 2011 and continued to February 6, 2012.

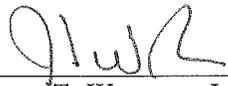
NOW, THEREFORE, BE IT RESOLVED, by the Municipal Planning and Zoning Commission that:

- A. The Commission makes the following findings of fact:
  1. This clarifies the previous commission's action that the original intent of the *U-MED Plan* is to serve a guide for development, providing a general sense of development for the area. It is not intended to restrict development.
  2. The modification to the definition of APU Recreation/Open Space is a better description of what is intended in the APU Master Plan.
  3. The amendment is consistent with the *U-MED Plan* as amended and the Anchorage 2020 Comprehensive Plan.
  4. The Commission recommended approval of the amendment by a unanimous vote: 6-yea, 0-nay.
- B. The Commission recommends forwarding a recommendation for approval the following plan amendment to the Anchorage Assembly:
  1. Add the following four land use classifications to the recommended land use categories on page 37 of the *U-Med Plan*:

- a) APU Recreation/Open Space: This land use category includes land intended for open space and recreation purposes. The intent for this land is to retain this area in its natural state, recognizing that utilities, road corridors and other improvements necessary to university expansion may be necessary within these areas. A buffer area of 25-feet measured from the western edge of the current trail on the eastern boundary of the site shall be provided. Site plan reviews in the future shall utilize this definition as part of the review.
  - b) APU Institutional Core: This land use category includes all of the educational and support facilities associated with the university mission. This includes classrooms, administrative facilities, recreation facilities, and residential facilities for students, faculty and staff.
  - c) APU Endowment Development Priority: This is land that has already been developed, is adjacent to developed areas, or has access, utilities and other infrastructure to support development. APU endowment lands are developed to provide revenue to support APU's institutional mission. Designation as endowment land is not intended to limit the potential future use of this land for academic or other accessory uses to the overall university operations.
  - d) APU Endowment Reserve: This includes lands that are generally suitable for development, but do not currently have access, utilities or other infrastructure and is not expected to be developed in the near future. Sections of these areas may have some environmental constraints and additional buffer areas may be considered or incorporated into future developments. Designation as endowment land is not intended to limit the potential future use of this land for academic or other accessory uses to the overall university operations.
2. Replace the Recommended Plan Integrated Campuses Map on page 45 of the *U-Med Plan* with the map in Exhibit A.

PASSED AND APPROVED by the Anchorage Planning and Zoning Commission on the 6th day of February 2012.

ADOPTED by the Anchorage Municipal Planning and Zoning Commission this 12<sup>th</sup> day of March, 2012. This written decision/resolution of the Planning and Zoning Commission is final and any party may appeal it within twenty (20) days to the Board of Adjustment pursuant to Anchorage Municipal Code 21.30.030.

  
\_\_\_\_\_  
Jerry T. Weaver, Jr.  
Secretary

  
\_\_\_\_\_  
Connie Yoshimura  
Chair

(2011-108)

**APPENDIX C**

2012 UMED Anchorage Ordinance 2012-79

Submitted by: Chair of the Assembly at the  
Request of the Mayor  
Prepared by: Community Development  
Department, Planning  
Division  
For Reading: July 24, 2012

CLERK'S OFFICE

**APPROVED**

Date: 8-21-12

**ANCHORAGE, ALASKA**

**AO No. 2012-79**

1 **AN ORDINANCE OF THE MUNICIPALITY OF ANCHORAGE AMENDING THE**  
2 **RECOMMENDED PLAN MAP AND ADDING FOUR NEW LAND USE**  
3 **CATEGORIES TO THE U-MED/UNIVERSITIES AND MEDICAL DISTRICT**  
4 **FRAMEWORK MASTER PLAN, AMENDING ANCHORAGE MUNICIPAL**  
5 **CODE SECTION 21.05.030A., AND AMENDING AO 2006-172,**  
6 **ATTACHMENT A, TO REVISE PROVISIONALLY ADOPTED ANCHORAGE**  
7 **MUNICIPAL CODE SECTION 21.01.080.**

8  
9 (Planning and Zoning Commission Case 2011-108)

10 **THE ANCHORAGE ASSEMBLY ORDAINS:**

11  
12 **Section 1.** The recommended plan map for the *U-Med/Universities and*  
13 *Medical District Framework Master Plan*, dated October 21, 2003, and amended  
14 June 23, 2009 by AO 2009-69, an element of the *Anchorage 2020—Anchorage*  
15 *Bowl Comprehensive Plan*, is amended as recommended by the Planning and  
16 Zoning Commission in Resolution No. 2012-005, attached hereto and  
17 incorporated herein by reference. The specific amendments to the plan map are  
18 described as follows:

- 19  
20 1. Add the following four land use classifications to the recommended  
21 land use categories on page 37:
- 22
- 23 a. APU Recreation/Open Space: This land use category  
24 includes land intended for open space and recreation  
25 purposes. The intent for this land is to retain this area in its  
26 natural state, recognizing that utilities, road corridors and  
27 other improvements necessary to university expansion may  
28 be necessary within these areas. A buffer area of 25 feet  
29 measured from the western edge of the current trail on the  
30 eastern boundary of the site shall be provided. Site plan  
31 reviews in the future shall utilize this definition as part of the  
32 review.
- 33
- 34 b. APU Institutional Core: This land use category includes all  
35 of the educational and support facilities associated with the  
36 university mission. This includes classrooms, administrative  
37 facilities, recreation facilities, and residential facilities for  
38 students, faculty, and staff.

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- c. APU Endowment Development Priority: This is land that has already been developed, is adjacent to developed areas, or has access, utilities and other infrastructure to support development. APU endowment lands are developed to provide revenue to support APU's institutional mission. Designation as endowment land is not intended to limit the potential future use of this land for academic or other accessory uses to the overall university operations.
  
- d. APU Endowment Reserve: This includes lands that are generally suitable for development, but do not currently have access, utilities, or other infrastructure and are not expected to be developed in the near future. Sections of these areas may have some environmental constraints and additional buffer areas may be considered or incorporated into future developments. Designation as endowment land is not intended to limit the potential future use of this land for academic or other accessory uses to the overall university operations.

2. Replace the recommended plan map on page 45 with Exhibit A.

**Section 2.** Anchorage Municipal Code section 21.05.030A. is amended as follows (*the remainder of the subsection is not affected and therefore not set out*):

**21.05.030 Elements.**

The comprehensive plan consists of the following elements, which are incorporated in this chapter by reference. While they may be valid planning tools, plans or other elements that are not listed below or incorporated into the comprehensive plan elsewhere in this Code are not official elements of the comprehensive plan. If elements of the comprehensive plan conflict, the element most recently adopted shall govern.

A. Anchorage Bowl.

\*\*\*      \*\*\*      \*\*\*

- 7. U-Med/Universities and Medical District Framework Master Plan dated October 21, 2003, and plan map amendments approved June 23, 2009 and **August 21, 2012.** (AR No. 83-195; AO No. 2003-129, § 2, 10-21-03; AO 2009-69 § 6-23-09; **AO 2012-79 § 8-21-12).**

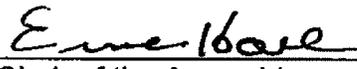
\*\*\*      \*\*\*      \*\*\*

1 **Section 3.** Attachment A of Anchorage Ordinance 2006-172 adopting  
2 Anchorage Municipal Code section 21.01.080B.1., Table 21.01-1:  
3 Comprehensive Plan Elements, is amended to read as follows (*the remainder of*  
4 *the section is not affected and therefore not set forth*):  
5  
6

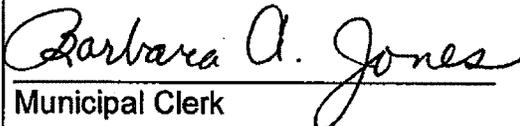
| TABLE 21.01-1: COMPREHENSIVE PLAN ELEMENTS |   |                       |   |
|--|---|-----------------------|---|
| Area/Topic                                 | Plan  | Adoption Date [1]     | Amendments  |
| Anchorage Bowl                             | U-MED/University and [-] Medical District Framework Master Plan | AO 2003-129; 10-21-03 | AO 2009-69; 6-23-09;<br>AO 2012-79; August 21, 2012 |

7  
8  
9 **Section 4.** This ordinance shall become effective immediately upon passage  
10 and approval by the Assembly.

11  
12 PASSED AND APPROVED by the Anchorage Assembly this 21st day  
13 of August, 2012.  
14

15  
16   
17 \_\_\_\_\_  
18 Chair of the Assembly

18 ATTEST:

19  
20  
21   
22 \_\_\_\_\_  
23 Municipal Clerk  
24  
25  
26

(Case 2011-108)

