

UAF TRAILS AND GREENWAYS DRAFT REPORT



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Cover: Students make their way along Yukon Drive on a nice fall afternoon on the Fairbanks campus.
Photographer: Todd Paris

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Facilities Services

UAF Operations

UAF Parking

Geophysical Institute

Museum of the North

UAF Development Office

UAF Risk Management

Student Volunteer Participation at Wood Center Open House Meetings

ABBREVIATIONS

- AKDOT&PF - Alaska Dept. of Transportation and Public Facilities
- ARRC – Alaska Railroad Corporation
- CCHRC – Cold Climate Housing Research Center
- CMP – Campus Master Plan
- CRCD - College of Rural and Community Development
- FEF - Fairbanks Experimental Farm
- FMATS – Fairbanks Metropolitan Area Transportation System
- FMATS NMTP - Fairbanks Metropolitan Area Transportation System Non-Motorized Transportation Plan
- FNSB – Fairbanks North Star Borough
- LARS - Large Animal Research Station
- LOAC – Limits of Acceptable Change
- MPC – Master Planning Committee
- MBS - Moore Bartlett Skarland Complex (with Hess Commons)
- ROTC - Reserve Officer’s Training Corps
- Right-of-way - Right of Way
- SRC - Student Recreation Center
- TAG – Trails and Greenways Planning Effort
- UAF – University of Alaska Fairbanks



Thompson Drive with its wide sidewalk, lights, and landscaping offers a nice arrival to campus.
Photographer: Todd Paris

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Emily Russell, a new graduate student in Northern Studies, takes advantage of nice September weather on the Fairbanks campus. Photographer: Todd Paris

1. INTRODUCTION AND PROJECT DESCRIPTION

1.1. Purpose and Background

PURPOSE

The UAF Campus Master Plan provides high level guidance for the development of the UAF Campus. Additional planning and design tools are used to assist in translating the guidance provided by the Campus Master Plan into concrete developments for the campus. This UAF Trails and Greenways Plan (TAG) utilizes input from campus stakeholders to provide additional planning detail and guidance for the implementation of UAF Campus Master Plan objectives.

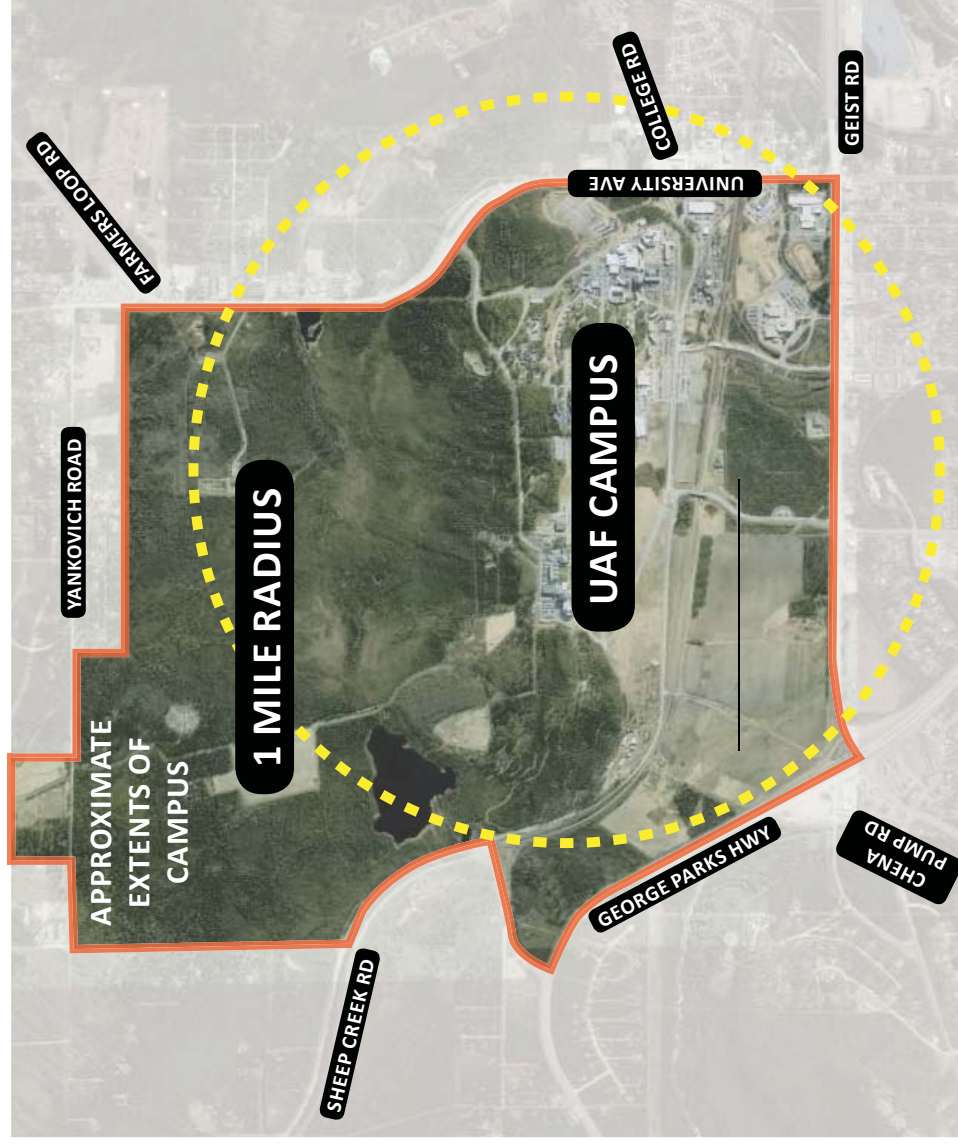
BACKGROUND AND CONTEXT

BDS Architects and Corvus Design Landscape Architecture and Planning were contracted by the University of Alaska Fairbanks to develop a Trails and Greenways Report for the Central Campus of UAF. The Trails and Greenway Report examines formal and informal pedestrian and bicycle pathways on campus as well as seasonal recreation trail uses and areas of cultural/historical significance. The purpose of the document is to prioritize trail improvements and the preservation and connection of open spaces and greenways in the focus area.

This project was initiated through a request from Chancellor Rogers that the Master Planning Committee (MPC) review current paths on the Fairbanks campus to identify areas where paths, trails, and connections to the City of Fairbanks and Fairbanks North Star Borough paths could be added or improved. Specific emphasis was placed on addressing safety issues, areas of existing and potential future user conflicts, as well as identifying and protecting natural pathways between the Wood Center and West Ridge. This request and direction for the MPC has been named the Chancellor's Trail Initiative. To respond to this initiative, the chair of the MPC formed a workgroup which outlined the scope of work for this project with the support of Chancellor Rogers.

Figure 1.1a illustrates that the UAF Central Campus fits within a one mile radius extending from a geographical center point near the Troth Yedha' Park. This amounts to an approximate

Figure 1.1a: UAF Context



12-15 minute walk from the center of campus to this 1 mile line. Within this mile radius from the heart of campus, one has access to businesses along Chena Pump Road, Geist Road, and University Ave. The major areas that funnel commuters to campus are College Road, Chena Pump Road, Sheep Creek Road, South of Geist Road, and Farmers Loop Road. General information indicates that a significant proportion of campus users travel between three to five miles to get to campus.

1.2. Background

CHANCELLOR'S TRAIL INITIATIVE

As received from the Chancellor, the direction for a trail initiative was: "To work with interested constituencies to develop a plan for UAF that provides the administration with prioritized guidance for new trail projects. I envision a plan that identifies gaps in our trails, improvements needed to trails, and proposed new trails, to include:

- Bike trails (commuter and recreational).
- Ski trails (commuter, recreational, and summer roller ski).
- Walking, snowshoe, dog trails.
- Disc golf course - current and proposed recreational and competitive courses
- Motorized access trails (snow machine and ATV, if any)

Identify priorities and work our way down the list as funding allows."

PROJECT AREA

The project area for the Trails and Greenways Plan is illustrated in Figure 1.1b.

The focus for the TAG is the UAF Central Campus. This is bordered on the west by the Botanical Gardens, on the east by University Ave on the east, to the south by Geist Road and to the north by the New North Tanana Road. Special attention will be paid to the areas focused on by the Chancellor's Trail Initiative request (to West Ridge trail), and the connections between UAF Central Campus areas and gateways to North Campus and the community.

This document does not include planning or recommendations for UAF North Campus, where the majority of recreational trails on campus exist. The North Campus encompasses many uses for the university and the community, including research, recreation, and education. While this TAG report does not regulate or plan North Campus trails, it is guided by North Campus guiding documents and plans for ways in which

Campus Core users can more easily access North Campus trail opportunities.

UNOFFICIAL NAMES

Many areas of campus have unofficial names for features. For ease of discussion within this document, the generally accepted names have been adopted for communication convenience:

- Campus Core - the area from Moore Bartlett Skarland, east to Farmers Loop and University Ave, including the Wood Center, Constitution Plaza, Cornerstone Plaza, Patty Center, SRC, and the Physical Plant.
- UAF Central Campus - the area of campus excluding North Campus Area
- Himalaya Trail - the area and trails north of the SRC and Patty Center
- Patty Stairs - the existing stairs south of Moore Bartlett Skarland Complex and Yukon Drive, east of the Patty Center
- Butrovich Hill - the hill south of Butrovich Building

Figure 1.1b: Approximate Project Area



- Tanana Loop slope (Butrovich Hill road) - the section of Tanana Loop that climbs Butrovich Hill
- New North Tanana Drive - this is the extension of North Tanana

GUIDING DOCUMENTS

UAF MISSION STATEMENT

“The University of Alaska Fairbanks, the nation’s northernmost Land, Sea and Space Grant university and international research center, advances and disseminates knowledge through teaching, research and public service with an emphasis on Alaska, the circumpolar North and their diverse peoples.”

UAF (America’s arctic university) promotes academic excellence, student success and lifelong learning.

UAF MASTER PLAN

www.uaf.edu/files/fs/CampusMasterPlan2010.pdf

The 2010 Campus Master Plan (CMP) is the current adopted master plan for the UAF campus. General guidance from the master plan includes that the campus master plan strives to create a campus environment that supports the institutional mission of UAF. The plan seeks to strengthen the academic experience for students by fostering the integration of teaching and research facilities and improving connectivity across the campus. The plan also endeavors to create a campus environment that reflects its unique natural and cultural setting, incorporating sustainability practices that are pertinent to UAF’s northern location.

The development and implementation of the TAG document will support the 2010 CMP goals. These goals are:

- Support the integration of teaching and research through building location and use, circulation and open space.
- Ensure the campus environment enhances both the academic and student life experience.
- Improve access to and circulation within the campus.
- Preserve and highlight the unique natural and cultural aspects of UAF’s northern location.
- Enhance space quality and maximize effective utilization. Employ

best practices in sustainability for northern environments.

The TAG document specifically supports the following CMP long-term plans:

- A strengthened campus spine with new facilities along Yukon Drive.
- Higher density student housing with better connections to facilities on [Campus Core]
- Increased gathering spaces for residential and commuter students.
- Entrance gateway on [Campus Core]
- East-west campus greenway.

UAF DRAFT COMPREHENSIVE SIDEWALK AND TRAILS PLAN

This document (revised 10-11-2013) is currently in development and intends to guide the planning and construction of sidewalks and trails campus-wide, as well as from connector routes to campus. This document is guided by the Complete Street concepts of the National Complete Streets Coalition. The main principles are to design and accommodate user safety, prioritize pedestrian movement, develop with sensitivity to the surrounding context, and mitigate potential environmental impacts. This effort’s goals overlap with those of the TAG planning effort, and its direction will be influenced by the final TAG Report.

NORTH CAMPUS PLAN, JUNE 2004

www.uaf.edu/mastplan/committee/subcommittees/north-campus/north-campus-area-master/

This document in general, and specifically Appendix N, Proposed Trail Connections from UAF Central Campus to North Campus, describes UAF Central Campus missing links that would better connect areas within the developed campus, between UAF Central Campus and North Campus, and better clarity for commuting to and from campus. The TAG planning effort duplicates and modifies recommendations from this document. In many cases the TAG document borrows language or concepts from the North Campus Plan.

UAF PARKING PLAN 2004

www.uaf.edu/mastplan/committee/subcommittees/circulation-parking/

This document, specifically Section 5, discusses the need for the improvement and completion of non-motorized circulation on campus. Many of the visions and designs for trail types have been carried forward within the TAG effort.

UAF EXTERIOR LIGHTING PLAN DRAFT 2013

This draft document (not yet approved at the creation of the TAG Report) makes recommendations to improve trail lighting in several locations, with priority placed on addressing path safety through illumination.

TROTH YEDDHA' PARK PLAN 2010

www.uaf.edu/files/mastplan/Troth-Yeddha-Pk-Plan-May13_2010.pdf

Planning for Troth Yeddha' Park has been incorporated into the TAG document at the planning level. If construction of the proposed trail connections running through the park begin before construction of the park designs, further review will be needed to ensure trail alignments anticipate final park

layout, or provide temporary trail connections that allow for modifications based on final park designs.

FMATS NON-MOTORIZED TRANSPORTATION PLAN 2012 (FMATS NMTP) AND BIKEWAYS MAP

fmats.us/wp-content/uploads/2012/08/fmats-nmtp-2012.pdf

fmats.us/wp-content/uploads/2012/08/FMATS-BikeWays-Map.pdf

This NMTP was adopted March 2012 and many of its recommendations for campus and near-campus roadways and connections are reflected in the TAG report. The Bikeways map was updated in April 2014.

GREEN BIKES SAFETY PROPOSAL 2013

Green Bikes is a student organization funded through the UAF Office of Sustainability. They offer long-term bike rentals and mechanical help for cyclists across campus and beyond.

In fall of 2013, the group presented a bike safety proposal that addressed the three highest areas of concern on campus for them. The areas included the Sheep Creek Road area, the Tanana Loop slope (Butrovich Hill road), and the South Chandalar/Alumni Drive intersection (south of Lola Tilly).

These items are addressed within the TAG document as priority areas.

FNSB COMPREHENSIVE RECREATION TRAIL PLAN 2006

co.fairbanks.ak.us/parksandrecreation/Forms/Trails/TrailsCompPlan.pdf

This document provides helpful background information on the trails planning efforts in the community as well as maps of Borough and city-wide trails. The TAG Report goals including providing better access to trails and greenways surrounding the campus.

STRATEGIC VISION OF THE OFFICE OF SUSTAINABILITY

www.uaf.edu/files/sustainability/commitments/CSTT.SustainabilityReportFinal.pdf

The UAF Office of Sustainability has completed a report that outlines Sustainable Goals for UAF. The TAG report supports this effort and recommends improvements that will assist with achieving these goals.

UAF ONLINE TRAIL MAPS

www.uaf.edu/fs/northcampus/trailmaps/

These maps provide “snapshot in time” assessments of recognized trails on campus, but do not include a number of informal trails.

PROCESS

CAMPUS MASTER PLANNING COMMITTEE

The project was initiated with a MPC kick-off meeting where the intended process for the project was reviewed and the MPC provided initial information.

DISCOVERY WEEK

The main tool for engaging with stakeholders was a 'Discovery Week'. Invitations were sent to targeted stakeholder groups with a request scheduling of a session during the week. Included within this invitation was a description of the project, a map of the project area, and a survey.



Discovery Week consisted of four consecutive days of meetings in November, 2013. Stakeholders attended pre-arranged meetings during that time or dropped by during open sessions. The goal of this week of meetings was to listen to how people used campus trails, how they got to and from campus, their recreational activities on campus and how visitors experience the campus.