# U-MED PLAN AMENDMENT ASSEMBLY ORDINANCE:

## KEY

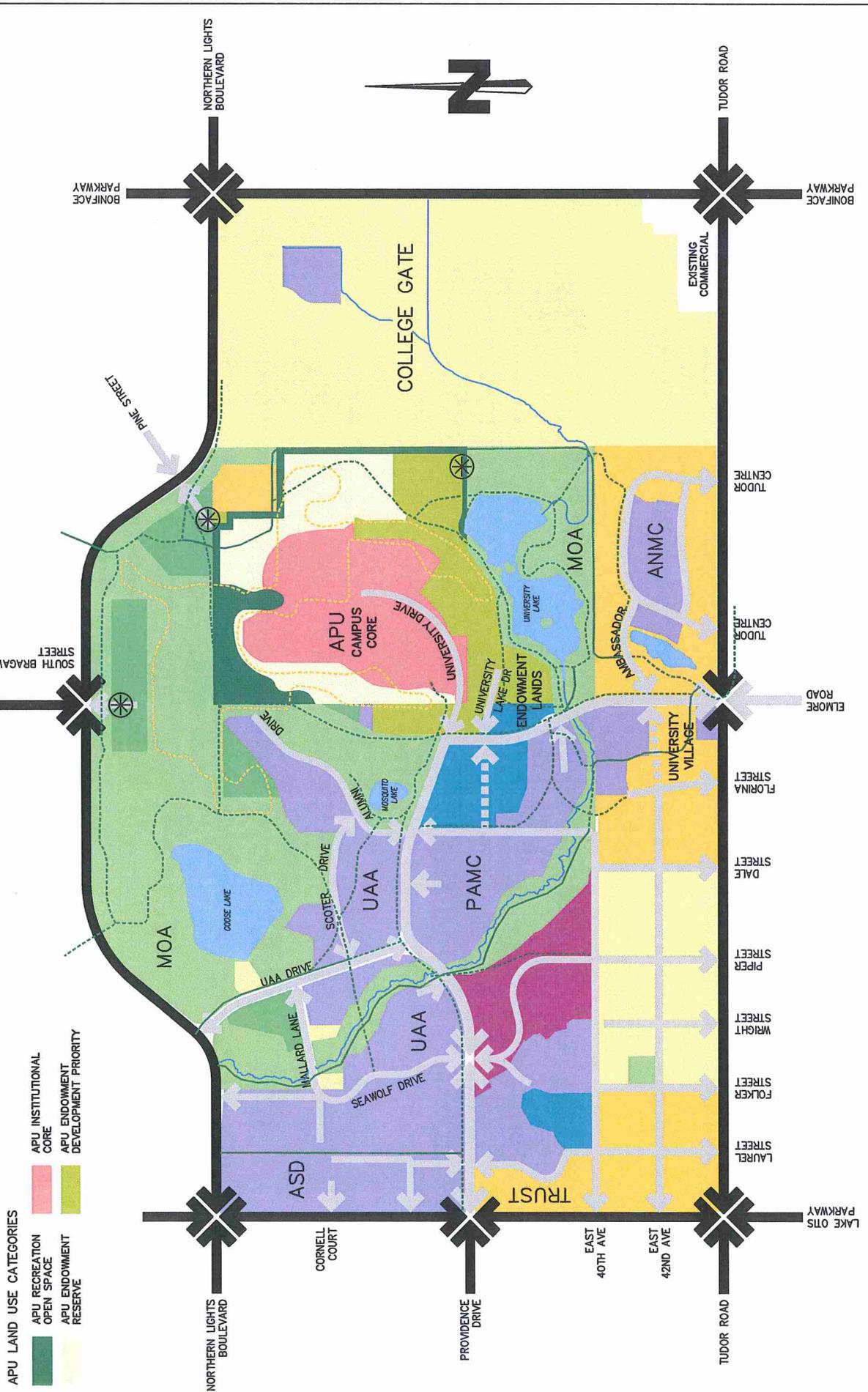
- PREDOMINANT LAND USES**
- PRESERVATION OPEN SPACE
  - DEVELOPMENT RESERVE
  - DEVELOPMENT PRIORITY
  - REDEVELOPMENT PRIORITY

- APU LAND USE CATEGORIES**
- APU RECREATION OPEN SPACE
  - APU ENDOWMENT RESERVE
  - APU INSTITUTIONAL CORE
  - APU ENDOWMENT DEVELOPMENT PRIORITY

- REGIONAL CIRCULATION**
- REGIONAL CIRCULATION
  - DISTRICT CIRCULATION
  - DISTRICT CIRCULATION RESERVE

- APU SKI TRAIL**
- APU SKI TRAIL
  - EXISTING TRAIL
  - PROPOSED OR ENHANCED TRAIL

- POSSIBLE ACCESS POINTS**
- POSSIBLE ACCESS POINTS



**APPENDIX D**

Draft UMED District Plan Land Use Map

## KEY POLICY DIRECTIONS

The Land Use Plan Map identifies the intentions for future land use types and intensities of development within the UMED District planning area. The accompanying Table explains the implementation zoning districts most compatible with each land use designation along with the range of residential dwelling units that this plan intends per gross acre of residential and/or mixed-use areas.

The table is color-coded with the corresponding land use plan map categories. A description of each land use category follows with the implementing zoning to further explain how the UMED District may be developed.

Dwelling units per gross acre (DUA) is a measurement of the gross property size, which includes in the calculation of that gross acre of property the following:

- The area that will be occupied by the development,
- Any required public rights-of-way,
- Any required utility easements, and
- Any other non-residential uses that may require a dedication from the gross area of the property

| LAND USE PLAN MAP DESIGNATIONS     | ZONING DISTRICTS      | RANGE OF RESIDENTIAL DENSITIES |
|------------------------------------|-----------------------|--------------------------------|
| <b>RESIDENTIAL</b>                 |                       |                                |
| Low Intensity, Detached            | R1-A                  | 1-5 DUA                        |
| Low Intensity, Attached & Detached | R-2A, R-2D            | 5-10 DUA                       |
| Low to Medium Intensity            | R-2M,                 | Up to 15 DUA                   |
| Medium Intensity                   | R-3                   | Up to 35 DUA                   |
| High Intensity Mixed Use           | R-4A                  | >40 DUA                        |
| <b>COMMERCIAL</b>                  |                       |                                |
| Commercial Corridor                | B-3                   |                                |
| Office   Low Intensity             | RO-Residential Office | Up to 40 DUA                   |
| Neighborhood Commercial Center     | B-1A                  | > 35 DUA                       |
| Community Commercial Center        | B-3                   | 40+ DUA                        |
| UMED Village (Location TBD)        | B-1A                  | >35 DUA                        |
| <b>COMMUNITY FACILITY</b>          |                       |                                |
| School and Community Institutional | PLI                   |                                |
| Major Institutional                | PLI                   |                                |
| Public Utility / Facility          | PLI                   |                                |
| <b>PARK &amp; NATURAL RESOURCE</b> |                       |                                |
| Parks                              | PR, PLI               |                                |
| Natural Area                       | Varied                |                                |

Figure 52. Zoning Categories

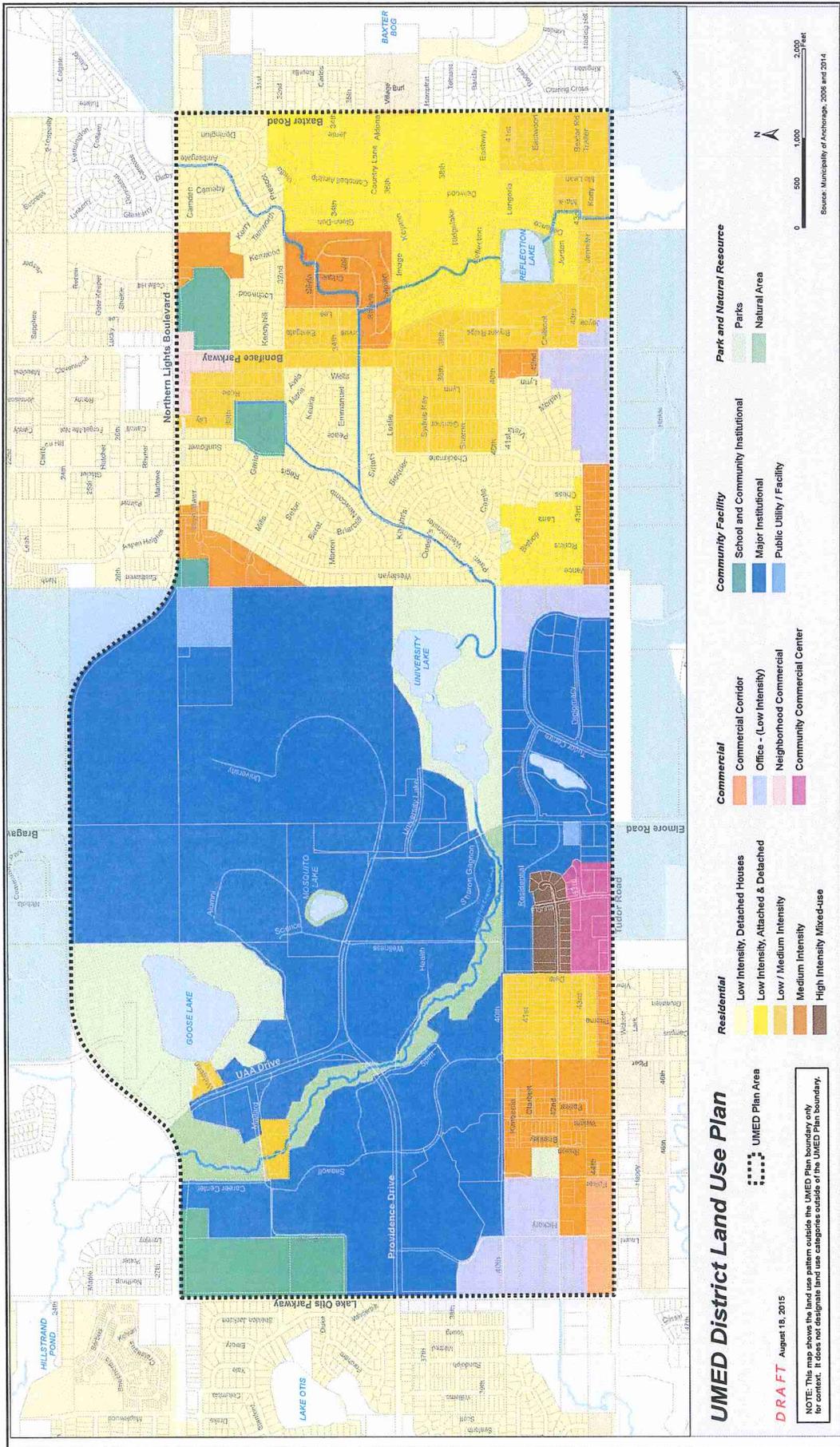


Figure 53. UMED land use plan map

**APPENDIX E**

2011 APU Parking Study



May 6, 2011  
W.O. 60683.01

Stephanie L. Mormilo, P.E.  
Municipal Traffic Engineer

and

Mr. Jerry T. Weaver, Jr.  
Director  
Municipality of Anchorage  
4700 Elmore Road  
Anchorage, Alaska 99507

Subject: **Revised** Alaska Pacific University Campus-Wide Parking Variance

Dear Ms. Mormilo and Mr. Weaver:

The purpose of this letter is to summarize the results from historical parking studies performed by DOWL HKM at Alaska Pacific University (APU), to support alternative parking requirements for the APU campus under AMC 21.40.020.J. This study is intended to provide additional data to justify the campus parking standards proposed in the Draft APU Master Plan. In 2007, the Anchorage Assembly approved an ordinance, amending the PLI zoning district to allow large campus developments with multiple buildings to provide parking within the identified campus boundaries to meet the needs of the campus. The mix of uses, separation of buildings, and separation of parking lots that are provided on APU's campus creates maximum utilization for the different parking lots at different times, allowing excellent joint or shared uses of the parking lots.