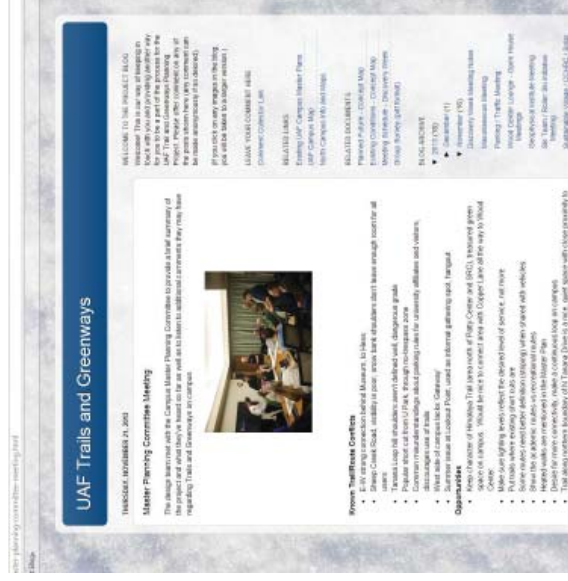
Components of this were two evening open house style meetings at the Wood Center where the community and students were invited to attend and provide trail knowledge.

Each session involved an informal presentation of the project, with the focus being on gathering information from those present that related to general likes and dislikes for the current trail system.

PROJECT BLOG AND
COMMENT COLLECTOR

www.uaf-tag.blogspot.com

A project blog was created in the fall of 2013 with the intent to summarize the ongoing process, and to provide additional ways for people to provide information or engage in discussion. Summary notes of Discovery Week meetings were provided on the blog to allow people to see how the discussion was developing, in addition to submitted comments and surveys.



WHAT WE'VE HEARD...

Below are some of the comments we've received from the online comment collector.

WHAT OPPORTUNITIES DO YOU SEE FOR TRAILS AND GREENWAYS ON CAMPUS?

"A walking trail between west ridge and the SRC would be highly desirable. Many of us walk a trail that starts near Butrovich and ends up behind the ice climbing wall..."

"Tying the Interior-Aleutians Campus building [Harper Building] (4280 Geist Road) via the community gardens [Fairbanks Street Bridge] up to Troth Yeddha' would be a good way to bring various locations around the Fairbanks campus to the Troth Yeddha' location, as it has special cultural significance."

"If there were visible reminders of various location points of the Troth Yeddha' greenspace, that would bring some coherency to the campus layout. It would also speak to the bridging of cultures."

"Minimize the impact of wide skating ski trails and maintain as many diagonal stride ski trails as possible... Please keep in mind those of us who crave the peace, solitude and closeness of narrow trails with overhanging branches little changed from their natural state."

"...UAF should pave [the new North Tanana] road, thus connecting all of the buildings and parking lots to a paved roadway and close off [Yukon Drive] to vehicular traffic (except for campus/city buses) allowing for a safe, scenic greenway to be developed that allows for fast travel by bus while discouraging the use of cars to travel between the ends of campus."

"I would like to see an emphasis on access points from many campus locations to get more people out walking or skiing the trails on a daily basis."

"The extended shoulder that was put in on Tanana Loop (aka Butrovich Hill) never was painted. It was also only on one side of the road so it's not a real bike lane. It would improve safety and quality of life to have bike lanes on all campus roads. It also lends legitimacy to biking and shows that the campus is committed to sustainable transportation."

WHAT CONFLICTS OR OBSTACLES DO YOU SEE FOR TRAILS AND GREENWAYS ON CAMPUS?

"I don't know whose responsibility it is to fund, build and maintain [Sheep Creek Road near the Botanical Gardens] but in the interests of safety of students and faculty and all users (which amount to several hundred each day) as well as improved motorist and non-motorist relations, I ask that you make it a priority to have the situation corrected as soon as it is possible given fiscal and temporal constraints. It's a bad stretch that needs some serious attention."

"Not enough space left to avoid conflicts between various user groups including the often forgotten research value of the arboretum."

1.3. Goals

Improving trails and greenways within the UAF Campus will meet critical needs for academic use while also enhancing access for visitors and recreational users on campus. Below are the three main goals for Trails and Greenways on the campus.

GOAL 1 – PROVIDE SAFE, CONVENIENT, COMFORTABLE, NON-MOTORIZED CONNECTIONS ON CAMPUS.

The intent of this goal is to move faculty, staff, students and visitors efficiently and safely from where their on-campus journey begins to where it ends.

Objectives:

- Develop a continuous network of routes that provide options for the many campus user groups.
- Help users understand available route options by providing wayfinding information including maps and online resources.

- Provide a non-motorized transportation system that prioritizes safety.
- As feasible, implement Universal Access tenets to improve accessibility.
- Identify discontinuous routes on campus. Prioritize routes to be completed.
- Identify key problem areas for user safety. Prioritize improvements within those areas.
- Develop trail and greenway design standards that meet the needs of the users and can be accommodated by existing maintenance staff.
- Regularly evaluate the need for plan revisions or additions.

GOAL 2 – DESIGN CONNECTIONS AND SPACES THAT ENHANCE THE EXPERIENCE ON CAMPUS.

The intent of this goal is to provide additional routes and amenities that enhance the travel experience on campus.

Objectives:

- Provide clear and easily accessible connections between key campus destination points (such as the Georgeson Botanical Gardens, the UA Museum of the North, Troth Yeddha', the Bookstore, Cornerstone Plaza, and the Cold Climate Housing Research Center).
- Highlight the most attractive features on campus including views, natural features, research and history.
- Maintain and preserve key open spaces and natural areas Install interpretive signage along trails to provide environmental, cultural and historical information

GOAL 3 – PROMOTE NON-MOTORIZED USES ON CAMPUS TO SUPPORT UAF'S WELLNESS INITIATIVES AND SUSTAINABLE ETHIC.

The intent of this goal is to provide recreational opportunities on campus and to connect to recreational and commuter facilities around the campus.

Objectives:

- Enhance access from various areas of campus to the North Campus trail system.
- Ensure that major entry points to campus are connected to the non-motorized route network.
- Decrease the number of cars on campus by making non-motorized travel safe and convenient through a comprehensive sidewalk, trails, and shuttle network.
- Improve the overall quality of the environment on campus by decreasing motorized travel on campus roadways.
- Support wellness initiatives that promote pedestrian and non-motorized travel and activities.

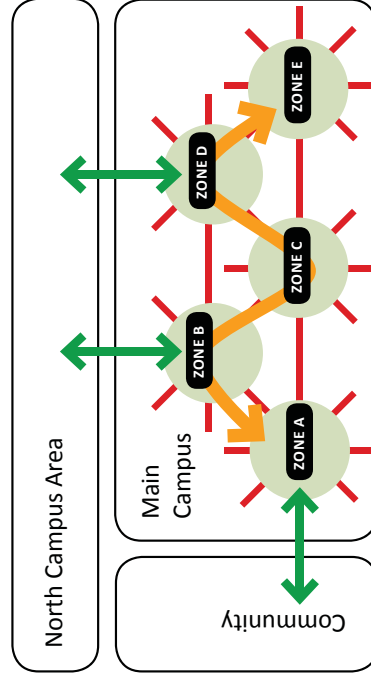
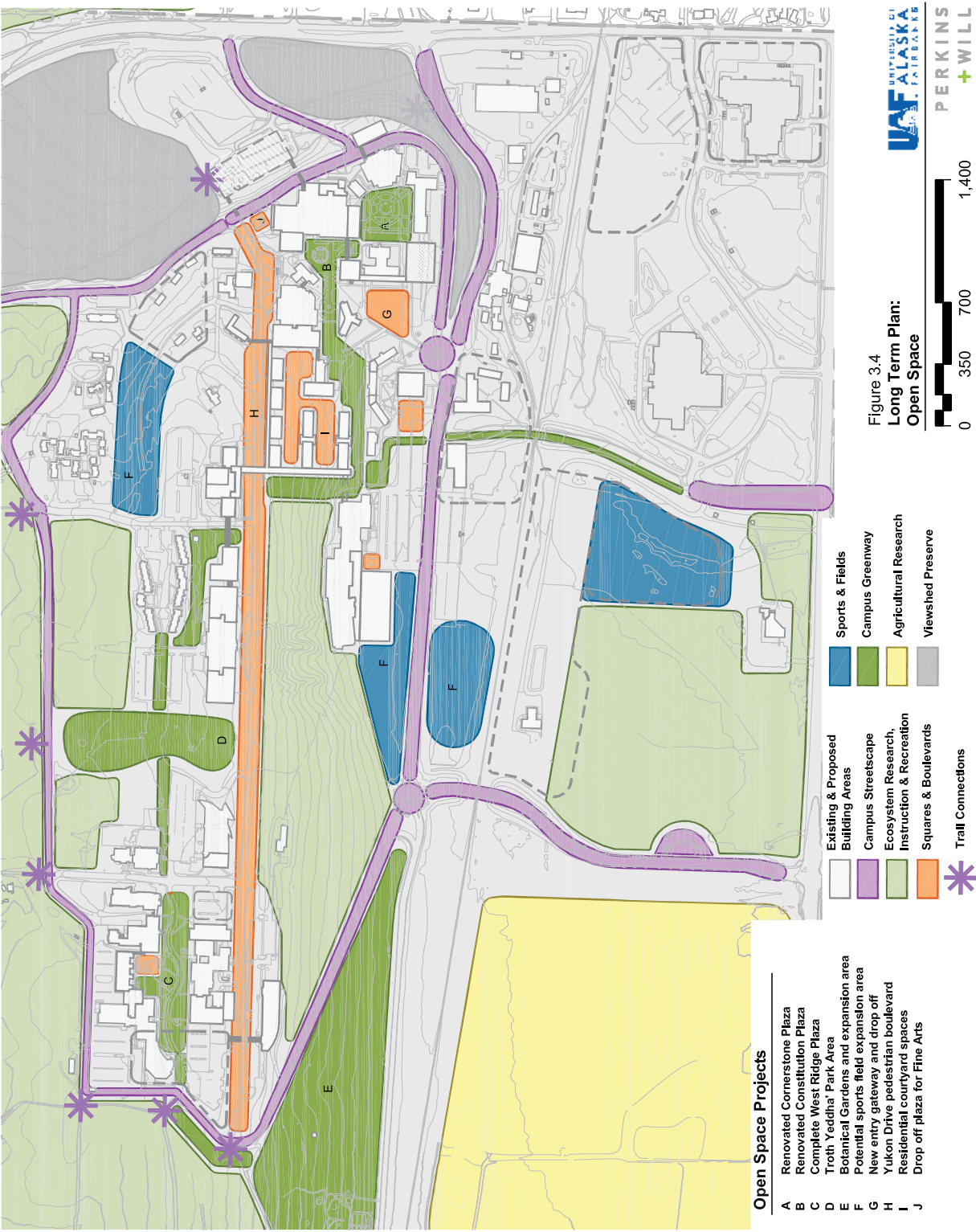


Figure 1.3a: UAF Central Campus Concept

The diagram above summarizes the goals of the TAG Report. It illustrates how Goal 1 (red) connections are numerous and direct, Goal 2 (orange) connections are about the experience of moving between the zones on campus, and Goal 3 (green) connections are about how the UAF Central Campus connects with the surroundings.

The Long Term Open Space Plan (Figure 1.3b) from the CMP serves as an initial guiding concept plan for the TAG report. This illustrates the emphasis to be placed on streetscapes and amenities for main circulation routes (purple), and the importance of nodes or gateways to the North Campus Trails (shown as purple stars). Orange highlights areas of opportunity for strengthening the desired pedestrian mall or boulevard character. This figure also shows Campus greenways as highlighted in dark green.

Figure 1.3b: Long Term Open Space Plan from Campus Master Plan 2010



1.4. Existing Conditions

EXISTING CONDITIONS SUMMARY

GENERAL

The UAF Central Campus area has relatively modest slopes east to west and significant areas of steeper slopes north to south. East-west Campus movement is convenient and easy for most pedestrian activities and consists of well developed routes. North-south movement is challenged by terrain immediately south of Yukon Drive and obstructed by the railway right-of-way south of Tanana Loop. Existing north-south pathways are much fewer and usually include stairs and ramps.

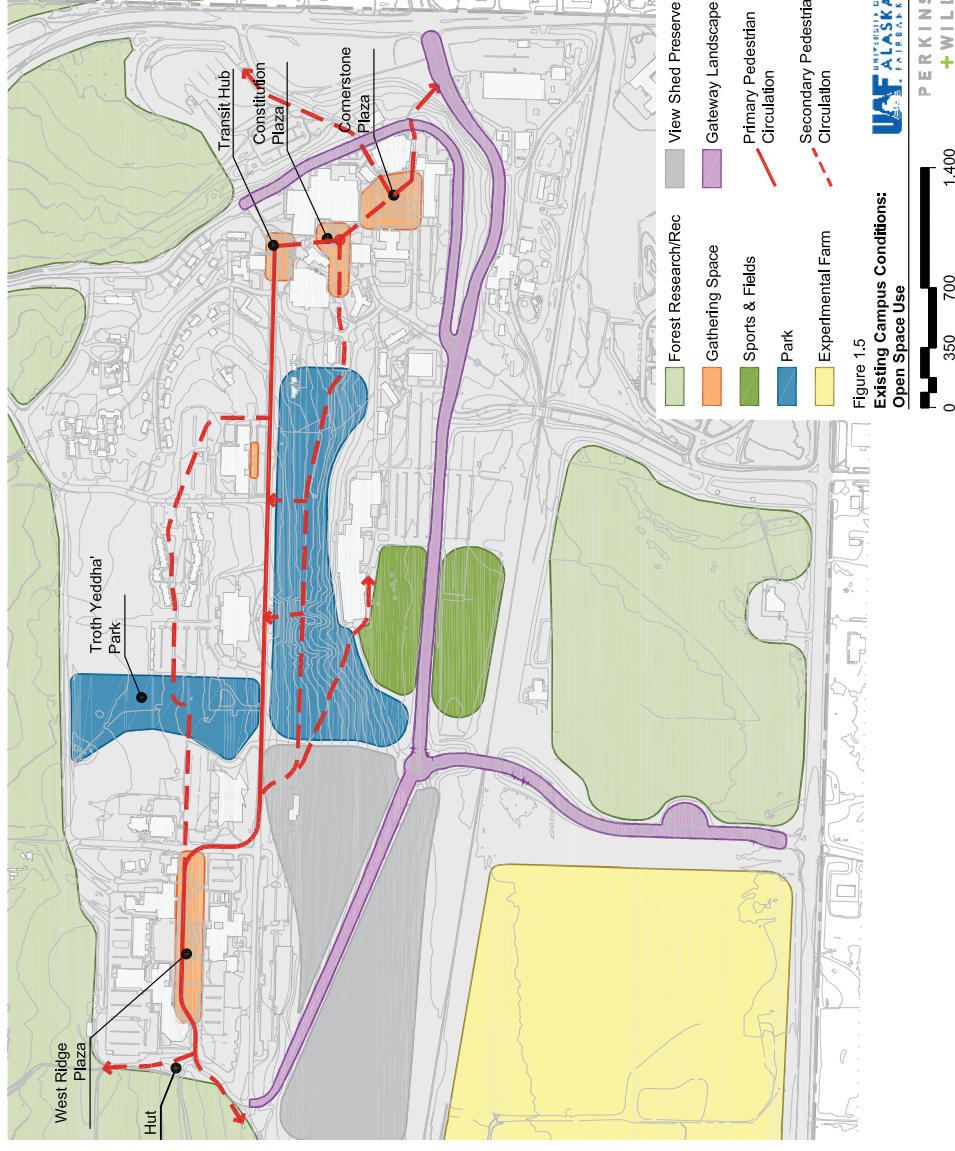
For the purpose of discussing existing connections on campus, the campus can be divided into three different elevations. The high elevation level includes Yukon Drive, West Ridge, Troth Yedtha' Park, and New North Tanana Drive. The mid elevation level sits just below Yukon Drive including SRC, Wood Center, Cornerstone Plaza, etc. The low elevation level includes areas south of Tanana Loop including CCHRC, Sustainable Village, Taku Lot, and the Power Plant.

Within these levels, West Ridge and Campus Core areas serve as a major non-motorized hubs on the high and mid levels. See Figure 1.4a for a diagrammatic view showing locations of these two hubs (noted as gathering areas and shown in orange) and common routes between them.

EAST-WEST ROUTES

A large volume of non-motorized traffic moves between and within West Ridge and the Campus Core. Between these two hubs, Yukon Drive is a common east-west route for non-motorized use but has narrow sidewalks for a main connector and the pedestrian volume it sees. Sidewalks are also discontinuous along Yukon Drive. As an alternate, some people use the 'Himalaya Trails' in the woods north of the SRC and Patty Center. As an area and as a travel route, this area is valued as a centrally located natural area and as a more direct

Figure 1.4a: Existing Open Space Plan from Campus Master Plan



east-west route between West Ridge and the Campus Core.

There is an informal east-west route that currently connects the north side of the Moore Bartlett Skarland Complex, north of Reichardt, through the Museum parking lot to West Ridge area. This well-traveled route uses parking lot and fire lane infrastructure.

NORTH-SOUTH ROUTES

Because the campus has three elevation levels that are spread out on an east-west axis, north-south routes generally have steeper grades that require stair or ramp facilities. This is primarily an issue on the north and south sides of Yukon Drive, as well as at Butrovich Hill, the Terrain Park, and Taku Lot. In the case of the Himalaya Trail area, the Patty Center Stairs are well-used, however there are many undesignated footpaths that run north-south in this area and are evidence of a need for more stairs.

ADA ACCESS

Current ADA access on campus is likely best served by the UAF Shuttle. Some routes on campus may meet accessibility guidelines, but the Shuttle provides the only comprehensive accessible service between the three levels.

CAMPUS ACCESS FROM OUTSIDE

Sheep Creek Road and the commuter trail provide key routes for commuters from the west. Northwestern access, from the LARS area, is via T-field road (part of North Campus trails system).

From the south, most non-motorized access comes from Thompson Drive or Fairbanks Street bridge. Thompson Drive has an existing sidewalk along the east side. Non-motorized users traveling up Butrovich hill have a striped bike lane on the north side, however striping is not very visible in winter.

From the southwest, there is a heavily-used trail from the Chena Pump Road/Geist Ave area through the Experimental

Farm fields. Many users also cut north through the Botanical Gardens.

From the east, users are generally funneled through Alumni Drive sidewalks or stairways. Sidewalks are consistent until users reach the intersection of South Chandalar, where non-motorized routes become unclear.

From the north, non-motorized access comes from the north-south trail connection at North Tanana Drive. This connects from the Farmers Loop separated multi-use path. Once the trail reaches North Tanana Drive, sidewalks along Tanana Loop are inconsistent.

Access to the North Campus is a very important issue for campus users as the North Campus Area offers many recreational opportunities that are highly valued. The ski Hut area, Lookout Point, and the general West Ridge Area provide the UAF Central Campus connections to North Campus. Troth Yedha' Park is a proposed to serve as an additional trailhead and major access point for the North Campus trails. It has been noted that access to North Campus is not as easy for faculty, staff and students who are located on the eastern side of campus.

EXISTING TRAILS MAPPING

Many maps exist for trails on campus, including Figures 1.4b and 1.4c which summarize summer and winter trails. The majority of these trails are within the North Campus Area, with a few segments within the UAF Central Campus. It is important to see how North Campus trails are connected to the UAF Central Campus, specifically our project area. These have served as a reference for many of the maps created in the TAG document. There is also a UAF Trails App (available for smart phones) with several campus walking tour highlights as well as 'You Are Here' functionality.

Figure 1.4c: UAF Map for Existing Winter Trails

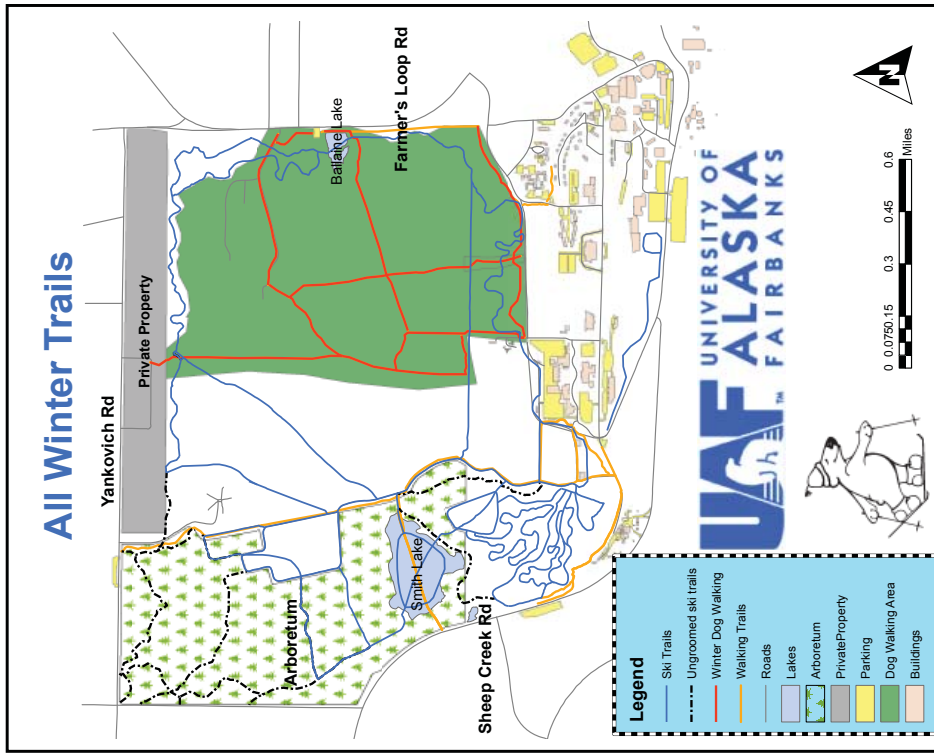


Figure 1.4b: UAF Map for Existing Summer Trails

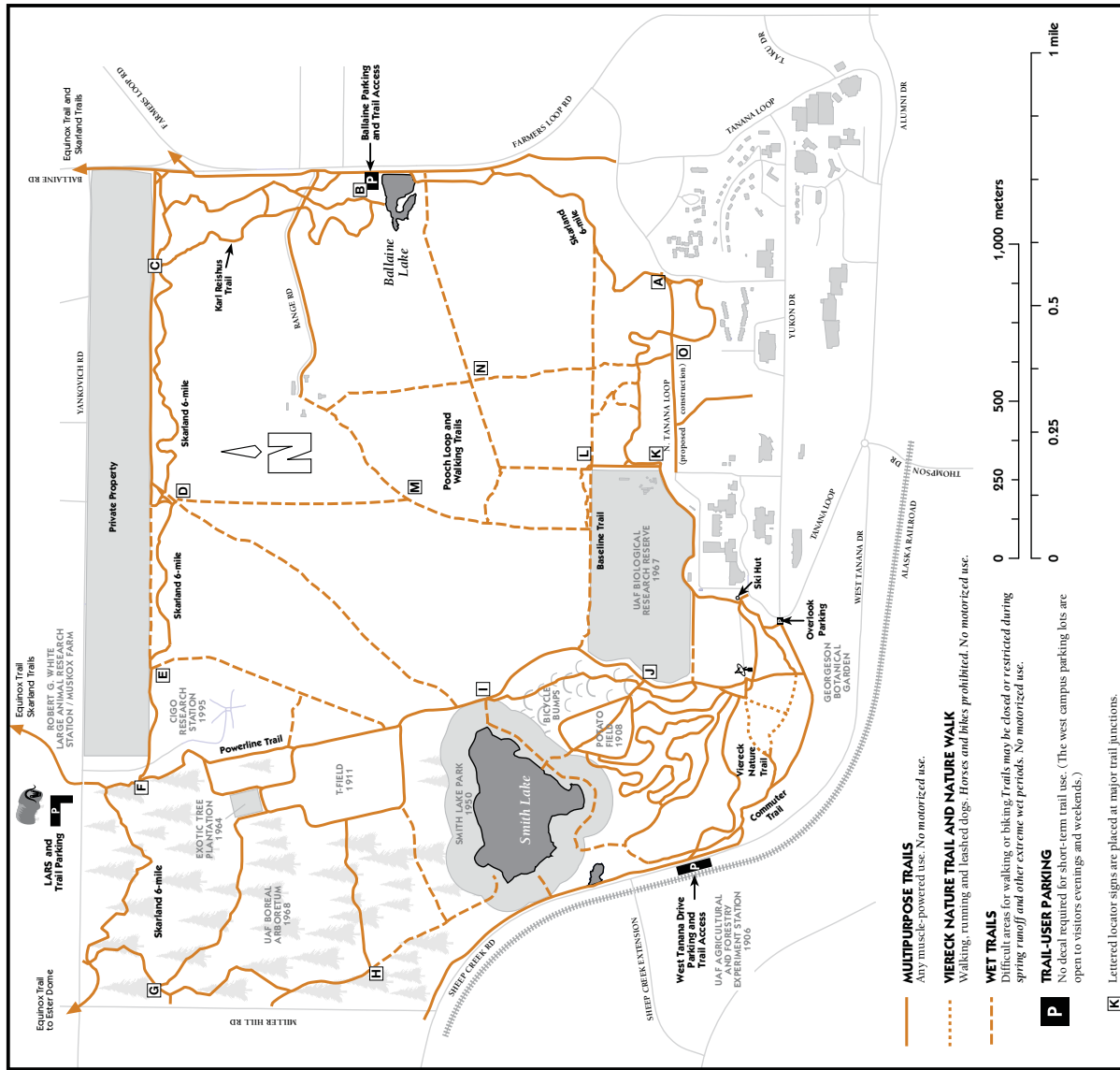


Figure 1.4d: Include graphic of Existing Conditions Map (done for Discovery Week)



This figure shows existing non-motorized routes on campus. The red lines highlight existing informal trails. These generally are occurring where there are missing pieces within the existing trails network. The red zones indicate areas of known conflicts.

1.5. User Groups

USER GROUPS AND REQUIREMENTS BY SEASON

When compared to most campuses, UAF stands unique in its ability to provide trails that serve almost the full-spectrum of trail users. This includes people moving from class-to-class, training of high-level athletes, visitors to the campus, and commuters.

This section briefly addresses the expected users for trails on the UAF campus, and some of their typical needs.

Different user groups have different trail requirements. In most cases one trail type can serve multiple user groups, however most trails are designed with one primary group of users in mind and then managed for multiple uses. Additionally, the skill of the user can also affect the requirements. Trails are typically designed for the average skilled user. The following narrative examines the needs of each identified user group.

OVERALL TRAIL ETIQUETTE ON CAMPUS:

While North Campus has their own regulations in place, the generally accepted etiquette for trail use on the entire campus includes the following guidelines:

- Tread lightly.
- Stay on designated trails.
- Respect the wildlife. Enjoy watching, but don't hassle them.
- No hunting or trapping.
- No motorized vehicles allowed on trails.
- Please respect the area, don't litter.

When it comes to pets on campus, the rules are more specific. UAF Pet Policy (05.09.001) states:

- The animal shall be restrained at all times.
- The animal handler or owner shall be responsible for the immediate disposal of animal waste.

- Animals may not be tethered to University buildings, structures, motor vehicles, trees, railings, light poles, benches, parking meters, posts, etc.
- The handler or owner shall assume all financial responsibility for damage to property or injury to individuals caused by the animal.

SUMMER, FALL, SPRING USER GROUPS

BICYCLING (ROAD)

For the purpose of this report, road cyclists includes both commuter cyclists as well as fitness cyclists. Commuter cyclists may have great variety in the style of bicycle they use, while fitness cyclists generally prefer road bikes with narrow tires that are designed for speed.

Both commuter cyclists and fitness cyclists are concerned with well-paved trails or bike lanes in roadways.

Commuter cyclists do not depend only on trails, but typically prefer them if they are direct and safe. These riders have different motivations for using a bicycle as their mode of transportation and will travel at high variations of speeds.

Fitness cyclists value trails or roads that allow them to travel at faster speeds with minimal user conflicts and typically like to travel longer distances. Trails attractive to fitness cyclists include the paved multi-use paths along the Parks Highway on ramp as well as Farmers Loop Road.

- Federal standards recommend a minimum trail width of eight to twelve feet with physical separation between two-way facilities and automobile traffic. Physical separation can either be in the form of a five foot (minimum) buffer or a railing. Trail crossings must be carefully designed and should be limited in number.
- Bike lanes that are adjoining vehicle traffic should be four foot width minimum with a 1-2' curb and gutter or if no curb and gutter exists, they should be four foot minimum with a four foot

adjacent roadway shoulder.

BICYCLING (MOUNTAIN)

Most mountain bikers seek natural and challenging trails and can cover much greater distance than a typical hiker. As part of a shared use system, it is usually most appropriate to design the path as a trail that is typically considered more of a beginner trail in terms of curve radii and trail obstacles.

- Typical mountain-biking trails with two-way travel requires a minimum of six feet horizontal clearance and eight to ten feet of vertical clearance.

ROLLER SKIING TRAILS

No roller skiing trails currently exist on the UAF campus. Roller skiers most often use paved road shoulders, bike lanes, or separated paved pathways like the one along Farmers Loop Road. As these routes are in close proximity to roads that use gravel during icy seasons, the conditions are very dangerous. American precedents for projects are a higher preference for local roller ski advocates than European trails. No real standard for roller skiing trails is currently in existence.

- Campus users recommended a twelve foot width, stable asphalt path with grade changes to accommodate practice and conditioning.

DISC GOLF

Disc golf players using the trails around Hess Village have no specific trail needs. It has been noted that with well-defined trails there may be less conflict between residents in the area and the players. There is an existing 18-hole disc golf course on the North Campus ski trails, near Smith Lake. The course on UAF Central Campus is 9-holes and near Hess Village.

WINTER SEASON USER GROUPS

CROSS-COUNTRY SKI TRAILS

There are two basic types of cross-country skiing: skate skiing and classic skiing. Classic cross-country skiing uses a set of tracks and the skis follow the pre-laid tracks along the course. Skate skiing uses a motion similar to in-line skating. Often these uses are combined on one trail. Cross-country skiers often place a high value on the connection to nature and recreational activity that skiing provides.

- For classic ski two-way travel the recommended trail width is eight to ten feet wide.
- For skate ski two-way travel the recommended trail width is ten to fourteen feet wide.
- The width of a combined trail varies from twelve to twenty feet wide depending on the level of use and availability of space. Vertical clearance required for ski trails is similar to that of hiking trails, but should also take snow load into consideration.



Frank Olive, assistant coordinator of programming for UAF Outdoor Adventures, rides his bike to work on campus on a spring afternoon.
Photo: Todd Paris

- Cross-country ski trails can utilize trail corridors that are either natural or hard surfaces. Snow will melt faster on hard surfaces, but a hard surface tread will be more level and easier to maintain with grooming equipment. The preferred site distance is one-hundred feet and the minimum is fifty feet.

SNOWSHOEING AND WALKING

Snowshoers do not typically travel more than a few miles and require trail widths similar to hikers or classic cross-country skiers (when off-trail). Typically a natural surface hiking trail is used by snowshoers once the snow is too deep to hike in.

Snowshoers are permitted on designated snowshoeing and walking trails only.

BICYCLING (FAT TIRE)

With tires in the range of 4" in width, fat tire bikes offer significantly more grip than the average winter commuter bike as well as provide more ability to 'float' on soft surface snow. Most fat tire bikes do not have suspension and typically ride with less pressure in the tires. These bicyclists like to use groomed trails, as tires can sink too much in deep, ungroomed snow. They share trail condition preferences with other trail-using cyclists, although they generally have the ability to go into areas with less-maintenance.

SKIJORING

Skijoring is not currently allowed on campus, excluding certain special events (like the Pulk Skijor Races). There are proposed trail locations for skijoring including the area near the Nenana Parking lot as well as the area and trails off of Thompson Drive, southwest of the Sustainable Village. These trails and locations for skijoring are proposed and have not been approved yet.

Skijor teams typically have one to two dogs with one skier, and have similar trail width requirements to classic cross-country skiers. It is not desirable to have skijor share trails with skiers as the dogs damage groomed trails and would require more maintenance. There may be options for skijor trails to be shared with snowshoe trails and dog walking trails. Sharing of trails is made more comfortable with good sight lines, and generous trail widths.