## **OVERVIEW**

Parking usage studies have been conducted by DOWL HKM at the APU campus over the last decade, the most recent study taking place in fall 2008. A campus-wide parking variance for all parking lots located on the APU campus is included as part of the draft APU Master Plan. Currently, 923 parking spaces exist on the APU campus (Figure 1). This variance request is to reduce the required parking on campus from 1,433 parking spaces to 887 parking spaces. The intent of this study is to determine if the proposed 887 parking spaces are sufficient to handle parking for the APU campus.

## EXISTING SITUATION

The APU campus currently has an enrollment of over 550 Full Time Equivalent (FTE) students (with the capacity to increase to 735 FTEs). The combined gross building area of all existing office/administrative and medical office buildings on the APU campus totals 342,820 square feet (sf), with an additional 48 residential rooms located between Segelhorst Hall and University Village, and 159 hotel rooms at the University Lake Springhill Suites (ULSS). The code required parking, under Anchorage Municipal Code (AMC) 21.45.080, is a total of 947 parking spaces for the administrative/office buildings (one space per 300 sf of gross building area); 235 parking spaces are required for the medical office building (one space per 250 sf of gross building area); 24 parking spaces are required for the residential buildings (one space per 2 rooms); and 159 spaces are required for the ULSS. Therefore, the current total off-street parking requirement under AMC 21.45.080 for the APU campus is 1,365 parking spaces. The current total provided parking spaces is 923 parking spaces.

## PROPOSED SITUATION

Currently, APU is planning the design and construction of a 20,395 sf addition to the existing Glenn Olds Hall building (also known as the USGS building). With this addition, the total off-street parking requirement for the APU campus under AMC 21.45.080 will increase to 1,433 parking spaces (Table 1). Due to the proposed development, the USGS Upper parking lot will also decrease slightly to 206 parking spaces. This brings the total provided parking spaces to 905 parking spaces.

**Table 1: Current Title 21 Campus Parking Requirements**

| Building                 | Gross Floor Area<br>(sf or rooms) | Parking Requirement |              |
|--------------------------|-----------------------------------|---------------------|--------------|
|                          |                                   | Ratio               | Total        |
| Alaska Spine Institute   | 58,726                            | 1:250 sf            | 234.90       |
| APTI <sup>1</sup>        | 18,600                            | 1:300 sf            | 62.00        |
| Grant Hall               | 53,581                            | 1:300 sf            | 178.60       |
| Carr-Gottstein           | 26,470                            | 1:300 sf            | 88.23        |
| Atwood Center            | 79,993                            | 1:300 sf            | 266.64       |
| Moseley Sports Center    | 17,887                            | 1:300 sf            | 59.62        |
| Grace Hall               | 35,270                            | 1:300 sf            | 117.57       |
| Gould Hall               | 25,123                            | 1:300 sf            | 83.74        |
| Glenn Olds Hall          | 27,170                            | 1:300 sf            | 90.57        |
| Glenn Olds Hall Addition | 20,395                            | 1:300 sf            | 67.98        |
| Segelhorst Hall          | 24                                | 1:2 rooms           | 12           |
| University Village       | 24                                | 1:2 rooms           | 12           |
| Mlakar President's Home  | 4,956                             | N/A                 | N/A          |
| University Lake Suites   | 159                               | 1:1 rooms           | 159          |
| <b>Total Parking</b>     |                                   |                     | <b>1,433</b> |

<sup>1</sup>Estimated floor area

Note: Shading indicates an APU tenant

We respectfully request a 38% parking variance to decrease the required parking to 887 parking spaces for the APU campus, including the proposed addition to the Glenn Olds Hall.

We believe this reduction is justified based on the following important considerations:

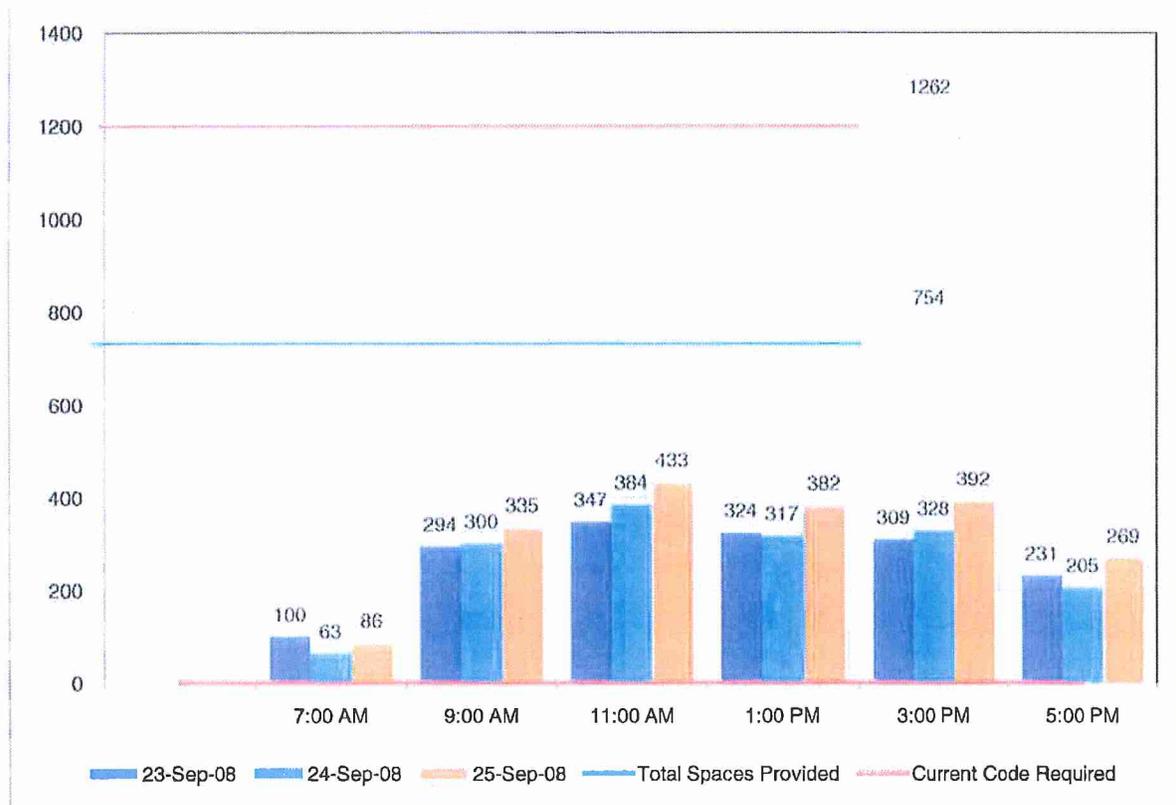
- The historical parking usage studies conducted by DOWL HKM for the parking lots on campus found that actual parking usage is significantly below what is required.
- There is an extensive network of pedestrian trails throughout the APU campus as well as the surrounding University-Medical (U-Med) District. The trails reduce automobile dependence in the area by allowing staff, students, and faculty to walk and/or bike to the campus from other parts of campus and neighboring residential communities.
- The Municipality of Anchorage (MOA) People Mover Bus System offers great coverage within the U-Med District and also between the district and other parts of the municipality, such as downtown and Mountain View. The People Mover also has extended bus service to Eagle River. Bus routes serving the area include Routes 1, 3, 13, 36, 45, and 102. There are four bus stops located on the APU campus that are directly served by Route 36 (Figure 1).
- The Alaska Spine Institute (ASI) has already been granted a parking variance by the Municipality permitting a parking requirement of one space per 278 sf of gross floor area, or 211 parking spaces. The recent parking study by DOWL HKM confirmed that these 211 parking spaces are more than sufficient to meet ASI's parking needs.
- ULSS has already been granted a parking variance by the Municipality permitting a parking variance of 9.5%, for a total parking provided of 144 parking spaces. (Current observations show that the hotel still has a significant amount of unused parking. This suggests that their shuttle service and walk ability within the U-Med district do result in less parking demand. See Appendix B for 2011 parking usage study results.)
- One of the U-Med Green District's emphasis areas is "Active (alternative) Transportation." The core of this emphasis will not only reduce costs, but also enhance environmental stability by reducing traffic congestion while improving the quality of working and living in U-Med. This goes hand in hand with decreasing single-occupancy vehicles and increasing public transportation and therefore reducing the parking needs in the U-Med.
- Proposed changes to the Title 21 parking standards would provide a new category for educational facilities, including colleges and universities. The proposed off-street parking requirement for colleges and universities, if adopted, would allow the director and the traffic engineer to determine the off-street parking requirements for Universities based on actual parking studies and other acceptable estimates.
- AMC 21.40.020.J.1 allows the administrative official and the traffic engineer to grant parking variances, within the PLI zoning district, based on proof that the land use will generate a lower parking demand than anticipated by the supplementary district regulations.

**PARKING SURVEY AND USEAGE ANALYSIS**

A parking usage study was conducted by DOWL HKM at the APU campus in fall 2008 (September 23 through 25), for the APU campus (minus the ULSS that was under construction). Actual parking usage was counted at various times, six times per day, as scoped by the MOA Traffic Engineer. The goals of the parking studies were to:

- Quantify the current parking usage of the APU campus;
- Compare this figure with current MOA parking requirements;
- Propose alternative parking standards for the APU campus.

The parking survey data is summarized in Chart 1, which shows the total number of cars present on campus counted at various times throughout the survey. The data was collected at two-hour intervals from 7 a.m. to 5 p.m. All cars parked in surface spaces were counted.



**Chart 1: Parking Survey Data Summary**

As the data shows, the maximum observed occupancy on the campus during the study period did not exceed 35% of the current Title 21 requirements for off-street parking, or 433 of the available 754 spaces (57% of the available spaces). Chart 1 illustrates this data along with the current code requirement. (Chart 1 excludes parking space data for ULSS [144 parking spaces

provided versus 159 parking spaces required] and University Village [25 parking spaces provided versus 12 parking spaces required].)

Additionally, the maximum parking demand for administrative/office uses alone was 1 parking space per 772 sf. When compared to current Title 21 requirements for off-street parking (1 space per 300 sf), this actual observed usage is a 60% reduction in parking spaces (see Appendix A - Actual Usage).

It should also be noted that if the enrollment of the campus were to increase overnight to capacity (735 FTEs), there would still be sufficient parking available on campus. Using a simple ratio of maximum current parking to FTEs, the maximum proposed parking usage would increase to 579 parking spaces ( $433/550 = x/735$ ;  $x = 579$ ). This is still well below the provided 905 parking spaces on campus.

### **ALTERNATIVE TRANSPORTATION**

One explanation for the decreased demand for off-street parking on the APU campus could be participation of faculty, staff, and students in alternative transportation methods, including the MOA People Mover bus system. The APU campus is well served by busses, with Route 36 being the primary route serving the campus directly. In addition, APU students, staff, and faculty have access to the University Pass, which allows them to ride the People Mover for free. The following routes currently serve APU and/or the adjacent uses in the University-Medical (U-Med) District:

- Route 1: Muldoon Transfer Center and Dimond Transit Center via Baxter Road, Tudor Road, the Alaska Native Medical Center, University of Alaska Anchorage (UAA), Providence Hospital, Lake Otis Parkway, and Dimond Boulevard with bus service from 6:33 a.m. to 9:59 p.m.
- Route 3: Downtown Transit Center and Muldoon Transfer Center or Centennial Village Housing via West High School, Benson/Northern Lights Boulevard, Sears Mall, Providence Hospital, UAA, East High School, Boniface Center, and Chester or Nunaka Valleys with bus service from 6:24 a.m. to 11:09 p.m.
- Route 13: Downtown Transit Center and Muldoon Transfer Center via Cordova Street, Chugach View, Chugach Manor, Anchorage Senior Center, Alaska Regional Hospital, Charter College, Providence Hospital, UAA, and Alaska Native Medical Center with bus service from 6:03 a.m. to 10:40 p.m.
- Route 36: Downtown Transit Center to Alaska Pacific University via Minnesota Drive, West Northern Lights, Aero, Wisconsin, Spenard, 36th Avenue, Frontier Building, Loussac Library, UAA, and Providence Hospital with bus service from 6 a.m. to 11:41 p.m. Route 36 directly serves the campus with seven bus stops located throughout the APU campus.
- Route 45: Downtown Transit Center and the Alaska Native Medical Center via Mountain View, Northway Mall, East High School, UAA Drive, and Providence Hospital with bus service from 5:54 a.m. to 11:31 p.m.

- Route 102: Alaska Native Medical Center, Providence Hospital, and Peters Creek Trading Post via the Downtown Transit Center, Eagle River Transit Center, and North Birchwood Park and Ride with bus service from 6:58 a.m. to 5:40 p.m.

A portion of students also live on campus, allowing for pedestrian or bicycle transportation through the campus. It is estimated, by APU Administration, that only 25 percent of APU students own vehicles, and the vehicles are often shared with other students. Staff, faculty, and off-campus students may also choose to walk or ride their bicycles to work, as APU is well connected to MOA trail corridors and has bike racks located conveniently throughout the campus. The completion of the Chester Creek Trail in fall 2010 adds to the ease of accessing APU's campus from all over Anchorage.

## CONCLUSION

The current parking usage at APU's campus is far lower than current code requirements for off-street parking. Based upon the current parking usage, a reduction to the off-street parking requirement would not be expected to adversely affect parking availability on or off campus. Therefore, we respectfully request your concurrence with the alternative campus parking requirements shown in Table 2. Based on our observation, we propose a reduced required ratio of 1 space per 600 sf of campus structures, giving us a safeguard of 20% from the observed maximum demand (1 space per 772 sf).

Approval of this request would result in a 38% reduction to the existing Title 21 parking requirement for the campus. This parking analysis replaces the more generalized analysis currently included in the Draft APU Master Plan. This approval of alternative campus-wide parking requirements, as shown in Table 2, will be incorporated into the final APU Master Plan.

**Table 2: Proposed Campus-Wide Variance Parking Requirements**

| Building                            | Gross Floor Area<br>(sf or rooms) | Parking Requirement |            |
|-------------------------------------|-----------------------------------|---------------------|------------|
|                                     |                                   | Ratio               | Total      |
| Alaska Spine Institute <sup>2</sup> | 58,726                            | 1:278 sf            | 211        |
| APTI <sup>1</sup>                   | 18,600                            | 1:600 sf            | 31         |
| Grant Hall                          | 53,581                            | 1:600 sf            | 89         |
| Carr-Gottstein                      | 26,470                            | 1:600 sf            | 44         |
| Atwood Center                       | 79,993                            | 1:600 sf            | 133        |
| Moseley Sports Center               | 17,887                            | 1:600 sf            | 30         |
| Grace Hall                          | 35,270                            | 1:600 sf            | 59         |
| Gould Hall                          | 25,123                            | 1:600 sf            | 42         |
| Glenn Olds Hall                     | 27,170                            | 1:600 sf            | 45         |
| Glenn Olds Hall Addition            | 20,395                            | 1:600 sf            | 34         |
| Segelhorst Hall                     | 24                                | 1:2 rooms           | 12         |
| University Village                  | 24                                | 1:2 rooms           | 12         |
| Mlakar President's Home             | 4,956                             | N/A                 | N/A        |
| University Lake Suites <sup>2</sup> | 159                               | 1:.906 room         | 144        |
| <b>Total Parking</b>                |                                   |                     | <b>887</b> |

<sup>1</sup>Estimated floor area

<sup>2</sup>Requirement based on approved parking variance

Note: Shading indicates an APU tenant

Ms. Mormilo and Mr. Weaver  
Municipality of Anchorage  
May 6, 2011  
Page 7

While we are requesting this variance to serve the overall existing APU Campus, we would like to be able to generically apply the 1:600 to future administrative offices/educational buildings. Should a future building be determined, by its use or other characteristics, to require more or less parking, we recognize that the MOA Traffic Engineer will reserve the right to evaluate each new building on a case-by-case basis.

If you or your staff has additional questions, please feel free to contact us.

Sincerely,  
DOWL HKM



Tanya S. Hickok, P.E., LEED® AP  
Senior Civil Engineer

D60683.Mormilo.Weaver.TSH.050611.cam

Attachment(s): As stated

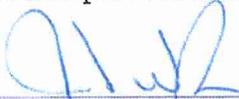
**CONCURRENCE**



Stephanie L. Mormilo, P.E.  
Municipal Traffic Engineer

16-May-2011

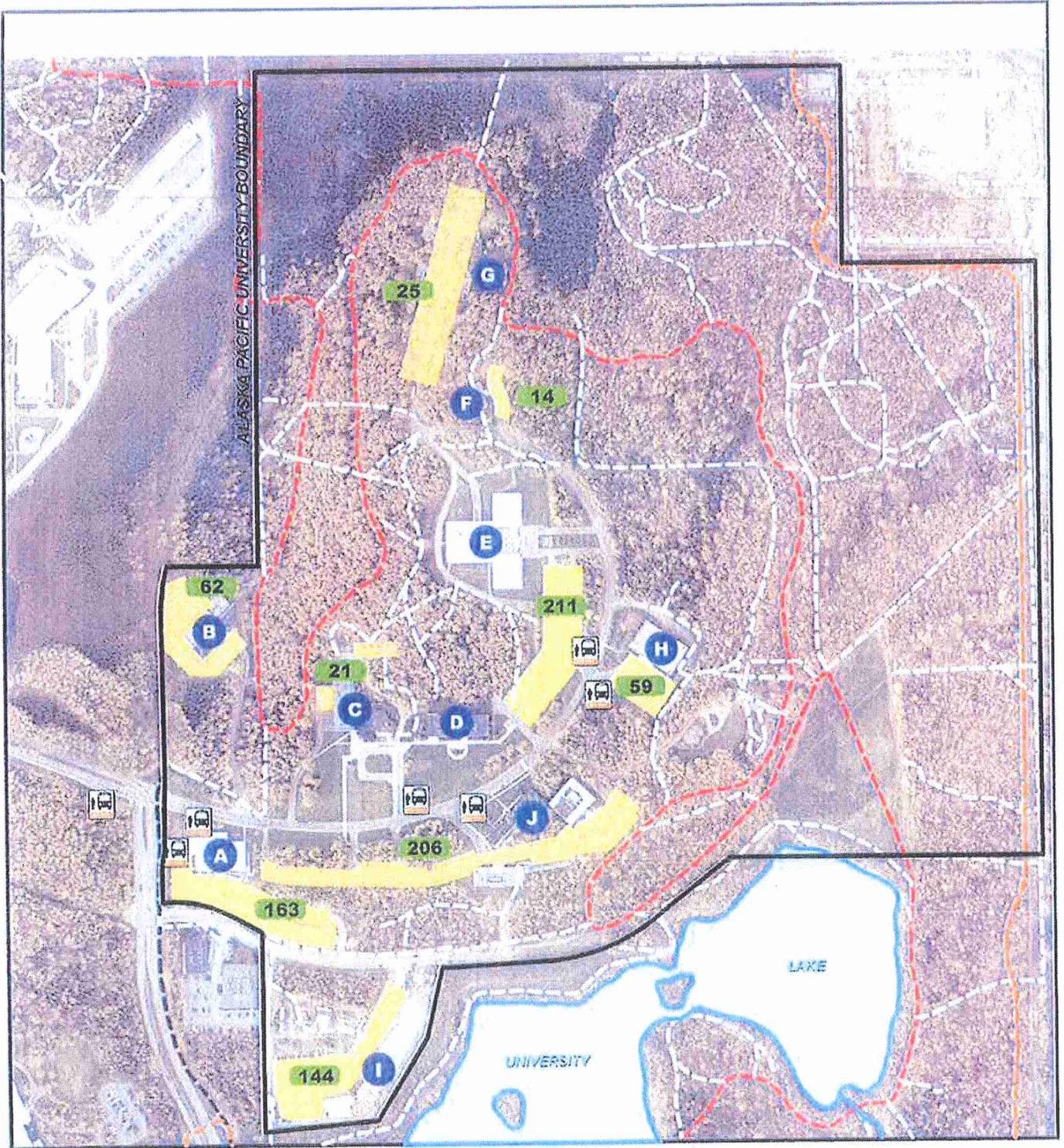
Date



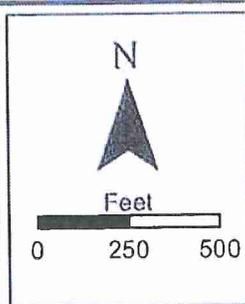
Jerry T. Weaver, Jr.  
Director

May 18, 2011

Date

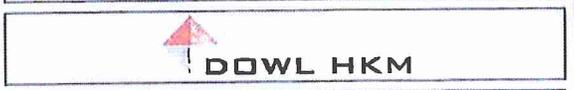


- A - Alaska Spine Institute
- B - APTI
- C - Grant Hall
- D - Carr-Gottstein Hall
- E - Atwood Center
- F - Segelhorst Hall
- G - University Village
- H - Moseley Sports Center
- I - University Lake Suites
- J - Glenn A. Olds Hall / Gould Hall / Grace Hall
- 144** # of Parking Spaces
- Transit Stops
- Campus Paved Trails
- Campus Unpaved Trails
- Tour of Anchorage Trail
- Chester Creek Trail