- Most skijor teams travel a speed of 10-14 miles per hour and have similar requirements for sight distance as a mountain bicyclists.

ALL SEASON USER GROUPS

RUNNING/JOGGING/RACES

UAF trails are common to runners and joggers on campus and within the community. Many of the races held by 'Running Club North' either start from the Patty Center and traverse through campus trails or roads. The Equinox Marathon, known for being a challenging marathon and a very popular community event, begins and ends at the Patty Center. Some runners prefer natural surface trails for softer impact, while some prefer paved and smooth surfaces. They have a very wide range of preferences and generally can traverse most types of terrain or trails. Provision of a variety of trails is ideal so that routes and race routes can accommodate a variety of skill levels and desires. Winter running trails require a firmer base, similar to fat tire bicycle trails.

WALKING

Walkers are a flexible user group that can traverse most path types. This group includes other passive user groups like bird watchers, berry pickers, education and research access, and wildlife viewers that don't have specific trail requirements.

Most paved trails designed for pedestrians are designed to a standard suitable width for users of all abilities, including individuals who are disabled, families with small children and elderly individuals. Walkers will have minimal impact to the compaction and displacement of the trail surface. Walkers experience the corridor at a slower pace than other user groups, so careful consideration must be paid to views and creating the trail user experience. Another use of these UAF trails are for Reserve Officer's Training Corps (ROTC) training.

- Grades should be kept to an average of five percent or less and grades over six percent are only suitable for limited distances.
- Two-way travel requires a minimum of five to six feet horizontal clearance and eight to ten feet of vertical clearance.
- Walking trails of a more intimate scale are typically designed

with a tread width between eighteen inches and six feet.

- A typical walking trail designed for pedestrians to walk side-by-side or for two-way travel has a tread width of three to six feet.
- In addition to horizontal space, vertical clearance to overhead obstructions such as branches should be eight to ten feet.

DOG WALKING

Dog walkers have similar preferences to walkers, but a few additional design elements could be considered to better address issues that come up with dogs on trails.

- Regulatory signage should be posted at trailhead and wayfinding signage at trail intersections to inform users of pet etiquette on the trails as well as prevent them from wandering onto other trails that do not allow dogs.
- Dog refuse stations should be provided to encourage owners to pick up after their animals.
- Sight distances should be kept open and vegetation trimmed back at corners, to allow dog walkers to see other trail users.

1.6. Trail Types Visual Definitions

TRAIL TYPES OUTLINED IN MAPS



MULTI-USE PATH - PAVED SURFACE

8-12' width paved surface (asphalt or concrete), with shoulders. Appropriate for all uses where space allows. Accommodates uses of faster speeds better than sidewalks. Maintenance regime may vary by use. This type of trail is most often separated from a road right-of-way, or not aligned with a road at all.



MULTI-USE PATH - NATURAL SURFACE

4-12' width natural surface trail, with shoulders. Appropriate for all uses where space allows, except for road biking and roller skiing. Surface material may vary from compacted earth to compacted gravel. Winter use may vary from summer use.



SIDEWALK

3-8' width paved surface (concrete) that primarily serves walking uses (walking, dog walking, etc.) and can accommodate user groups with wheels, but only at lower speeds. Where sidewalk is adjoining roadway, minimum width should be 8' from back of curb.



FOOTPATH

Informal 2-3' width, natural surface trail. Can accommodate most user groups, but best accommodates foot traffic, like walkers, dog walkers, etc. This path is often created by users to fill an unmet trail need. UAF can choose to maintain them based on the evaluation of that need, or improve them (see Limits of Acceptable Change, see Section 6).



BIKE LANE, ADJOINING

Striped bike lane within the road profile with a standard recommended width of 4' minimum with a 4' shoulder (or a 1-2' curb and gutter). Intended for commuter cyclists and recreational cyclists, but can accommodate other user groups. Good alternative to multi-use path (paved surface) when space within road right-of-way is not sufficient. Needs constant winter maintenance and striping is often not visible during winter months.



SKI TRAIL

While either of the multi-use path types may be groomed in the winter months for skiing, the paths identified as 'Ski Trails' are intended for skiing during winter months, with other user groups being excluded. Like all other ski trails on campus, they may accommodate all other user groups during other seasons.



BRIDGES

Bridges or boardwalks need to be designed based on the heaviest expected maintenance equipment types. Metal grating is the preferred surfacing material as it requires little maintenance in this climate.



NODE

A node serves as an indirect wayfinding tool or resting spot for trail users that have come to an important path intersection. Nodes can vary in level of improvements, from a simple wayfinding sign to a more significant place that may include a bench, lighting, signage and additional amenities. The node located at the top of the existing stairs on Yukon Drive (image above) indicates an important trail intersection with a change in paving, a large wayfinding sign, a concrete seat wall, and a vertical canopy. A node can also serve as a rest stop along a longer route, especially for those routes where visitors might benefit from seating, signage, and other features.



STAIRS

Stairs provide a direct route in areas of steep grade change. They should be designed with metal grating to reduce maintenance, and built to meet code including handrails. No overhead cover is necessary if metal grating is used.



CROSSWALKS

Crosswalks are painted or striped crossings within a roadway that signify to non-motorized users where it is safe and appropriate to cross vehicular traffic.

2. PROPOSED TRAILS AND GREENWAYS

Key Map for Zoning

RECOMMENDATIONS

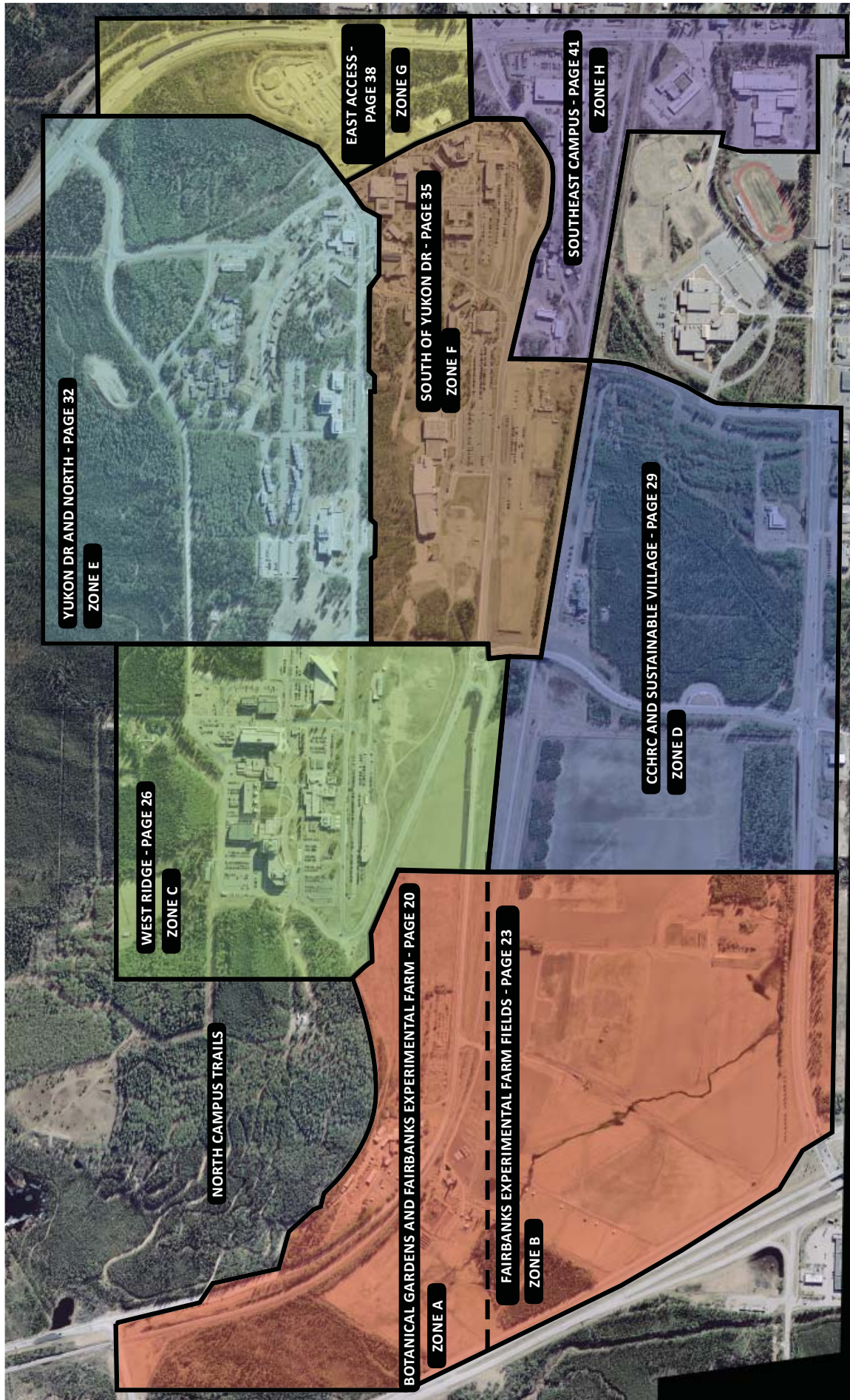
The design team listened to the concerns and desires of the stakeholders, faculty, staff and students and developed various options that they felt would allow safe travel between the primary amenities on campus. The specifics of inter-agency coordination, funding, and management are details that are currently being discussed and it is assumed that there will be coordination and cooperation to realize the construction and maintenance of these improvements (See Section 4.0 for Priorities and Phasing).

The goal of this section is to identify development projects and rank them based on effort and needed immediacy of their implementation. This section provides specific assessment of relevant existing conditions, and proposed development for priorities.



Mechanical engineering major Adam McCombs rides his bike through the potato field towards campus on a foggy morning.
Photographer: Todd Paris

Figure 2.a: Campus Zones



2.1. Botanical Gardens and Fairbanks Experimental Farm (Zone A)

OVERVIEW:

The Fairbanks Experimental Farm (FEF) with related fields and pastures and the Georgeson Botanical Gardens are located in the southwest quadrant of the campus. The Botanical Garden and Reindeer Pens are a major outdoor attraction for visitors. The yards and fields are fenced to contain animals and protect experimental crops. The Botanical Garden and Farm primary access is from Sheep Creek Road. Pedestrian visitors from the campus use some informal trails that begin at the overlook parking area.

All trail discussions for the FEF or the Georgeson Botanical Gardens need to include the Farm Manager and Garden's Director to ensure necessary functions of these areas continue.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- Georgeson Botanical Gardens
- Reindeer Pens
- Informal FEF trails
- Access to developments west of Campus

CONSTRAINTS:

- There are several north/south short-cuts through the Gardens (the perimeter barbed wire fence is often cut where paths are desired). There is a secondary narrow entry in the fence near Lookout point, but this has low-visibility. The main issue with short-cuts is that the Botanical Gardens has a fee area near the parking lot, and these non-controlled routes result in (or are subject to) vandalism and erosion.
- The pavilion (originally put up to shade cattle) is often used by students informally, with access from Lookout Point.
- The Gardens' parking area at the main entry is generally undersized, and there is not enough parking for popular events like Music in the Garden (a weekly summer event).
- There are safety concerns with parking along Sheep Creek Road to take photos of reindeer and along Geist Road for migrating birds.
- Sight lines along Sheep Creek road are not enough for safe bike/vehicle travel, especially in winter and especially when vehicles are parked near the Reindeer Pens.



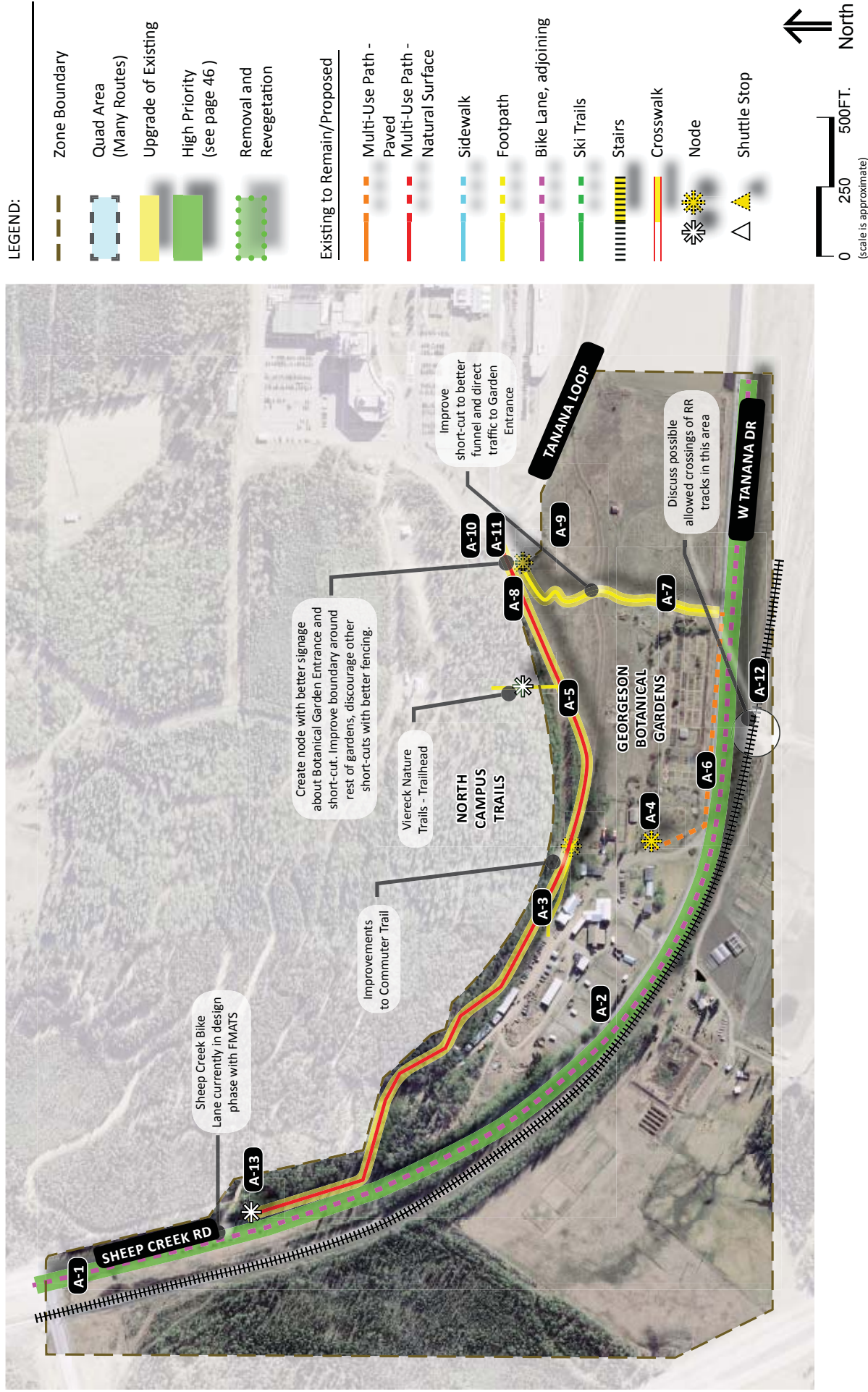
Image 2.1d: Popular north-south short cut through Botanical Gardens, from Commuter Trail.
Photo: Todd Paris

Figure 2.1a: Botanical Gardens and Fairbanks Experimental Farm (Zone A) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
A-1	Sheep Creek Road	Continue to coordinate with FMATS on bike path facility planned for north side of Sheep Creek Road. Investigate options to include better defined crossing for parking on west side of Sheep Creek Road to trails.	High	Low-High
A-2	Reindeer Location	Discuss opportunities to design safer vehicular pull-out area at reindeer pens.	High	Medium
A-3	Commuter Trails	Improve Commuter Trails to minimize flooding during shoulder seasons.	Monitor	Low
A-4	Botanical Gardens Entrance	Create node at Botanical Gardens entrance that helps funnel trail users to the main entry and fee station	Low	Low
A-5	Wayfinding Signage	Install wayfinding signage at nodes to better direct trail users.	Low	Low
A-6	Botanical Gardens Trail	Install path between Botanical Gardens main entrance and bottom of short-cut trail.	Medium	High
A-7	Botanical Gardens Short-Cut	Upgrade short-cut trail through Botanical Gardens with fencing and gates to allow users to see into the Gardens while directing them to a path along Sheep Creek Road that directs them to the main entry.	Medium	Low
A-8	Lookout Point Node	Create node at Lookout Point with clear signage and wayfinding information about the Botanical Gardens, Viereck Nature Trails, and the Commuter Trail.	High	Low
A-9	Botanical Garden Fencing	Provide better fencing and definition along the northern boundaries of Botanical Gardens.	High	Low
A-10	Botanical Garden Entry Connection	Discuss opportunities to better connect the main entry of the Botanical Gardens with campus.	Low	High
A-11	Lookout Point Campus Gateway	Discuss opportunities to create a campus gateway at Lookout Point that would welcome visitors and possible serve Botanical Gardens as indoor visitor center/hall rental/amphitheater.	Low	High
A-12	RR Tracks	Discuss opportunities to allow a crossing of tracks in this area and what design of that trail might look like.	High	High
A-13	Smith Lake Access	Include direct, multi-use (natural surface) path between parking lot and Smith Lake. Use bollards at entry point to prevent vehicle use.	High	Low

Note: Order of priorities shown is not based on level of importance

Figure 2.1b: Botanical Gardens and Fairbanks Experimental Farm (Zone A) - Mapping



2.2. Fairbanks Experimental Farm Fields (Zone B)

OVERVIEW:

This flat portion of the campus has been developed over time into maintained fields with some portions fenced, to support crop and animal research. It is bounded on the south, west and east by main vehicular routes and on the north by the Alaska Railroad right-of-way which has restricted farm activity access points.