**Figure 1**  
Parking and Transit Stop Map

Glenn Olds Hall Expansion Project



April, 2011

WO: D60683

**APPENDIX A: PARKING ACTUAL USAGE**

| September 23, 2008      |              |            |               |            |               |            |               |            |               |            |               |            |               |
|-------------------------|--------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|
| Building                | Total Spaces | 7am        |               | 9am        |               | 11am       |               | 1pm        |               | 3pm        |               | 5pm        |               |
|                         |              | Counted    | Percent Usage |
| KAKM                    | 62           | 2          | 3%            | 17         | 27%           | 26         | 42%           | 17         | 27%           | 27         | 44%           | 19         | 31%           |
| Grant Hall              | 20           | 3          | 15%           | 8          | 40%           | 7          | 35%           | 8          | 40%           | 8          | 40%           | 5          | 25%           |
| Carr-Gottstein / Alwood | 212          | 40         | 19%           | 64         | 30%           | 73         | 34%           | 77         | 36%           | 62         | 29%           | 65         | 31%           |
| Mosely Sports Center    | 59           | 11         | 19%           | 8          | 14%           | 4          | 7%            | 12         | 20%           | 5          | 8%            | 3          | 5%            |
| Segelhorst Hall         | 14           | 7          | 50%           | 7          | 50%           | 5          | 36%           | 4          | 29%           | 7          | 50%           | 7          | 50%           |
| USGS Upper              | 224          | 23         | 10%           | 116        | 52%           | 138        | 62%           | 136        | 61%           | 128        | 57%           | 111        | 50%           |
| AK Spine Institute      | 163          | 14         | 9%            | 74         | 45%           | 94         | 58%           | 70         | 43%           | 72         | 44%           | 21         | 13%           |
| University Village*     | 25           | N/A        | N/A           |
| <b>TOTAL</b>            | <b>779</b>   | <b>100</b> | <b>13%</b>    | <b>294</b> | <b>38%</b>    | <b>347</b> | <b>45%</b>    | <b>324</b> | <b>42%</b>    | <b>309</b> | <b>40%</b>    | <b>231</b> | <b>30%</b>    |

\* Counts were not conducted at University Village or University Lake Springhill Suites

Maximum Usage Observed

**APPENDIX A: PARKING ACTUAL USAGE**

| September 24, 2008      |              |           |               |            |               |            |               |            |               |            |               |            |               |
|-------------------------|--------------|-----------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|
| Building                | Total Spaces | 7am       |               | 9am        |               | 11am       |               | 1pm        |               | 3pm        |               | 5pm        |               |
|                         |              | Counted   | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage |
| KAKM                    | 62           | 1         | 2%            | 21         | 34%           | 27         | 44%           | 27         | 44%           | 23         | 37%           | 16         | 26%           |
| Grant Hall              | 21           | 2         | 10%           | 5          | 24%           | 8          | 38%           | 7          | 33%           | 7          | 33%           | 0          | 0%            |
| Carl-Gottstein / Atwood | 211          | 17        | 8%            | 71         | 34%           | 83         | 39%           | 71         | 34%           | 71         | 34%           | 63         | 30%           |
| Mosely Sports Center    | 59           | 9         | 15%           | 7          | 12%           | 26         | 44%           | 12         | 20%           | 8          | 14%           | 24         | 41%           |
| Segelhorst Hall         | 14           | 7         | 50%           | 5          | 36%           | 5          | 36%           | 5          | 36%           | 4          | 29%           | 4          | 29%           |
| USGS Upper              | 224          | 19        | 8%            | 122        | 54%           | 167        | 75%           | 139        | 62%           | 146        | 65%           | 81         | 36%           |
| AK Spine Institute      | 163          | 8         | 5%            | 69         | 42%           | 68         | 42%           | 56         | 34%           | 69         | 42%           | 17         | 10%           |
| University Village*     | 25           | N/A       | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           |
| <b>TOTAL</b>            | <b>779</b>   | <b>63</b> | <b>8%</b>     | <b>300</b> | <b>39%</b>    | <b>384</b> | <b>49%</b>    | <b>317</b> | <b>41%</b>    | <b>328</b> | <b>42%</b>    | <b>205</b> | <b>26%</b>    |

\* Counts were not conducted at University Village or University Lake Springhill Suites

Maximum Usage Observed

**APPENDIX A: PARKING ACTUAL USAGE**

| September 25, 2008      |              |           |               |            |               |            |               |            |               |            |               |            |               |
|-------------------------|--------------|-----------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|
| Building                | Total Spaces | 7am       |               | 9am        |               | 11am       |               | 1pm        |               | 3pm        |               | 5pm        |               |
|                         |              | Counted   | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage | Counted    | Percent Usage |
| KAKM                    | 62           | 3         | 5%            | 22         | 35%           | 29         | 47%           | 25         | 40%           | 33         | 53%           | 22         | 35%           |
| Grant Hall              | 20           | 4         | 20%           | 7          | 35%           | 7          | 35%           | 2          | 10%           | 9          | 45%           | 4          | 20%           |
| Carr-Gottstein / Atwood | 212          | 36        | 17%           | 84         | 40%           | 111        | 52%           | 88         | 42%           | 95         | 45%           | 81         | 38%           |
| Mosely Sports Center    | 59           | 4         | 7%            | 9          | 15%           | 8          | 14%           | 11         | 19%           | 8          | 14%           | 7          | 12%           |
| Segelhorst Hall         | 14           | 6         | 43%           | 7          | 50%           | 6          | 43%           | 7          | 50%           | 7          | 50%           | 9          | 64%           |
| USGS Upper              | 224          | 21        | 9%            | 128        | 57%           | 189        | 84%           | 172        | 77%           | 158        | 71%           | 119        | 53%           |
| AK Spine Institute      | 163          | 12        | 7%            | 78         | 48%           | 83         | 51%           | 77         | 47%           | 82         | 50%           | 27         | 17%           |
| University Village*     | 25           | N/A       | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           | N/A        | N/A           |
| <b>TOTAL</b>            | <b>779</b>   | <b>86</b> | <b>11%</b>    | <b>335</b> | <b>43%</b>    | <b>433</b> | <b>56%</b>    | <b>382</b> | <b>49%</b>    | <b>392</b> | <b>50%</b>    | <b>269</b> | <b>35%</b>    |

\* Counts were not conducted at University Village or University Lake Springhill Suites

Maximum Usage Observed

**APPENDIX B: PARKING ACTUAL USAGE**

| May 3, 2011  |              |           |               |           |               |           |               |           |               |
|--------------|--------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|
| Building     | Total Spaces | 7am       |               | 11am      |               | 3pm       |               | 7pm       |               |
|              |              | Counted   | Percent Usage |
| ULSS         | 144          | 82        | 57%           | 46        | 32%           | 38        | 26%           | 49        | 34%           |
| <b>TOTAL</b> | <b>144</b>   | <b>82</b> | <b>57%</b>    | <b>46</b> | <b>32%</b>    | <b>38</b> | <b>26%</b>    | <b>49</b> | <b>34%</b>    |

Maximum Usage Observed

| May 4, 2011  |              |           |               |           |               |           |               |           |               |
|--------------|--------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|
| Building     | Total Spaces | 7am       |               | 11am      |               | 3pm       |               | 7pm       |               |
|              |              | Counted   | Percent Usage |
| ULSS         | 144          | 93        | 65%           | 37        | 26%           | 32        | 22%           | 46        | 32%           |
| <b>TOTAL</b> | <b>144</b>   | <b>93</b> | <b>65%</b>    | <b>37</b> | <b>26%</b>    | <b>32</b> | <b>22%</b>    | <b>46</b> | <b>32%</b>    |

Maximum Usage Observed

| May 5, 2011  |              |           |               |           |               |           |               |           |               |
|--------------|--------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|
| Building     | Total Spaces | 7am       |               | 11am      |               | 3pm       |               | 7pm       |               |
|              |              | Counted   | Percent Usage |
| ULSS         | 144          | 78        | 54%           | 37        | 26%           | 29        | 20%           | 44        | 31%           |
| <b>TOTAL</b> | <b>144</b>   | <b>78</b> | <b>54%</b>    | <b>37</b> | <b>26%</b>    | <b>29</b> | <b>20%</b>    | <b>44</b> | <b>31%</b>    |

Maximum Usage Observed

**APPENDIX F**

Traffic Memorandum



## TECHNICAL MEMORANDUM

**TO:** Maryellen Tuttell, AICP  
Manager, Planning and Environmental Services W.O. D59900

**FROM:** Michael D. Spitz, P.E.  
Senior Transportation Engineer *mf*

**DATE:** June 7, 2010

**SUBJECT:** Alaska Pacific University Master Plan Update  
Future Traffic Operational Analysis

---

DOWL HKM has completed a limited traffic operational analysis as part of the Alaska Pacific University (APU) Master Plan Update. The study area includes the segments of Providence Drive and Elmore Road between the intersections of East Tudor Road and Elmore Road and Lake Otis Parkway and Providence Drive-36th Avenue. This analysis focused on the following intersections:

- East Tudor Road /Elmore Road,
- Elmore Road/Providence Drive-University Drive,
- Lake Otis Parkway/36th Avenue-Providence Drive,
- Providence Drive/UAA Drive, and
- Providence Drive/Alumni Loop.

The intersection of University Lake Drive and Elmore Road has not been considered in this analysis.

The primary objective of this traffic operational analysis is to evaluate the design year (2030) traffic conditions.