It connects the west side of campus to the Fairbanks area and many popular commuter destinations located off Chena Pump Road. The FMATS NMTP lists the Geist Road and Parks Hwy intersection as having one of the highest counts for bicyclist and pedestrian usership in the Fairbanks area, with many conflicts for both user groups along this popular corridor.

The fields are popular with the community for dog walking and seasonally used by migrating birds and bird viewers.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- Viewing of migrating birds
- Fairbanks Experimental Farm trails
- Access to developments west of campus

CONSTRAINTS:

- There are safety concerns with parking along Sheep Creek Road to take photos of reindeer and along Geist Road for migrating birds.
- Some dog walkers use the fields to let their dogs off-leash.
- Off-leash dogs in research fields are a problem (leashed dogs are not) and can cause stress to the research animals.

OPPORTUNITIES:

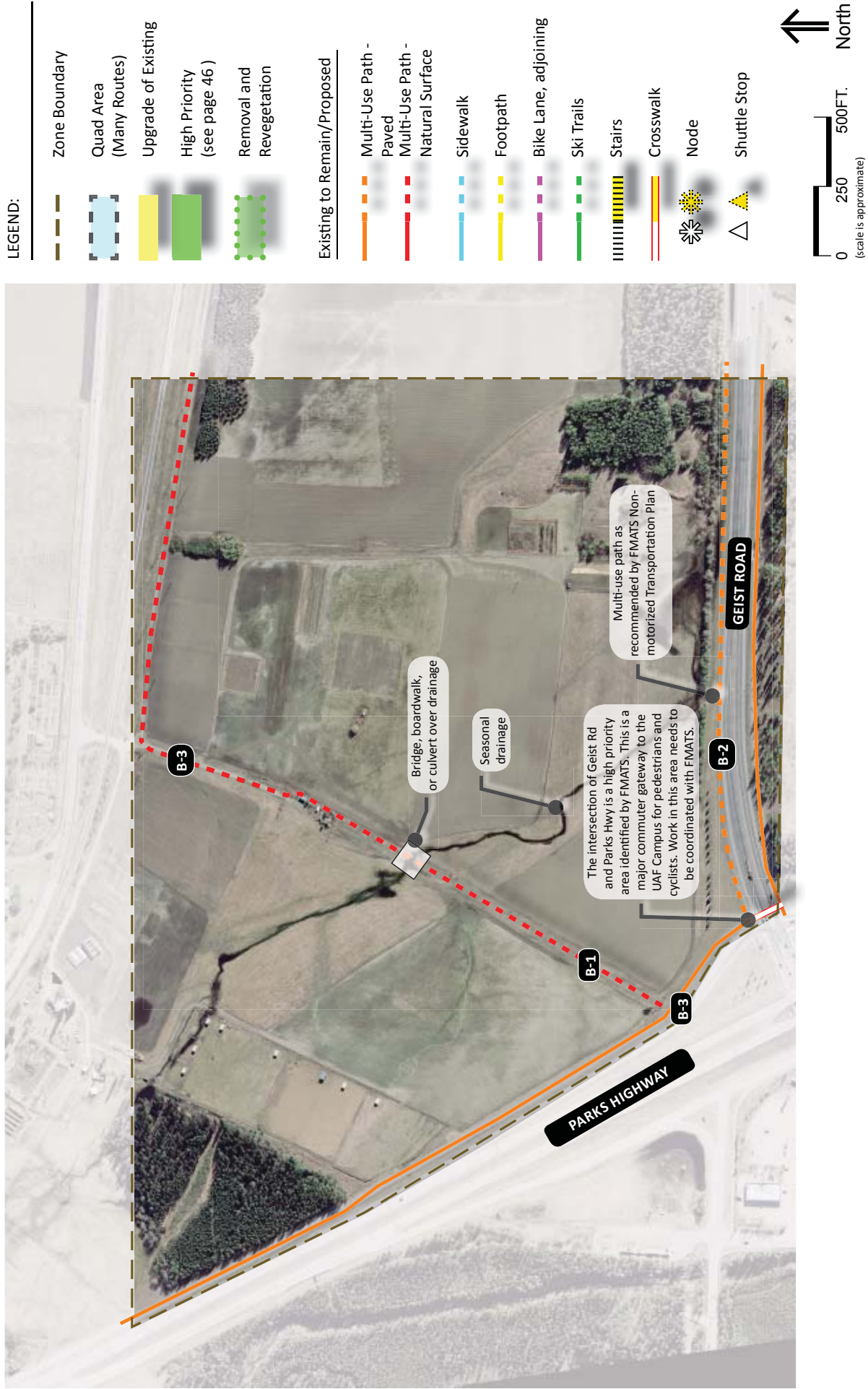
- Good short-cut access to the Chena Pump Road area of the Fairbanks community and many businesses there.
- This side of campus is very visible to the community and could serve as a trail gateway to the campus.

Figure 2.2a: Fairbanks Experimental Farm Fields (Zone B) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
B-1	Chena Pump Short Cut	Create a multi-use path (natural surface) along short-cut route through Agricultural Farm, including a bridge or culvert over the drainage that can accommodate maintenance equipment.	Low	Medium
B-2	Geist Road Improvements	Continue working with FMATS on the effort to create multi-use (shared path) along north side of Geist Road (as recommended by FMATS NMTP).	High	High
B-3	Agricultural Farm Signage	Include clear wayfinding and regulatory signage at both ends of the proposed multi-use path (natural surface) regarding importance of dog walking etiquette near reindeer pens and locations for off-leash dog areas nearby. Also include pet refuse stations providing bags for cleaning up after pets, as well as litter bins.	Medium	Low

Note: Order of priorities shown is not based on level of importance

Figure 2.2b: Fairbanks Experimental Farm Fields (Zone B) - Mapping



2.3. West Ridge (Zone C)

OVERVIEW:

West Ridge acts as a major campus hub for scientific research and a significant portion of graduate study activities on campus. It is also the home for the UA Museum of the North (the largest visitor attraction on campus) as well as the US Weather Service, the US Geophysical Agency, and UA Statewide offices. There is not any student or staff housing in this area of the campus.

This area also receives great benefit from the proximity of two of the existing North Campus access points at the Ski Hut and Lookout Points. West Ridge is also a major destination for bike and walking commuters and a gateway from campus to homes and communities west of the Campus.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- Ski Hut, Lookout Point, and access to North Campus trails
- West Ridge Plaza
- Museum of the North
- Terrain park

CONSTRAINTS:

- The major intersection at the west end of Yukon Drive has poorly defined vehicle and non-motorized routes and lacks an identifiable gateway to campus.
- The North/South connection between West Ridge and Butrovich is poor.
- The Ski Hut location has poor non-motorized access to and from campus, as well as a lack of a bus drop-off area.
- Cyclists and some walkers use the Tanana Loop slope (Butrovich Hill road) to get to Lookout Point. This route lacks adequate lighting or separation from vehicles.
- There is a lack of an identifiable route between the Museum and the Botanical Gardens (both are desired visitor experiences on campus).
- A popular short cut that is not addressed formally is between

the Murie Building and Moore Bartlett Skarland Complex, behind the Museum to the Reichardt building.

OPPORTUNITIES

- The new North Tanana Loop Drive provides good vehicular access to the parking lots north of West Ridge during winter months. In the summer, conditions may be dusty but still provides good access.
- There are many opportunities integrate better with recreation on this side of campus, including the Terrain Park and North Campus trails.
- The roundabout at the base of Tanana Loop Road serves vehicular traffic well and could be used as an example of how to delineate vehicular and non-motorized routes through an intersection.
- The proposed roller ski training loop includes three options in this area.
- The Ski Hut could potentially act as a multi-purpose indoor facility.
- Offers a good starting point for possible Tree Campus Walking Tour with interpretive signage.



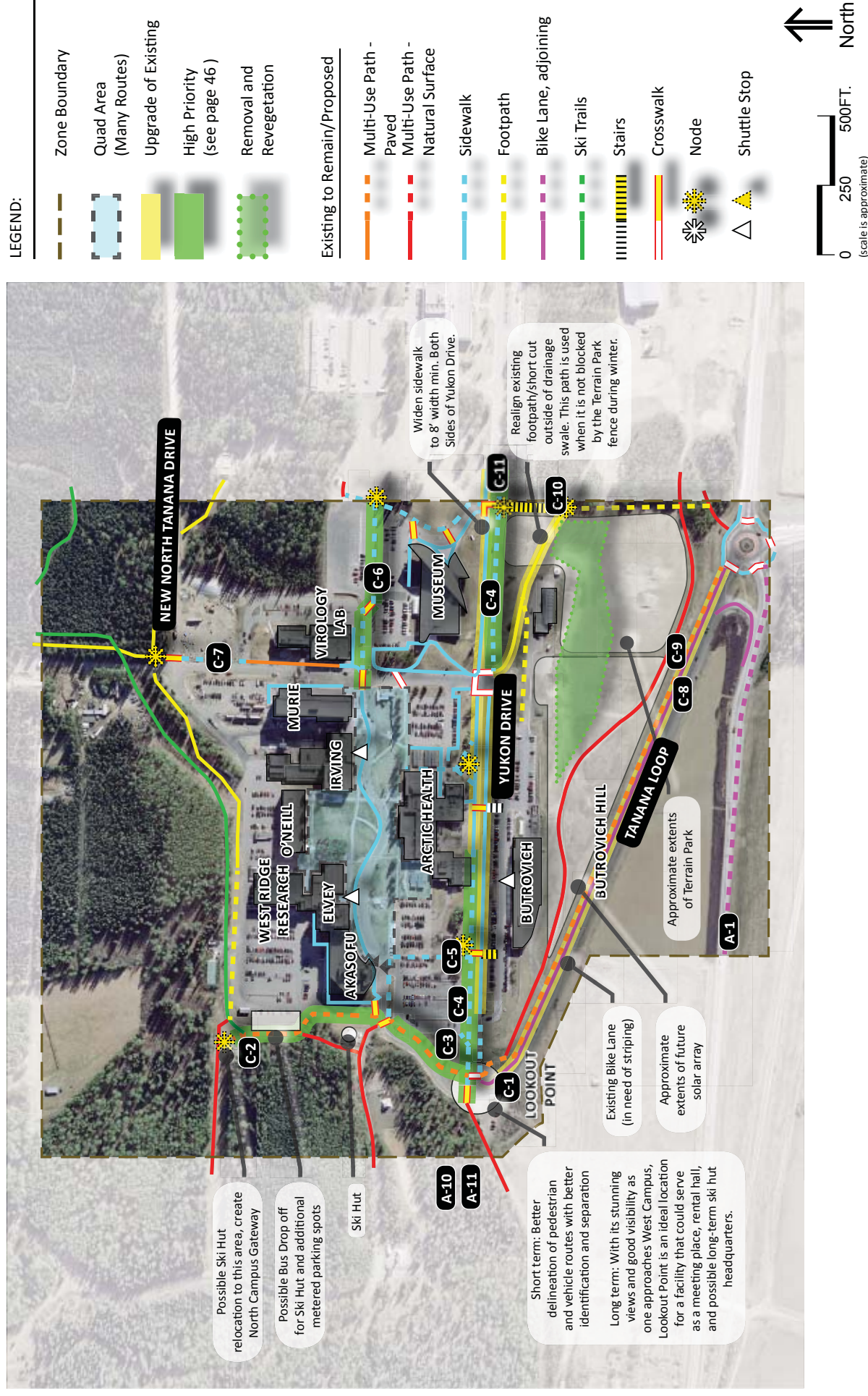
West Ridge Campus
Photo: Todd Paris

Figure 2.3a: West Ridge (Zone C) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
C-1	Lookout Point Intersection	Prepare in-depth study of alternative solutions for vehicle and non-motorized routes at west intersection of Tanana Loop and Yukon Drive (Lookout Point area) and possibility to create West Campus Gateway.	Low	High
C-2	Ski Hut Relocation	Relocate Ski Hut as shown, provide bus drop off area and metered visitor parking. Create North Campus Gateway in this area.	Medium	Low
C-3	Ski Hut Access	Construct separated multi-use path and crosswalks between new ski hut location and Yukon Drive.	Low	Medium
C-4	Yukon Drive Sidewalk	Construct 8' width sidewalk along north and south sides of Yukon Drive for better east-west connection. Upgrade existing where narrow walks already are in place. Provide rest nodes to accommodate visitors going between the Museum and Botanical Gardens. Relocate or remove existing light fixtures as needed.	High	Medium
C-5	Akasofu Parking lot sidewalk	Construct north/south sidewalk between Akasofu and Butrovich, restripe parking spaces, construct crosswalk and stairs.	High	Medium
C-6	Museum Parking lot sidewalk	Construct strong east/west connection through Museum parking lot. Create node where trail connects to Troth Yeddha' Park.	High	Medium
C-7	Virology Lab Sidewalk	Construct north/south sidewalk along Sheenjek Drive and North Campus Gateway.	Low	Low
C-8	Butrovich Hill Trail	Construct separated multi-use path (paved) along Tanana Loop along Butrovich Hill road. Provide lights if possible. Restripe existing Bike Lane when paint is not visible.	Low	High
C-9	Solar Array Trail realignment	Realign multi-use path (natural surface) with addition of solar Array. May need to cross to south side of Tanana Loop slope (Butrovich Hill road).	Medium	Medium
C-10	Terrain Park Stairs	Construct stairs east of Terrain Park.	Low	Medium
C-11	West Ridge Signage	Complete extensive signage plan that includes standardization of informational, regulatory, and interpretive across campus and at non-motorized scale.	Medium	Low

Note: Order of priorities shown is not based on level of importance

Figure 2.3b: West Ridge (Zone C) - Mapping



2.4. CCHRC and Sustainable Village (Zone D)

OVERVIEW:

The development in this area of the campus is on the fringes of taiga habitat on permafrost soils, extending from south of the railroad tracks to Geist Road. The Harper Building (administrative and instructional home of the College of Rural and Community Development) is on the southern edge. The northern edge is home to the Cold Climate Housing Research Center (CCHRC) and the UAF Sustainable Village housing development. The area is bounded by roads on the west, east and south and the railroad on the north. All vehicular access to this zone is from either Geist Road or Fairbanks Street. Dedicated pedestrian access is via the old Fairbanks Street bridge in the northeast corner of this zone.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- CCHRC
- Sustainable Village
- Community Gardens on Fairbanks Street Bridge
- Harper Building

CONSTRAINTS:

- Bike commuting to/from campus is common and Sheep Creek Road is a popular bike commuters to this zone (no hill to climb from west-east). This route is very unsafe for cyclists and vehicles due to poor visibility and a lack of adequate space for each user.
- CCHRC commuters prefer to park their bikes on the bridge and locked to railing as there is no route to get them down the hill.
- There is a need for a better defined route for Sustainable Village residents to get to the UAF Central Campus (and SRC). The current stairs are well-used, but there are many desire-lines and short-cuts through the woods to get to this access.
- Access across the railroad tracks is a common short-cut, but bridges are safest and should be encouraged
- There is a common short-cut through the Energy Tech test modules facility site.