### ANALYSIS

The analysis was performed using *Synchro 7.0* software, which employs the methodology from the *2000 Highway Capacity Manual (HCM)*. *Synchro 7.0* is a network-based interactive computer program that quantitatively evaluates the transportation network by either treating each intersection individually or the network as a whole. The analysis employs the following measures of effectiveness (MOEs): level of service (LOS), volume to capacity ratio (v/c), and the average control delay in seconds per vehicle (sec/veh). The v/c ratio, also known as degree of utilization, represents the demand flow rate to capacity ratio; a lower v/c value signifies an intersection of sufficient capacity to accommodate vehicular demand. LOS describes the quality of traffic operations and is graded from A to F. LOS A represents free-flow conditions and LOS F represents severely congested conditions with stop and go flow conditions.

## **2030 PROJECTED TRAFFIC VOLUMES**

Future traffic volumes were generated using the traffic volume projections from the modeling efforts for the Anchorage Bowl 2025 Long Range Transportation Plan (LRTP) with 2027 Revisions. The 2027 Average Annual Daily Traffic (AADT) volumes were extracted from the Anchorage Metropolitan Area Transportation Solutions (AMATS) model for the study roadways. The 2030 AADT volumes were developed by applying a growth rate of 0.5 percent to the 2027 AMATS AADT volumes. This growth rates is assumed to serve as a worst-case scenario. Design hourly volumes (DHV) were then extracted from the 2030 AADT volumes by using K factor of 10.5 percent. The "K" factor represents the 30th highest hourly volume, or DHV, expressed as a percentage of the AADT volume. The 2027 turning movement volumes from the AMATS model were used to calculate the turning percentages and the directional splits at the study intersections. These values were then applied to the 2030 DHV volumes to calculate the 2030 turning movement volumes.

## **2030 TRAFFIC CONDITIONS ANALYSIS**

The selected MOEs were computed for each of the study intersections using the Synchro 7.0 software. The analysis used existing lane configurations, signal cycle lengths, and traffic controls. However, optimizations of offsets and phasing splits were allowed. Geometrical modifications were not considered at this time.

A multi-lane roundabout is planned for construction at the intersection of Providence Drive/Elmore Road as part of the University of Alaska Anchorage (UAA) Sports Arena. Based on this, the intersection of Providence Drive-University Drive/Elmore Road was analyzed as multi-lane roundabout.

NANA Development Corporation recently completed construction of the APU hotel situated east of Elmore Road to serve medical, university, and Alaska visitors. A future plan is proposed to improve access to the NANA APU hotel. This plan includes the re-alignment of the University Lake Drive to the south to align with proposed access for the UAA Sport Arena facility that is proposed to be located south of Providence Drive and west of Elmore Road and the construction of roundabout at the intersection of the University Lake Drive and Elmore Road.

Table 1 summarizes the results of the analysis for the selected MOE. The analysis input assumptions and the reports detailing the analysis results are attached.

**Table 1: 2030 Measures of Effectiveness Summary**

| Study Intersection                          | 2030 Capacity Analysis |       |             |                  |                   |
|---|------------------------|-------|-------------|------------------|-------------------|
|   | Traffic Control        | LOS   | Delay (sec) | V/C              | Critical Movement |
| Lake Otis Pkwy/36th Avenue-Providence Drive | Signal                 | D     | 39.0        | 0.78             | N/A               |
| East Tudor Road/Elmore Road                 | Signal                 | D     | 44.0        | 0.94             | N/A               |
| Providence Drive/UAA Drive                  | Signal                 | E     | 57.6        | 0.94             | N/A               |
| Providence Drive/Alumni Loop                | Signal                 | E     | 63.5        | 1.17             | N/A               |
| Providence Drive/Elmore Rd                  | RBT*                   | N/A** | 10-20       | H 0.57 L<br>0.69 | EBT               |

**Note:**

\* The volume to capacity (V/C) ratio for a roundabout was estimated using a range of high and low possible capacities.

\* The delay time (sec/veh) for a roundabout was estimated using SimTraffic. This is given as an interval and it is calculated by dividing the total delay by the number of vehicles on that approach.

\*\* The level-of-service (LOS) for a roundabout was not estimated, due to the limited capability of Synchro 7.0 in analyzing roundabouts.

The deterioration in LOS for the intersections of Providence Drive at UAA Drive and Alumni Loop is assumed to be the result of overall University-Medical (U-Med) District growth. The current reconnaissance study on Northern Access to U-Med District is designed to address long-term access traffic needs in this area. The impact of development of the APU campus is expected to have minimal influence on the overall traffic level at most study intersections.

Attachments: Synchro 7.0 Reports

**SYNCHRO 7.0 REPORTS**

HCM Signalized Intersection Capacity Analysis  
1: Tudor Rd & Lake Otis Pkwy

| Movement                          | EBL   | EBT   | EBR    | WBL   | WBT   | WBR  | NBL                  | NBT   | NBR   | SBL   | SBT   | SBR   |
|-----------------------------------|-------|-------|--------|-------|-------|------|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations               |       |       |        |       |       |      |                      |       |       |       |       |       |
| Volume (vph)                      | 379   | 1629  | 314    | 341   | 1310  | 103  | 322                  | 621   | 109   | 252   | 1191  | 186   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900  | 1900  | 1900 | 1900                 | 1900  | 1900  | 1900  | 1900  | 1900  |
| Grade (%)                         |       | 3%    |        |       | 2%    |      |                      | 4%    |       |       | 5%    |       |
| Total Lost time (s)               | 4.0   | 4.0   | 4.0    | 4.0   | 4.0   |      | 4.0                  | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor                 | 1.00  | 0.95  | 1.00   | 0.97  | 0.95  |      | 1.00                 | 0.95  | 0.88  | 1.00  | 0.95  | 1.00  |
| Frt                               | 1.00  | 1.00  | 0.85   | 1.00  | 0.99  |      | 1.00                 | 1.00  | 0.85  | 1.00  | 1.00  | 0.85  |
| Flt Protected                     | 0.95  | 1.00  | 1.00   | 0.95  | 1.00  |      | 0.95                 | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (prot)                 | 1743  | 3486  | 1560   | 3399  | 3466  |      | 1734                 | 3468  | 2731  | 1725  | 3451  | 1544  |
| Flt Permitted                     | 0.95  | 1.00  | 1.00   | 0.95  | 1.00  |      | 0.95                 | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (perm)                 | 1743  | 3486  | 1560   | 3399  | 3466  |      | 1734                 | 3468  | 2731  | 1725  | 3451  | 1544  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92   | 0.92  | 0.92  | 0.92 | 0.92                 | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 412   | 1771  | 341    | 371   | 1424  | 112  | 350                  | 675   | 118   | 274   | 1295  | 202   |
| RTOR Reduction (vph)              | 0     | 0     | 193    | 0     | 3     | 0    | 0                    | 0     | 47    | 0     | 0     | 143   |
| Lane Group Flow (vph)             | 412   | 1771  | 148    | 371   | 1533  | 0    | 350                  | 675   | 71    | 274   | 1295  | 59    |
| Turn Type                         | Prot  |       | Perm   | Prot  |       |      | Prot                 |       | pm+ov | Prot  |       | Perm  |
| Protected Phases                  | 1     | 6     |        | 5     | 2     |      | 7                    | 4     | 5     | 3     | 8     |       |
| Permitted Phases                  |       |       | 6      |       |       |      |                      |       | 4     |       |       | 8     |
| Actuated Green, G (s)             | 23.0  | 62.0  | 62.0   | 12.0  | 51.0  |      | 19.6                 | 35.4  | 47.4  | 25.8  | 41.6  | 41.6  |
| Effective Green, g (s)            | 25.0  | 64.0  | 64.0   | 14.0  | 53.0  |      | 22.0                 | 37.8  | 51.4  | 28.2  | 44.0  | 44.0  |
| Actuated g/C Ratio                | 0.16  | 0.40  | 0.40   | 0.09  | 0.33  |      | 0.14                 | 0.24  | 0.32  | 0.18  | 0.28  | 0.28  |
| Clearance Time (s)                | 6.0   | 6.0   | 6.0    | 6.0   | 6.0   |      | 6.4                  | 6.4   | 6.0   | 6.4   | 6.4   | 6.4   |
| Vehicle Extension (s)             | 2.0   | 5.0   | 5.0    | 2.0   | 5.0   |      | 2.0                  | 4.0   | 2.0   | 2.0   | 3.0   | 3.0   |
| Lane Grp Cap (vph)                | 272   | 1394  | 624    | 297   | 1148  |      | 238                  | 819   | 877   | 304   | 949   | 425   |
| v/s Ratio Prot                    | c0.24 | 0.51  |        | 0.11  | c0.44 |      | c0.20                | 0.19  | 0.01  | 0.16  | c0.38 |       |
| v/s Ratio Perm                    |       |       | 0.10   |       |       |      |                      |       | 0.02  |       |       | 0.04  |
| v/c Ratio                         | 1.51  | 1.27  | 0.24   | 1.25  | 1.34  |      | 1.47                 | 0.82  | 0.08  | 0.90  | 1.36  | 0.14  |
| Uniform Delay, d1                 | 67.5  | 48.0  | 31.8   | 73.0  | 53.5  |      | 69.0                 | 57.9  | 37.8  | 64.5  | 58.0  | 43.7  |
| Progression Factor                | 1.00  | 1.00  | 1.00   | 1.33  | 0.82  |      | 1.00                 | 1.00  | 1.00  | 1.19  | 1.20  | 2.98  |
| Incremental Delay, d2             | 249.7 | 127.5 | 0.9    | 131.4 | 155.3 |      | 233.2                | 7.1   | 0.0   | 23.6  | 169.7 | 0.1   |
| Delay (s)                         | 317.2 | 175.5 | 32.7   | 228.5 | 199.0 |      | 302.2                | 65.0  | 37.9  | 100.7 | 239.3 | 130.6 |
| Level of Service                  | F     | F     | C      | F     | F     |      | F                    | E     | D     | F     | F     | F     |
| Approach Delay (s)                |       | 179.3 |        |       | 204.7 |      |                      | 134.9 |       |       | 205.5 |       |
| Approach LOS                      |       | F     |        |       | F     |      |                      | F     |       |       | F     |       |
| <b>Intersection Summary</b>       |       |       |        |       |       |      |                      |       |       |       |       |       |
| HCM Average Control Delay         |       |       | 185.3  |       |       |      | HCM Level of Service |       |       | F     |       |       |
| HCM Volume to Capacity ratio      |       |       | 1.40   |       |       |      |                      |       |       |       |       |       |
| Actuated Cycle Length (s)         |       |       | 160.0  |       |       |      | Sum of lost time (s) |       |       | 16.0  |       |       |
| Intersection Capacity Utilization |       |       | 124.6% |       |       |      | ICU Level of Service |       |       | H     |       |       |
| Analysis Period (min)             |       |       | 15     |       |       |      |                      |       |       |       |       |       |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3: Tudor Rd & Elmore Road