- The pedestrian (non-motorized) routes at Tanana Loop, Alumni Drive, and South Chandalar Drive are poorly defined

OPPORTUNITIES:

- An interpretive walk with signage in the wooded area south of CCHRC is desired, and would be a great benefit to the campus, CCHRC, Sustainable Village and community. A suggested theme would be 'taiga ecosystem'.
- Trail materials in this area should relate to the mission and goals of the Sustainable Village (low-impact soft surfacing, sustainable materials and possible elevated surfaces to protect the landscape).
- The Harper Building could benefit from better vehicle and pedestrian connections to the Sustainable Village, UAF Central Campus, and future trails in the area.
- Permanent ski trails in this area (separate from walking trails) would be well-received.
- Visitors to the CCHRC are more frequent in the summer (tours once per week in summer, once per month in winter). These visitors are typically Alaskan residents interested in energy efficient construction.



Sustainable Village and the Fairbanks Street Bridge

Photo: Todd Paris

- The bridges over the railroad tracks are the best connection to campus as they are safe and direct (for most uses).
- A stair access from Thompson Drive on the west side of the CCHRC would be well used (accessible access from Thompson could be achieved with higher effort)

ADDITIONAL NOTES:

- The CCHRC staff's most frequent destinations on the UAF campus include the SRC (daily trips), lectures at the Arctic Health Building on West Ridge, and the Wood Center.
- Cars accessing the CCHRC travel too quickly around the corner.

Figure 2.4a: CCHRC and Sustainable Village (Zone D) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
D-1	Agricultural Farm Loop	Construct a designated multi-use path (natural surface) between existing running loop and Thompson Drive. Provide trail connection and crosswalk to Thompson Drive parking lot	Low	Low
D-2	Thompson Drive Trail Gateway	Create a node at Thompson Drive parking lot that signifies the entry to the proposed trails.	Medium	Low
D-3	CCHRC Stairs	Install stairs and path to connect CCHRC with the Thompson Drive sidewalk.	High	Medium
D-4	CCHRC Trail	Install a multi-use path (natural surface) to connect Thompson Drive stairs with existing stairs at Fairbanks Street Bridge.	High	Low
D-5	CCHRC Crossings	Install crosswalks along Fairbanks St. across from Sustainable Village.	High	Low
D-6	RR Fence	Extend the fencing along the railroad corridor to funnel traffic to designated crossings.	High	Low
D-7	Sustainable Ski Trails	Revive existing multi-use paths (natural surface) along the abandoned ski trails after construction of Sustainable Village expansion.	Low	Low
D-8	Blind Corner Improvements	Discourage informal crossings at the blind corner along Fairbanks St. Complete some thinning of vegetation to allow for better visibility within the sight triangle. Revegetate with low vegetation as necessary, install natural fencing to funnel pedestrians to designated crosswalks.	High	Low
D-9	Sustainable Village Connections	Coordinate plans for a multi-use path (natural surface) that connects the Sustainable Village with the Harper Building, with plans for a Sustainable Village Expansion	Medium	Low
D-10	Sustainable Village Gateway	Once expansion of Village begins design phases, discuss opportunities to develop clear pedestrian and vehicular routes from Fairbanks St. to the Future Sustainable Village Development. Possible solutions may include a realignment of Fairbanks St. to create a simplified 4-way stop.	Low	High
D-11	Thompson Drive Gateway	Continue to emphasize Thompson Drive as a gateway to the UAF Campus with possible gateway feature/sign, sculpture, landscape, lighting and welcoming sidewalks and trails.	High	Low

Note: Order of priorities shown is not based on level of importance



Figure 2.4b: CCHRC and Sustainable Village (Zone D) - Mapping

2.5. Yukon Drive and North (Zone E)

OVERVIEW:

Yukon Drive acts as the main non-motorized connection between West Ridge and Campus Core. Connecting the two major zones of campus activity, this is an important spine.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- Reichardt Building
- Moore-Bartlett-Skarland Complex
- Trail Access to Farmers Loop trails
- Shuttle stop north of Wood Center
- Observation Point
- West Ridge buildings and plazas
- Campus Core buildings and plazas

CONSTRAINTS:

- The existing walkways along Yukon end abruptly and in most cases are not wide enough to accommodate traffic.
- No quick access to North Campus recreational opportunities exists for staff, faculty, and students on the east side of campus.
- Formal or designated trails between Hess Village, Cutler Apartments, Married Housing, MacLean House and campus are generally incomplete.
- Some important existing east/west trail connections rely on the use of parking lots and fire lanes to complete routes.
- Moore Bartlett Skarland is another major hub of activity on the east side of campus that could benefit from better non-motorized access.
- Some recreational uses have poorly defined boundaries in housing areas.

OPPORTUNITIES:

- Vehicular traffic along Yukon Drive is at slow speeds and only one lane in each direction.
- There are good views of the Tanana Valley from Yukon Drive.
- Yukon Drive is proposed to be a pedestrian mall in the future, from the Museum entry drive to the intersection with Tanana Loop. Vehicle access will be only for shuttles, maintenance and service, and emergency access.
- When developed, Troth Yeddha' Park will provide another visitor amenity on campus.
- The Museum of the North acts as a major visitor attraction for the Fairbanks area and is often a visitor's gateway to the campus.



The existing sidewalks along the north side of Yukon Drive are about four feet wide. In between classes when pedestrian traffic is high, it can often be crowded.

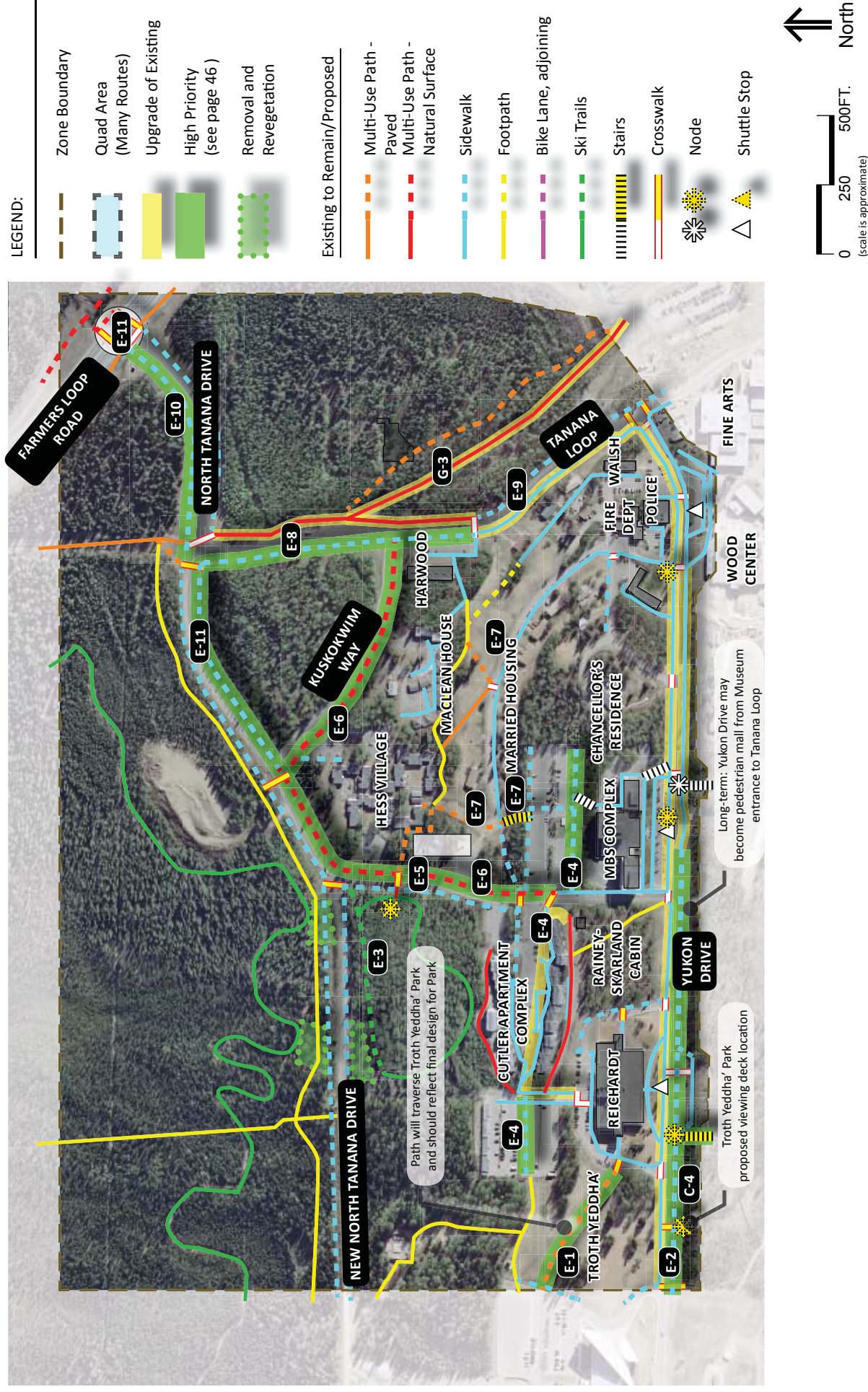
Photo: Todd Paris

Figure 2.5a: Yukon Drive and North (Zone E) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
E-1	Reichardt Trail	Install an east/west multi-use path (paved) through Troth Yeddha' Park. Ensure the final trail alignment matches the final preferred alternative for Troth Yeddha' Park.	Medium	Low
E-2	Yukon Pedestrian Mall	Investigate design alternatives for the development of Yukon Drive into a pedestrian mall.	Medium	High
E-3	North Tanana Crossing	Connect the ski loop to one safe crossing at North Tanana Drive. Remove existing crossings in this area.	Medium	Medium
E-4	Cutler/Moore Bartlett Skarland Artery	Install crosswalks, sidewalk upgrades, and pedestrian amenities to emphasize a strong east-west connection from Troth Yeddha' through Cutler to Moore Bartlett Skarland parking path.	High	High
E-5	Hess Village Trailhead	Create mini-North Campus Trailhead west of Kuskokwim Way to provide better North Campus access to staff, faculty, and students who primarily use this side of campus. A few parking spots could be provided across the road near the flat spot at Hess Village.	Low	Medium
E-6	Kuskokwim Upgrades	Install multi-use pathway (natural surface) and crosswalks along Kuskokwim Way. Upgrade to paved in the future when funds allow.	High	Medium
E-7	Housing Connections	Install the missing connections near Married Housing, Hess Village, MacLean House, and Disc Golf holes.	Medium	Medium
E-8	North Tanana Connection	Install a north/south sidewalk connection on the west side of Tanana Loop, 8' minimum width. Upgrade existing multi-use path (natural surface) with additional surfacing.	Medium	Medium
E-9	Existing Tanana Loop Upgrades	South of Harwood, upgrade the existing trail and sidewalks along Tanana Loop to 8' minimum width.	Medium	High
E-10	North Tanana Sidewalks	Install sidewalks, both sides of New North Tanana Drive, out to Farmers Loop Road.	Low	Medium
E-11	Farmers Loop/North Tanana Loop Intersection Upgrades	Continue to work with FMATS on safety improvements for the North Tanana Loop intersection with Farmers Loop Road, including possible pedestrian light and crosswalks. A large number of non-motorized commuters come from the Farmers Loop area. Another pedestrian crossing light should be considered between this intersection and the Ballaine Lake parking area.	High	High

Note: Order of priorities shown is not based on level of importance

Figure 2.5b: Yukon Drive and North (Zone E) - Mapping



2.6. South of Yukon Drive (Zone F)

OVERVIEW:

The South of Yukon Drive area is a major campus activity hub, including the Campus Core (Constitution and Cornerstone Plazas) with a central point of activity at the Student Recreation Center (SRC). Many students choose to park in the SRC and Patty Center lots and walk to nearby classrooms.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- SRC and Patty Center
- Campus Core, Constitution Plaza, Cornerstone Plaza
- Trail Access to Farmers Loop trails
- Wood Center
- Library
- Housing
- Administration buildings

CONSTRAINTS:

- The popular route between West Ridge and the Campus Core is along the existing Himalaya Trails area north of SRC. These trails are poorly defined and include sections of dangerously steep grades. Multiple short-cuts are also causing erosion.
- The very steep grades south of Yukon Drive make existing paths dangerous during winter months when surfaces may be icy and difficult to maintain. ADA accessible trails in this area are likely cost-prohibitive due to challenging grades.
- In many locations there are pedestrian and vehicular conflicts due to shared routes.
- The existing Himalaya Trails cross several large hills and valleys, between the Terrain Park and SRC.

OPPORTUNITIES:

- The natural character of the existing 'Himalaya Trails' and the natural areas north of SRC are very well-liked by students.
- Some trail users find rugged terrain enjoyable.
- Metal grating on stairs is a good material for this campus as it requires little maintenance and is slip-resistant.
- The centrally located large parking area at the SRC and Patty Center serves a large portion of the undergraduate student population.

ADDITIONAL NOTES:

- Providing a designated path north of SRC may require additional lighting and upgrades to this area that need to be planned well to prevent detracting from a natural character.



The western part of the Lower Campus includes the popular 'Himalaya Trails' between Yukon Drive and the SRC/Patty Center.

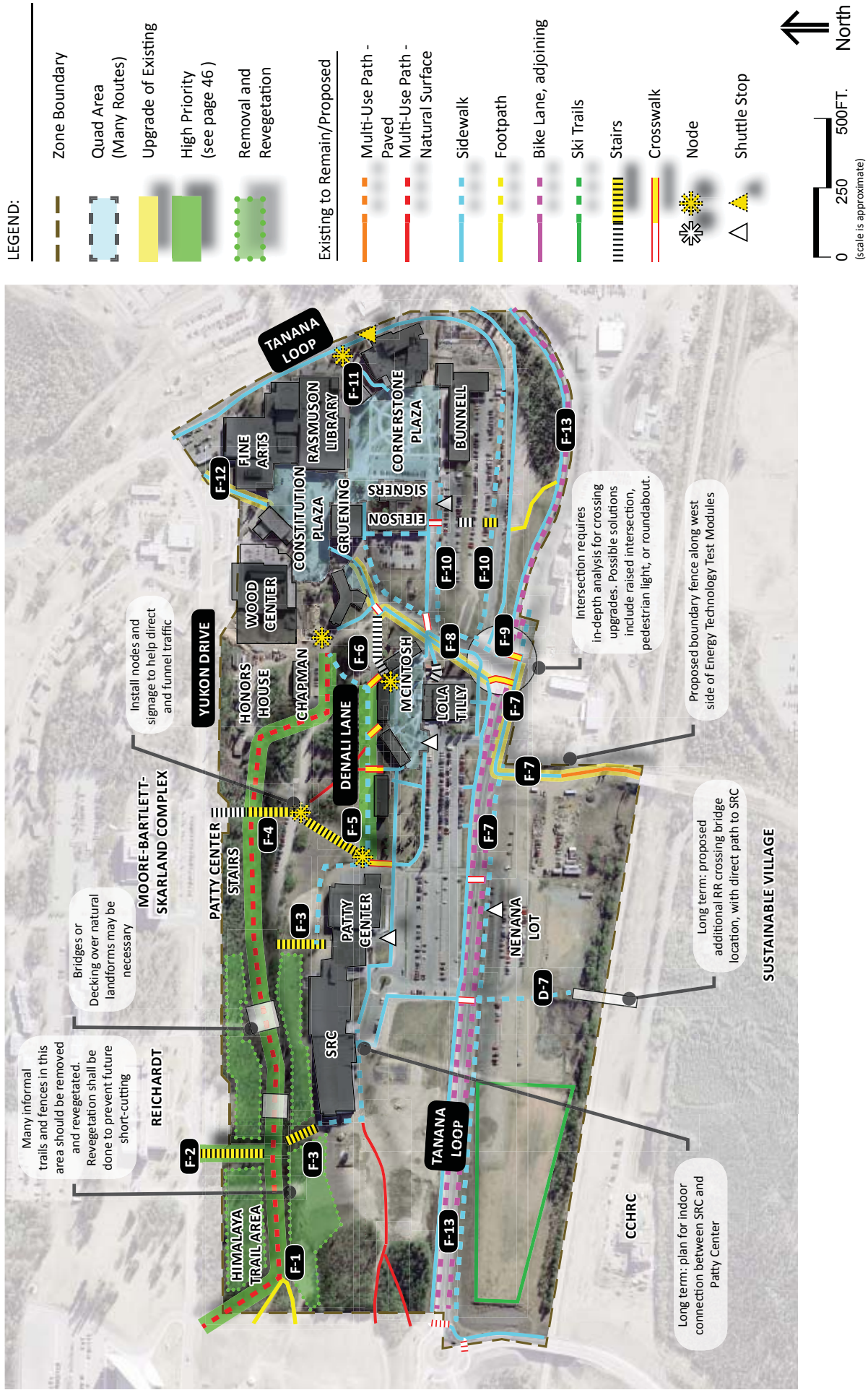
Photo: Todd Paris

Figure 2.6a: South of Yukon Drive (Zone F) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
F-1	Himalaya Trail Upgrades	Install an east/west multi-use path (natural surface) through the 'Himalaya Trail' area to the new Wood Center drop off area. Trail width as necessary to allow maintenance vehicles while maintaining natural character. Use of bridges or boardwalks may be necessary/useful in some areas where the grade is steep. Remove and revegetate the existing trails. Maintain existing fencing in place until revegetation is dense enough to prevent short-cutting.	High	Medium
F-2	Observation Stairs	Install stair connections from both sides of the Observation Point to the new Himalaya Trail. This stair design should include integrated ramp for walking bicycles up or down this slope and signage on how to properly use them.	High	Medium
F-3	SRC Stairs	Install stair connections from the new Himalaya Trail to the SRC and north side of Patty Center. Install a sidewalk to connect with existing sidewalks south of the Patty Center. Include integrated ramp for bicycles within stair.	High	Medium
F-4	Patty Center Stair Extension	Extend existing stairs to bottom of hill. Coordinate new stair design and construction with proposed Wood Center residential addition in this area.	Low	Medium
F-5	Denali Lane Upgrades	Renovate Denali Lane to only allow service vehicles and maintain as fire lane. Keep Facilities Services parking and loading areas. Install 8' width sidewalk that connects up to Wood Center roundabout. Stairs may be necessary. Provide crosswalks between the Patty Center and north of McIntosh	High	Low
F-6	McIntosh Node	Install node to funnel sidewalk users to the new Wood Center drop off.	Medium	Medium
F-7	Core Access	Upgrade the sidewalk from Fairbanks St bridge up to Constitution Plaza to 6' width minimum. Install sidewalk on south side of Tanana Loop.	Low	Low
F-8	South Chandalar Upgrades	Install 8' width minimum sidewalks on both sides of South Chandalar Drive. Coordination with other planning projects in the area.	High	Medium
F-9	Alumni Drive and S Chandalar Review	Discuss opportunities to improve safety of pedestrian crossings at intersection of Tanana Loop, South Chandalar Drive, and Alumni Drive	High	High
F-10	Signer's and Bunnell Sidewalks	Complete the sidewalk connections south of Signer's Hall and Eielson. Coordinate with the South Chandalar/Alumni Drive Intersection designs.	Medium	Medium
F-11	Taku Node	Install a node north of Duckering with wayfinding signage to connect trails in Cornerstone Plaza with the Taku lot below.	High	Low
F-12	Fine Arts Upgrade	Discuss opportunity to redesign materials and widen existing walk/ramp to better acknowledge this popular route.	Medium	High
F-13	Tanana Loop Bike Lanes	Paint bike lanes on both sides of the road between the roundabout and the intersection with College Road.	Medium	Low

Note: Order of priorities shown is not based on level of importance

Figure 2.6b: South of Yukon Drive (Zone F) - Mapping



2.7. East Access (Zone G)

OVERVIEW:

This area provides a major parking hub for the east side of the UAF Central Campus. The Taku Lot is one of the larger lots on campus and is heavily used by students, faculty and staff with destinations in the Campus Core. Access to the UAF Central Campus from the Taku Lot traverses a steep grade. The UAF Office of Sustainability offers a recycling collection center for UAF and the Fairbanks community here.

POPULAR DESTINATIONS WITHIN THIS ZONE:

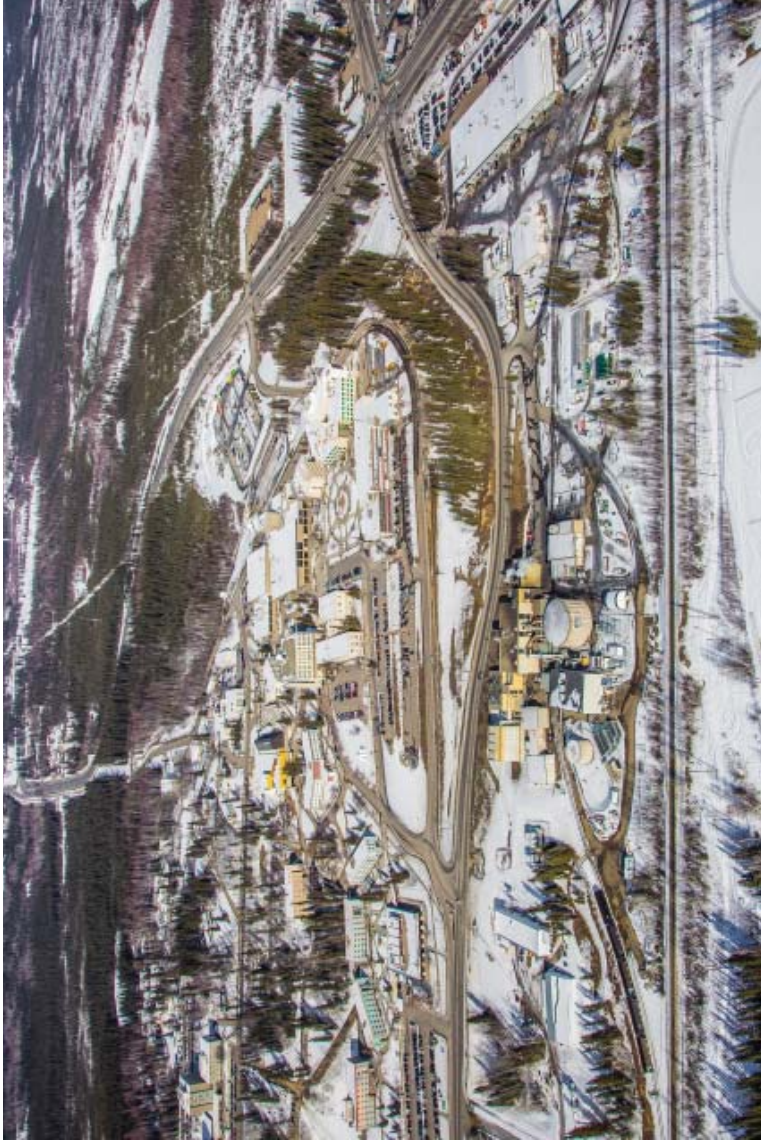
- Taku and Ballaine parking lots
- Taku shuttle stop
- Cooperative Extension Service
- Recycling Center

CONSTRAINTS:

- Steep grades between Tanana Loop and the Ballaine parking lot make trail construction and maintenance difficult. Stairs are required and ADA access is by shuttle only.
- Few crossings exist along Farmers Loop Road, although many students live on the west side and cross four lanes of traffic in non-designated locations.

OPPORTUNITIES:

- Connect the popular Farmers Loop Road multi-use path (paved) with the UAF trails and pathways.
- The Taku Parking Lot serves as a large parking hub for Campus Core users.



This aerial shows all of the East Access Zone and most of the Southeast Access Zone.

Photo: Todd Paris

Figure 2.7a: East Access (Zone G) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
G-1	Taku Secondary Stairs	Install stairs from the proposed sidewalk to the Ballaine lot below. There is a needed direct connection between Yukon Drive intersection with Tanana Loop to the center of the Taku Lot, stairs may not be possible due to suspected poor soils. If stairs are not possible, other trail connections should be considered to prevent users from short-cutting across the slope and causing erosion.	Low	High
G-2	The Luge Upgrade	The existing ramp to the Taku Lot that exceeds 8% slope is planned to be replaced with stairs.	High	High
G-3	Shuttle Route Upgrades	This multi-use path (natural surface) currently acts as a temporary shuttle route. Update and repair path after its use as a shuttle route is over. In the meantime, provide a separated multi-use path (natural surface) for bicyclists and walkers as an alternate route.	Medium	Medium
G-4	Short-cut upgrades	Connect existing short-cut with multi-use path (paved) along vehicle routes.	Medium	Low
G-5	Taku Multi-Use path	Install a multi-use path (paved) along south side of the Taku lot.	Medium	Low
G-6	Short-cut Removal	Revegetate and/or fence the short-cut through the woods.	Low	Medium
G-7	Taku Trail	When the Luge trail is replaced with stairs (G-2), install multi-use path (paved) for bicyclists to travel from Tanana Loop down the hill to the Taku Lot area.	Medium	High

Note: Order of priorities shown is not based on level of importance

Figure 2.7b: East Access (Zone G) - Mapping



2.8. Southeast Access (Zone H)

OVERVIEW:

This area includes the community's main identifiable gateway to the campus (the UAF temperature sign) and access to businesses along College Road and University Avenue. While this side of campus interacts with the heart of the Fairbanks community, it also provides the necessary support for the campus. The UAF Heat and Power Plant provides heat and power to the campus, while Facilities Services houses staff and maintains much of the UAF infrastructure. There are plans in progress to replace the existing heat and power plant with a new facility that will be fenced.

POPULAR DESTINATIONS WITHIN THIS ZONE:

- Access to College Road businesses
- Access to Community via University Ave and Geist Road
- Facilities Services Building
- University Park (Upark) Building
- Hutchison Institute of Technology

CONSTRAINTS:

- Sidewalks along University Ave and College Road are generally narrow with little or no separation from vehicle traffic, detracting from the non-motorized experience.

OPPORTUNITIES:

- The intersection of University Ave and College Road serves as a campus gateway for the community in many ways. UAF signage in this location is iconic and there is a strong connection between the campus and the services that College Road offers.



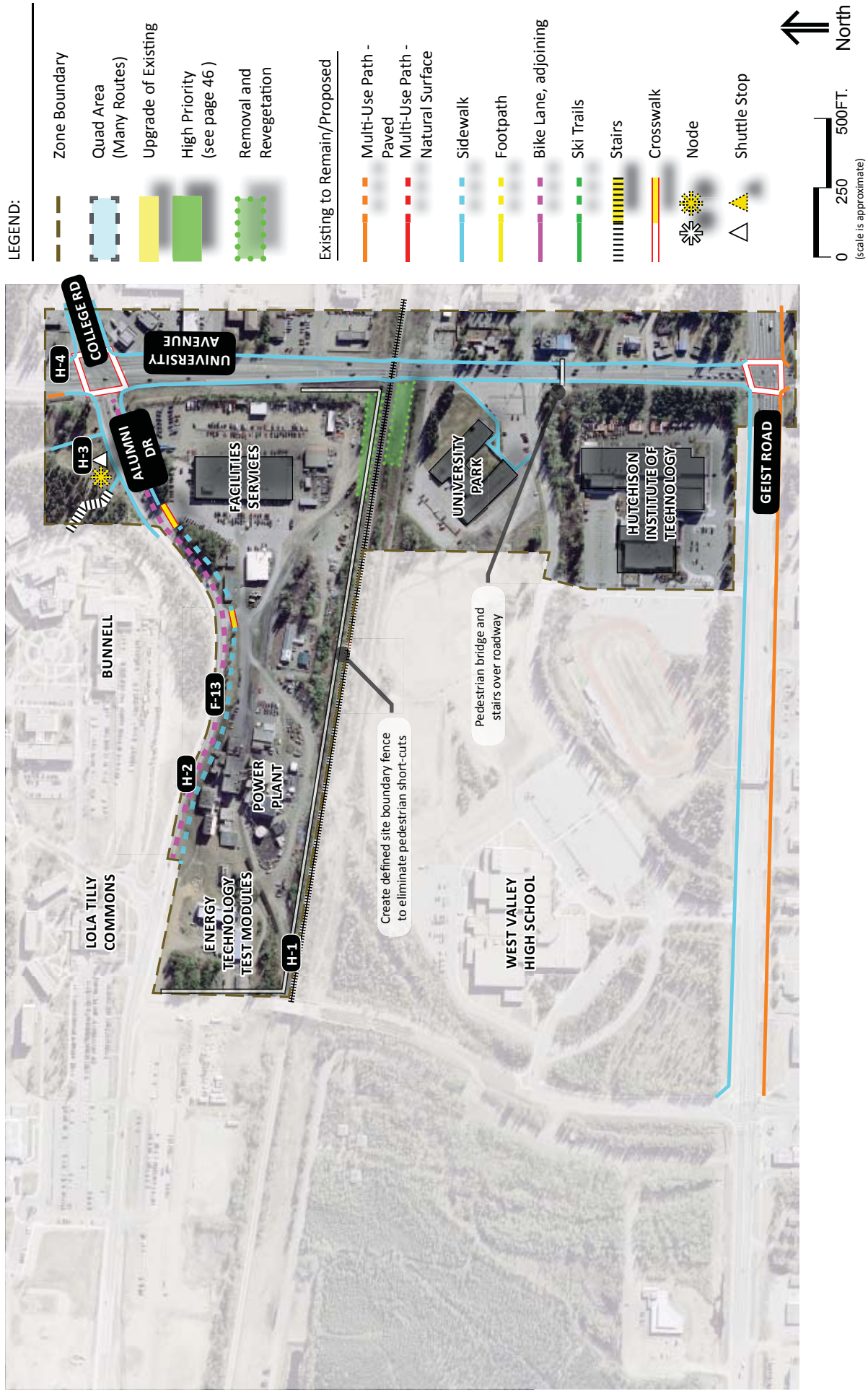
This sign at the intersection of Alumni Drive, University Ave, and College Road is an iconic feature for the campus located at one of the UAF Central Campus gateways to the community.
Photo: Todd Paris

Figure 2.8a: Southeast Access (Zone H) - Recommendations and Priorities for Attention

No.	Item	Description	Priority for Attention	Level of Complexity
H-1	RR Boundary Upgrades	Install fencing , gates, and signage around the south and east sides of this zone to discourage short-cuts.	Medium	Low
H-2	Alumni Drive Sidewalk	Complete the sidewalk connection along the south side of Alumni Drive.	Low	High
H-3	Alumni Drive Gateway	Create a node at the base of the stairs the complements the existing UAF Campus identification signage. Install wayfinding and informational signage, with option to include design amenities such as seat wall, accent paving, etc. This will help signify a main pedestrian gateway to campus.	Low	Low
H-4	Community Campus Access	Continue to work with FMATS to improve the pedestrian and bicyclist experience along College Road and University Ave by lobbying for separated and widened paths whenever possible.	High	High

Note: Order of priorities shown is not based on level of importance

Figure 2.8b: Southeast Access (Zone H) - Mapping



3. ENLARGEMENTS (AREAS OF FURTHER DISCUSSION)

3.1. Yukon Dr. and Tanana Loop



Problem: This intersection has four directions of traffic meeting on a curve, with poor vertical sight lines (it is located on a hill, and therefore more difficult to see traffic approaching from below).