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  |  |   |  |  |   |  |  |  |  |  |   |
| Volume (vph)                      | 172   | 1326  | 50  | 95  | 1090  | 83  | 213   | 394   | 124   | 536   | 119   | 231   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               | 4.0   | 4.0   |   | 4.0   | 4.0   |   | 4.0   | 4.0   | 6.4   | 4.0   | 4.0   |   |
| Lane Util. Factor                 | 0.97  | 0.95  |   | 0.97  | 0.95  |   | 0.97  | 1.00  | 1.00  | 0.97  | 0.95  |   |
| Flt                               | 1.00  | 0.99  |   | 1.00  | 0.99  |   | 1.00  | 1.00  | 0.85  | 1.00  | 0.90  |   |
| Flt Protected                     | 0.95  | 1.00  |   | 0.95  | 1.00  |   | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |   |
| Satd. Flow (prot)                 | 3433  | 3520  |   | 3433  | 3502  |   | 3433  | 1863  | 1583  | 3433  | 3189  |   |
| Flt Permitted                     | 0.95  | 1.00  |   | 0.95  | 1.00  |   | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |   |
| Satd. Flow (perm)                 | 3433  | 3520  |   | 3433  | 3502  |   | 3433  | 1863  | 1583  | 3433  | 3189  |   |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 187   | 1441  | 54  | 103   | 1185  | 90  | 232   | 428   | 135   | 583   | 129   | 251   |
| RTOR Reduction (vph)              | 0   | 2   | 0   | 0   | 3   | 0   | 0   | 0   | 70  | 0   | 80  | 0   |
| Lane Group Flow (vph)             | 187   | 1493  | 0   | 103   | 1272  | 0   | 232   | 428   | 65  | 583   | 300   | 0   |
| Turn Type                         | Prot  |   |   | Prot  |   |   | Prot  |   | Perm  | Prot  |   |   |
| Protected Phases                  | 1   | 6   |   | 5   | 2   |   | 7   | 4   |   | 3   | 8   |   |
| Permitted Phases                  |   |   |   |   |   |   |   |   | 4   |   |   |   |
| Actuated Green, G (s)             | 9.2   | 67.2  |   | 7.0   | 65.0  |   | 13.4  | 34.6  | 34.6  | 25.6  | 46.8  |   |
| Effective Green, g (s)            | 11.6  | 69.6  |   | 9.4   | 67.4  |   | 15.8  | 37.0  | 34.6  | 28.0  | 49.2  |   |
| Actuated g/C Ratio                | 0.07  | 0.43  |   | 0.06  | 0.42  |   | 0.10  | 0.23  | 0.22  | 0.18  | 0.31  |   |
| Clearance Time (s)                | 6.4   | 6.4   |   | 6.4   | 6.4   |   | 6.4   | 6.4   | 6.4   | 6.4   | 6.4   |   |
| Vehicle Extension (s)             | 1.3   | 5.0   |   | 1.3   | 5.0   |   | 1.3   | 2.5   | 2.5   | 1.3   | 2.0   |   |
| Lane Grp Cap (vph)                | 249   | 1531  |   | 202   | 1475  |   | 339   | 431   | 342   | 601   | 981   |   |
| v/s Ratio Prot                    | c0.05   | c0.42   |   | 0.03  | 0.36  |   | 0.07  | c0.23   |   | c0.17   | 0.09  |   |
| v/s Ratio Perm                    |   |   |   |   |   |   |   |   | 0.04  |   |   |   |
| v/c Ratio                         | 0.75  | 0.98  |   | 0.51  | 0.86  |   | 0.68  | 0.99  | 0.19  | 0.97  | 0.31  |   |
| Uniform Delay, d1                 | 72.8  | 44.4  |   | 73.1  | 42.1  |   | 69.7  | 61.4  | 51.3  | 65.6  | 42.3  |   |
| Progression Factor                | 0.66  | 0.21  |   | 0.61  | 0.61  |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |
| Incremental Delay, d2             | 1.0   | 3.2   |   | 0.6   | 6.1   |   | 4.5   | 41.3  | 0.2   | 29.1  | 0.1   |   |
| Delay (s)                         | 49.3  | 12.4  |   | 45.4  | 31.6  |   | 74.2  | 102.7   | 51.5  | 94.7  | 42.4  |   |
| Level of Service                  | D   | B   |   | D   | C   |   | E   | F   | D   | F   | D   |   |
| Approach Delay (s)                |   | 16.5  |   |   | 32.7  |   |   | 85.7  |   |   | 74.0  |   |
| Approach LOS                      |   | B   |   |   | C   |   |   | F   |   |   | E   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM Average Control Delay         |   |   | 44.0  |   |   | HCM Level of Service  |   |   |   | D   |   |   |
| HCM Volume to Capacity ratio      |   |   | 0.94  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 160.0   |   |   | Sum of lost time (s)  |   |   | 12.0  |   |   |   |
| Intersection Capacity Utilization |   |   | 93.4%   |   |   | ICU Level of Service  |   |   |   | F   |   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 10: 36th Avenue & Lake Otis Pkwy

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  |  |   |  |  |   |  |  |   |  |  |   |
| Volume (vph)                      | 145   | 436   | 89  | 315   | 481   | 128   | 119  | 775   | 95  | 178   | 892   | 56  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900   | 1900  | 1900  | 1900  | 1900  | 1900  |
| Grade (%)                         |   | -7%   |   |   | 0%  |   |  | 1%  |   |   | 1%  |   |
| Total Lost time (s)               | 4.0   | 4.0   |   | 4.0   | 4.0   |   | 4.0  | 4.0   |   | 4.0   | 4.0   |   |
| Lane Util. Factor                 | 1.00  | 0.95  |   | 1.00  | 0.95  |   | 1.00   | 0.95  |   | 1.00  | 0.95  |   |
| Frt                               | 1.00  | 0.97  |   | 1.00  | 0.97  |   | 1.00   | 0.98  |   | 1.00  | 0.99  |   |
| Flt Protected                     | 0.95  | 1.00  |   | 0.95  | 1.00  |   | 0.95   | 1.00  |   | 0.95  | 1.00  |   |
| Satd. Flow (prot)                 | 1832  | 3570  |   | 1770  | 3428  |   | 1761   | 3464  |   | 1761  | 3490  |   |
| Flt Permitted                     | 0.33  | 1.00  |   | 0.12  | 1.00  |   | 0.95   | 1.00  |   | 0.95  | 1.00  |   |
| Satd. Flow (perm)                 | 640   | 3570  |   | 218   | 3428  |   | 1761   | 3464  |   | 1761  | 3490  |   |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92   | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 158   | 474   | 97  | 342   | 523   | 139   | 129  | 842   | 103   | 193   | 970   | 61  |
| RTOR Reduction (vph)              | 0   | 10  | 0   | 0   | 15  | 0   | 0  | 6   | 0   | 0   | 3   | 0   |
| Lane Group Flow (vph)             | 158   | 561   | 0   | 342   | 647   | 0   | 129  | 939   | 0   | 193   | 1028  | 0   |
| Turn Type                         | pm+pt   |   |   | pm+pt   |   |   | Prot   |   |   | Prot  |   |   |
| Protected Phases                  | 3   | 8   |   | 7   | 4   |   | 5  | 2   |   | 1   | 6   |   |
| Permitted Phases                  | 8   |   |   | 4   |   |   |  |   |   |   |   |   |
| Actuated Green, G (s)             | 40.3  | 28.6  |   | 63.7  | 46.2  |   | 13.7   | 59.1  |   | 19.6  | 65.0  |   |
| Effective Green, g (s)            | 43.9  | 30.9  |   | 65.3  | 48.5  |   | 15.3   | 60.8  |   | 21.2  | 66.7  |   |
| Actuated g/C Ratio                | 0.27  | 0.19  |   | 0.41  | 0.30  |   | 0.10   | 0.38  |   | 0.13  | 0.42  |   |
| Clearance Time (s)                | 5.8   | 6.3   |   | 5.6   | 6.3   |   | 5.6  | 5.7   |   | 5.6   | 5.7   |   |
| Vehicle Extension (s)             | 1.2   | 4.0   |   | 1.2   | 4.0   |   | 1.2  | 4.0   |   | 1.2   | 4.0   |   |
| Lane Grp Cap (vph)                | 276   | 689   |   | 391   | 1039  |   | 168  | 1316  |   | 233   | 1455  |   |
| v/s Ratio Prot                    | 0.05  | 0.16  |   | c0.17   | 0.19  |   | 0.07   | 0.27  |   | c0.11   | c0.29   |   |
| v/s Ratio Perm                    | 0.11  |   |   | c0.19   |   |   |  |   |   |   |   |   |
| v/c Ratio                         | 0.57  | 0.81  |   | 0.87  | 0.62  |   | 0.77   | 0.71  |   | 0.83  | 0.71  |   |
| Uniform Delay, d1                 | 46.2  | 61.8  |   | 47.1  | 47.9  |   | 70.6   | 42.2  |   | 67.6  | 38.6  |   |
| Progression Factor                | 1.00  | 1.00  |   | 1.00  | 1.00  |   | 1.42   | 0.26  |   | 1.51  | 0.23  |   |
| Incremental Delay, d2             | 1.8   | 7.7   |   | 18.5  | 1.3   |   | 1.8  | 0.3   |   | 7.0   | 0.9   |   |
| Delay (s)                         | 48.0  | 69.5  |   | 65.6  | 49.2  |   | 102.3  | 11.3  |   | 109.0   | 9.9   |   |
| Level of Service                  | D   | E   |   | E   | D   |   | F  | B   |   | F   | A   |   |
| Approach Delay (s)                |   | 64.8  |   |   | 54.8  |   |  | 22.2  |   |   | 25.5  |   |
| Approach LOS                      |   | E   |   |   | D   |   |  | C   |   |   | C   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM Average Control Delay         |   |   | 39.0  |   |   | HCM Level of Service  |  |   |   | D   |   |   |
| HCM Volume to Capacity ratio      |   |   | 0.78  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 160.0   |   |   | Sum of lost time (s)  |  |   | 8.0   |   |   |   |
| Intersection Capacity Utilization |   |   | 80.0%   |   |   | ICU Level of Service  |  |   |   | D   |   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |

c Critical Lane Group



| Movement                          | EBL   | EBT  | WBT   | WBR  | SBL                  | SBR  |
|-----------------------------------|-------|------|-------|------|----------------------|------|
| Lane Configurations               |       |      |       |      |                      |      |
| Volume (vph)                      | 227   | 373  | 546   | 580  | 630                  | 90   |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900 |
| Grade (%)                         |       | 0%   | -1%   |      | 0%                   |      |
| Total Lost time (s)               | 4.0   | 4.0  | 4.0   |      | 4.0                  | 4.0  |
| Lane Util. Factor                 | 1.00  | 0.95 | 0.95  |      | 1.00                 | 1.00 |
| Flt                               | 1.00  | 1.00 | 0.92  |      | 1.00                 | 0.85 |
| Flt Protected                     | 0.95  | 1.00 | 1.00  |      | 0.95                 | 1.00 |
| Satd. Flow (prot)                 | 1770  | 3539 | 3282  |      | 1770                 | 1583 |
| Flt Permitted                     | 0.11  | 1.00 | 1.00  |      | 0.95                 | 1.00 |
| Satd. Flow (perm)                 | 201   | 3539 | 3282  |      | 1770                 | 1583 |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 |
| Adj. Flow (vph)                   | 247   | 405  | 593   | 630  | 685                  | 98   |
| RTOR Reduction (vph)              | 0     | 0    | 176   | 0    | 0                    | 38   |
| Lane Group Flow (vph)             | 247   | 405  | 1047  | 0    | 685                  | 60   |
| Turn Type                         | pm+pt |      |       |      | custom               |      |
| Protected Phases                  | 1     | 6    | 2     |      | 3                    | 7    |
| Permitted Phases                  | 6     |      |       |      |                      |      |
| Actuated Green, G (s)             | 57.0  | 57.0 | 31.6  |      | 31.9                 | 22.7 |
| Effective Green, g (s)            | 58.4  | 58.5 | 33.1  |      | 33.5                 | 24.3 |
| Actuated g/C Ratio                | 0.58  | 0.58 | 0.33  |      | 0.34                 | 0.24 |
| Clearance Time (s)                | 5.4   | 5.5  | 5.5   |      | 5.6                  | 5.6  |
| Vehicle Extension (s)             | 2.0   | 1.8  | 1.8   |      | 1.0                  | 1.0  |
| Lane Grp Cap (vph)                | 453   | 2070 | 1086  |      | 593                  | 385  |
| v/s Ratio Prot                    | c0.12 | 0.11 | c0.32 |      | c0.39                | 0.04 |
| v/s Ratio Perm                    | 0.20  |      |       |      |                      |      |
| v/c Ratio                         | 0.55  | 0.20 | 0.96  |      | 1.16                 | 0.16 |
| Uniform Delay, d1                 | 19.6  | 9.7  | 32.9  |      | 33.2                 | 29.8 |
| Progression Factor                | 1.00  | 1.00 | 1.15  |      | 1.00                 | 1.00 |
| Incremental Delay, d2             | 0.7   | 0.2  | 9.9   |      | 87.8                 | 0.1  |
| Delay (s)                         | 20.4  | 9.9  | 47.6  |      | 121.0                | 29.9 |
| Level of Service                  | C     | A    | D     |      | F                    | C    |
| Approach Delay (s)                |       | 13.9 | 47.6  |      | 109.6                |      |
| Approach LOS                      |       | B    | D     |      | F                    |      |
| <b>Intersection Summary</b>       |       |      |       |      |                      |      |
| HCM Average Control Delay         |       |      | 57.6  |      | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      |       |      | 0.94  |      |                      |      |
| Actuated Cycle Length (s)         |       |      | 100.0 |      | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization |       |      | 91.2% |      | ICU Level of Service | F    |
| Analysis Period (min)             |       |      | 15    |      |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 14: Providence Drive & Alumni Loop



| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|------|------|------|-------|-------|------|------|------|------|
| Lane Configurations    |       |       |      |      |      |      |       |       |      |      |      |      |
| Volume (vph)           | 79    | 615   | 273  | 39   | 289  | 3    | 682   | 162   | 52   | 27   | 295  | 89   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Grade (%)              |       | 0%    |      |      | -2%  |      |       | 0%    |      |      | 0%   |      |
| Total Lost time (s)    | 4.3   | 4.0   |      | 4.0  | 4.0  |      | 4.0   | 4.0   |      |      | 4.0  | 4.0  |
| Lane Util. Factor      | 1.00  | 0.95  |      | 1.00 | 0.95 |      | 1.00  | 1.00  |      |      | 1.00 | 1.00 |
| Flt                    | 1.00  | 0.95  |      | 1.00 | 1.00 |      | 1.00  | 0.96  |      |      | 1.00 | 0.85 |
| Flt Protected          | 0.95  | 1.00  |      | 0.95 | 1.00 |      | 0.95  | 1.00  |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      | 1770  | 3376  |      | 1787 | 3570 |      | 1770  | 1794  |      |      | 1855 | 1583 |
| Flt Permitted          | 0.38  | 1.00  |      | 0.19 | 1.00 |      | 0.50  | 1.00  |      |      | 0.96 | 1.00 |
| Satd. Flow (perm)      | 706   | 3376  |      | 350  | 3570 |      | 924   | 1794  |      |      | 1795 | 1583 |
| Peak-hour factor, PHF  | 0.92  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)        | 86    | 668   | 297  | 42   | 314  | 3    | 741   | 176   | 57   | 29   | 321  | 97   |
| RTOR Reduction (vph)   | 0     | 51    | 0    | 0    | 1    | 0    | 0     | 11    | 0    | 0    | 0    | 40   |
| Lane Group Flow (vph)  | 86    | 914   | 0    | 42   | 316  | 0    | 741   | 222   | 0    | 0    | 350  | 57   |
| Turn Type              | pm+pt |       |      | Perm |      |      | Perm  |       |      | Perm |      | Perm |
| Protected Phases       | 1     | 6     |      |      | 2    |      |       | 4     |      |      |      | 8    |
| Permitted Phases       | 6     |       |      | 2    |      |      | 4     |       |      | 8    |      | 8    |
| Actuated Green, G (s)  | 31.7  | 31.7  |      | 20.2 | 20.2 |      | 56.2  | 56.2  |      |      | 56.2 | 56.2 |
| Effective Green, g (s) | 33.0  | 33.0  |      | 21.5 | 21.5 |      | 59.0  | 59.0  |      |      | 59.0 | 59.0 |
| Actuated g/C Ratio     | 0.33  | 0.33  |      | 0.22 | 0.22 |      | 0.59  | 0.59  |      |      | 0.59 | 0.59 |
| Clearance Time (s)     | 5.6   | 5.3   |      | 5.3  | 5.3  |      | 6.8   | 6.8   |      |      | 6.8  | 6.8  |
| Vehicle Extension (s)  | 2.5   | 3.0   |      | 3.0  | 3.0  |      | 2.0   | 2.0   |      |      | 3.2  | 3.2  |
| Lane Grp Cap (vph)     | 310   | 1114  |      | 75   | 768  |      | 545   | 1058  |      |      | 1059 | 934  |
| v/s Ratio Prot         | 0.02  | c0.27 |      |      | 0.09 |      |       | 0.12  |      |      |      |      |
| v/s Ratio Perm         | 0.07  |       |      | 0.12 |      |      | c0.80 |       |      |      | 0.20 | 0.04 |
| v/c Ratio              | 0.28  | 0.82  |      | 0.56 | 0.41 |      | 1.36  | 0.21  |      |      | 0.33 | 0.06 |
| Uniform Delay, d1      | 24.0  | 30.8  |      | 35.0 | 33.8 |      | 20.5  | 9.6   |      |      | 10.4 | 8.7  |
| Progression Factor     | 0.40  | 0.39  |      | 1.00 | 1.00 |      | 1.00  | 1.00  |      |      | 1.00 | 1.00 |
| Incremental Delay, d2  | 0.2   | 3.2   |      | 26.9 | 1.6  |      | 173.5 | 0.0   |      |      | 0.2  | 0.0  |
| Delay (s)              | 9.8   | 15.1  |      | 61.9 | 35.4 |      | 194.0 | 9.6   |      |      | 10.6 | 8.7  |
| Level of Service       | A     | B     |      | E    | D    |      | F     | A     |      |      | B    | A    |
| Approach Delay (s)     |       | 14.7  |      |      | 38.5 |      |       | 149.9 |      |      | 10.2 |      |
| Approach LOS           |       | B     |      |      | D    |      |       | F     |      |      | B    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 63.5   | HCM Level of Service | E   |
| HCM Volume to Capacity ratio      | 1.17   |                      |     |
| Actuated Cycle Length (s)         | 100.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 103.9% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |

c Critical Lane Group



| Movement                          | EBT  | EBR  | WBL   | WBT  | NBL                  | NBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Right Turn Channelized            |      |      |       |      |                      |      |
| Volume (veh/h)                    | 508  | 102  | 205   | 55   | 284                  | 53   |
| Peak Hour Factor                  | 0.92 | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 |
| Hourly flow rate (vph)            | 552  | 111  | 223   | 60   | 309                  | 58   |
| Approach Volume (veh/h)           | 663  |      | 283   |      | 366                  |      |
| Crossing Volume (veh/h)           | 223  |      | 309   |      | 552                  |      |
| High Capacity (veh/h)             | 1163 |      | 1087  |      | 895                  |      |
| High v/c (veh/h)                  | 0.57 |      | 0.26  |      | 0.41                 |      |
| Low Capacity (veh/h)              | 960  |      | 891   |      | 721                  |      |
| Low v/c (veh/h)                   | 0.69 |      | 0.32  |      | 0.51                 |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Maximum v/c High                  |      |      | 0.57  |      |                      |      |
| Maximum v/c Low                   |      |      | 0.69  |      |                      |      |
| Intersection Capacity Utilization |      |      | 59.9% |      | ICU Level of Service | B    |

# ALASKA PACIFIC UNIVERSITY INSTITUTIONAL MASTER PLAN

Anchorage, Alaska    March 2016