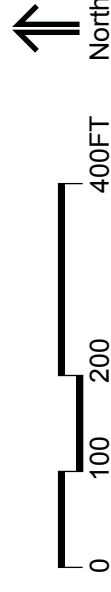
Notes on Enlargement Areas: Each of these four areas could benefit from in-depth study, separate from the Trails and Greenways effort. Within each area there are complex vehicular and non-motorized circulation patterns. Solutions to simplify these routes could provide basic trail upgrades that are more intuitive for users.

3.2. Alumni Dr., and S. Chandalar Dr.



Problem: There are three directions of traffic meeting at this intersection with two more intersections within close proximity. Non-motorized routes are not clearly visible, and vehicles seem to have priority over non-motorized uses in this location. Elevations in this area make any road modifications costly.

The intersection at Alumni Drive and South Chandalar Drive has been studied at length for many years. Solutions to simplify traffic patterns have been analyzed, however no solution has been selected at this point.

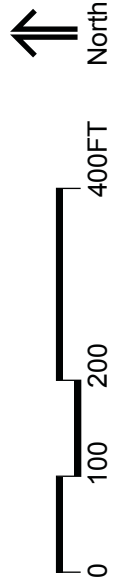


3.3. Wood Center Drop Off Areas

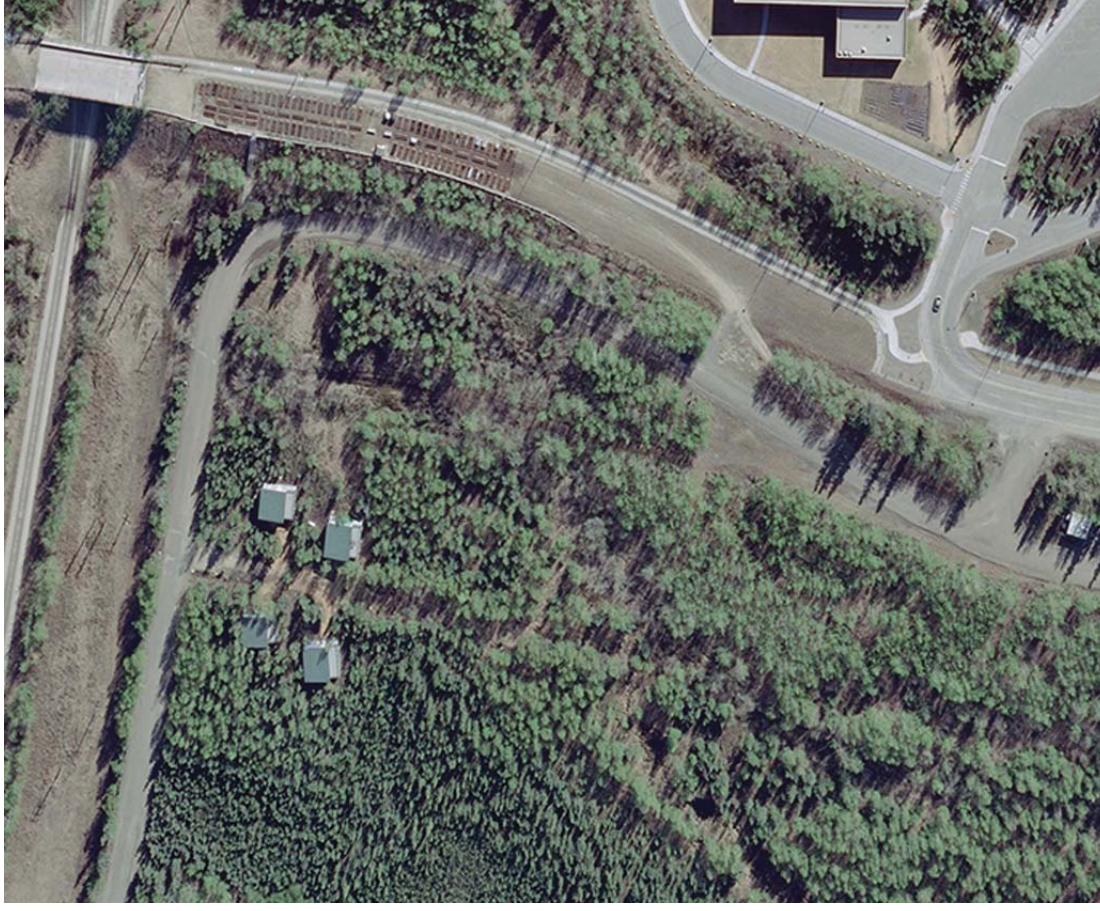


Problem: Constitution Plaza and Cornerstone Plaza are popular hubs for vehicular drop-off of campus users. Pedestrians are often dropped off at the Gruening loading area, in front of Signer's Hall or at the north shuttle stop. Providing a designated drop off area with clear pedestrian routes in these areas will help relieve congestion and confusion.

Note: This area is currently included in the scope of a related project, the Campus Wide Core Access Plan (CWCAP). The CWCAP will analyze existing vehicular and non-motorized circulation paths at certain nodes (this area being one of them) and propose alternative solutions on how to simplify and enhance Campus Core access.



3.4. Sustainable Village entrance



Problem: With the expansion of the Sustainable Village, more students will be living in this area. This intersection could benefit from better defined sidewalks and trails. The corner area across from the Fairbanks Street bridge is a common short cut on a relatively blind corner.

4. PRIORITIES AND PHASING

4.1. Campus-wide Priorities - Areas within UAF control

This section outlines the top priorities for UAF. The top two priorities as identified by the UAF Project Team and the Design Team have been highlighted purple.

Summary of Goals:

GOAL 1 -

Provide safe, convenient, comfortable, non-motorized connections on Campus.

GOAL 2 -

Design connections and spaces that enhance the experience on Campus.

GOAL 3 -

Promote non-motorized uses on Campus to support UAF's wellness initiatives and sustainable ethic.

Zone and Number	Item	Priority for Attention	Level of Complexity	Which goal does it support?
A-2	Reindeer Location	High	Medium	1, 2
A-8	Lookout Point Node	High	Low	1,2,3
A-9	Botanical Garden Fencing	High	Low	1,2,3
C-4	Yukon Drive Sidewalks	High	Medium	1,2,3
C-5	Akasofu Parking lot sidewalk	High	Medium	1
C-6	Museum Parking lot sidewalk	High	Medium	1,2
D-3	CCHRC Stairs	High	Medium	1,2,3
D-4	CCHRC Trail	High	Low	1,2,3
D-5	CCHRC Crossings	High	Low	1
D-8	Blind Corner Improvements	High	Low	1
E-4	Cutler/Moore Bartlett Skarland Artery	High	High	1
E-6	Kuskokwim Upgrades	High	Medium	1
F-1	Himalaya Trail Upgrades	High	Medium	1,2,3
F-2	Observation Stairs	High	Medium	1,2,3
F-3	SRC Stairs	High	Medium	1,2,3
F-5	Denali Lane Upgrades	High	Low	1,2
F-8	South Chandalar Upgrades	High	Medium	1,2
F-11	Taku Node	High	Low	1,2
G-2	The Luge Upgrade	High	High	1,2

4.2. Campus-wide Priorities - Areas Requiring Collaboration

Zone and Number	Item	Priority Level	Level of Complexity	Which goal does it support?	Agency Coordination
A-1	Sheep Creek Road	High	Low-High	3	AKDOT & PF, ARRC
A-12	RR Tracks	High	High	3	ARRC
B-2	Geist Road Improvements	High	High	3	FMATS
D-6	RR Fence	High	Low	1	ARRC
E-11	Farmers Loop/North Tanana Intersection Upgrades	High	High	3	FMATS
F-10	Alumni Drive and S Chandalar Review	High	High	1,2	FMATS, DOT
H-4	Community Campus Access	High	High	1,2,3	FMATS, DOT

This section outlines the top priorities for UAF that require collaboration with other agencies and are generally more complex than items on the 4.1 list. The specific direction for this section is to be further developed with discussion and input from the Master Planning Committee.

5. DESIGN GUIDELINES

5.1. GENERAL DESIGN CONSIDERATIONS

INTENT

There are general design factors that should be taken into account for most development on campus.

GUIDELINES

- Wildlife should be anticipated on campus, with emphasis on design relating to moose, minimizing impacts on habitat areas, and seasonal requirements such as those that relate to the Migratory Bird Act.
- Winter weather can be variable and result in significant icing of paths and roads, and/or significant amounts of snow. Design to minimize maintenance and potential safety hazards.
- In a climate with lengthy periods of darkness, design should optimize good lighting design, and both passive and active security elements.
- UAF has significant utility infrastructure above and below grade. Development should consider these systems, as well as anticipating future needs to minimize negative unforeseen consequences.

SUSTAINABILITY

- Provide improvements that minimize needs for maintenance and maximize sustainable design solutions regarding material choices and installation methods.

MAINTENANCE

- Implement maintenance strategies that anticipate required maintenance and repair to ensure that it happens at the right time.
- Consider development of Levels of Acceptable Change (refer to Section 6) as a maintenance tool.

5.2. FURNISHINGS

INTENT

Select site furnishings that give definition to campus outdoor spaces, provide places for social gathering, lend to the unified character of the campus and provide order and maintain cleanliness.

GUIDELINES

- Provide site furniture that meets ADA requirements and best practices (i.e. benches with backs and arms).
- Consider ease of use and/or user comfort during periods of heavy snow or ice accumulation.
- Provide bike storage conveniently near, but clear of building entrances and emergency vehicle routes.
- Provide benches, seating walls, and places to gather in diverse, sunny places around the campus.
- Exterior Seating:
 - Individual: Each facility should be provided with adjacent seating opportunities for building users.
 - Small Group: Within any grouping of buildings, or smaller area of campus, seating should be provided to allow a group of 4 to 10 people to gather. This should be within a four minute walk of any facility.
 - Large Group: Within any campus zone, seating should be provided to allow a group of 10 to 20 people to gather. This should be within an eight minute walk of any facility.

SUSTAINABILITY

Select furnishings that:

- Are durable in extreme local climatic conditions (dryness, cold, and snow and ice accumulation and removal) and have long expected lifespans.
- Contain recycled content.
- Prioritize minimizing freight costs and/or distance
- Minimize the use of toxic materials (paints, finishes, glues).

MAINTENANCE CONSIDERATIONS

- Minimize the number of unique furnishing models on campus in order to simplify the stockpiling of components and repairs.
- Furnishings should be secured in place, vandal-resistant, and should not require extensive on-going maintenance.
- Located to avoid conflicts with wildlife and maintenance including snow removal, and snow storage.

5.3. LIGHTING

INTENT

Campus lighting for trails and greenways should reflect the overall goals and recommendations for the UAF Campus as presented in the UAF Exterior Lighting Master Plan. Lighting shall be used to enhance the campus character and increase visibility and sense of security where needed.

GUIDELINES

- Implement aspects of UAF Exterior Lighting Master Plan that relate to trails and greenways.
- Provide lighting where safety is a concern
- Minimize lighting to maintain good sky-viewing opportunities

SUSTAINABILITY

- Minimize light pollution, light trespass, sky glow and glare
- Enhance energy savings by using energy efficient light sources and controls

MAINTENANCE CONSIDERATIONS

- Reduce the range of styles of fixtures to minimize maintenance

5.4. SIGNAGE

INTENT

Campus signage is an important communication tool with the campus user, assisting in wayfinding, providing information on campus functionality, and identification of various features. Consistent signage is a cost effective way to confer consistent

identity on a diverse campus.

GUIDELINES:

- Implement UAF Signage Plan

SUSTAINABILITY

- Cohesive signage can encourage utilization of the pedestrian circulation system and increase the overall efficiency of the campus as a whole.

MAINTENANCE CONSIDERATIONS

- Signage should be secured in place, vandal-resistant, and should not require extensive on-going maintenance.
- Located to avoid conflicts with wildlife and maintenance including snow removal, and snow storage.

5.5. PATHS

INTENT

The intent of the pedestrian circulation system on campus is to streamline the path of travel from the campus perimeter to a destination point, and between destination points on campus. The goal is to develop a hierarchical system where flow is evenly distributed (or aggregated) to maximize efficiency, and to minimize time and effort.

GUIDELINES

- When relating to function and safety, give priority to pedestrians over all other circulation modes within the campus.
- Design safe and direct circulation systems.
- Extend paths across zone boundaries into adjacent campus systems.
- Provide all UAF roadways with attached or detached sidewalks and/or paths that will not be rendered unusable by plowed snow.
- Provide all new UAF roadways with attached sidewalks along both sides of the road, minimum.
- Integrate accessible routes (ADA) in a visually cohesive manner.

Routes should be direct and provide a similar quality and hierarchy of circulation as those provided for able bodied persons

- Restrict pedestrian access to environmentally sensitive areas.
- Coordinate with the City of Fairbanks, AKDOT&PF, FMATS, and others to provide pedestrian amenities in public rights-of way, including shelter, seating, lighting, street trees, planters, and other street furniture.
- Where feasible, provide planted buffers to provide separation between pedestrian routes and vehicular circulation.
- On bikeways maintain sight distance clearances appropriate to design speeds for bicycle traffic.
- When possible, consider sight lines and possible interactions with wildlife such as moose.
- Provide secure bicycle racks at all major campus destinations to encourage their use for campus access.
- Design with all seasons in mind and the potential safety hazards that each season may have.

SUSTAINABILITY

- Use recycled material in paving where feasible (recycled glass aggregate in concrete for example)
- Use adjacent campus plantings, or plantings specific to circulation systems to intercept rainwater and provide air quality benefits, and to reinforce the campus wayfinding system.
- Ensure that no invasive species are used in plantings or revegetation.

MAINTENANCE CONSIDERATIONS

- Snow storage areas should have well-drained soil to allow filtration, and absorption.
- There are seasonal versus annual maintenance requirements of soft surface and hard surface (paved) trails. Soft surface trails are prone to rutting with bicycle use (especially when the material is saturated with water), and that some bicyclists might tend to choose paved road surfaces over a soft surface trail (especially if there is rutting).

- Seasonally, soft surface trails will require grading and compaction (depending on the wetness of summer and intensity of use), while hard surface trails require little seasonal maintenance.
- Annually, soft surface trails will require potential addition of new material to make up for erosion or displacement. Hard surface trails will require crack sealing.
- With potential for minor trail flooding, soft surface trails may require removal of debris and repair as needed to fix erosion. Hard surface trails will require removal of debris and minimal maintenance (assuming trail sides are armored in areas of concern, to eliminate undercutting).
- Vandalism can be a concern. New facilities and amenities will need to take this into account. There are design options that can reduce risks through materials and products chosen for their durability and ease of maintenance, and locating amenities in areas of higher visibility to reduce the opportunity for vandalism.

5.6. BOARDWALKS, BRIDGES, ELEVATED PATH

INTENT

Elevated trail features should be used where topography, soils, and/or maintenance require a lighter footprint on the land. Boardwalks can also be showcase trail elements by creating an unparalleled trail experience that maintains the cherished natural character while increasing access.

GUIDELINES

- Elevated trail elements should be composed of metal grating construction as this material requires the least maintenance and minimizes disturbance, and maximizes light transfer to vegetated areas below.
- Planning should consider flooding hazards, ADA compliance and minimizing impact to the surrounding environment.

SUSTAINABILITY

- Maximize light transmittance to vegetation below.
- Use materials and methods to maximize low maintenance

lifespan of structures.

MAINTENANCE CONSIDERATIONS

- Design to minimize maintenance.

5.7. PAVING

INTENT

Paving is not only important for allowing successful campus vehicular and pedestrian circulation, it also provides a unified sense of identity to the campus.

Design and select paving to provide visual consistency, to create site-specific character, and for sustainability.

GUIDELINES

- Meet all current Americans with Disabilities Act (ADA) criteria for slopes, width and finishes, including non-slip surfaces for all seasons.
- Consider materials that are in line with the overall identity of the campus, not just the immediate context of adjacent development.
- When snow-melt systems are used, consider how to address ice build-up adjacent to extents of use.

SUSTAINABILITY

- Encourage the discussion of long-term maintenance, user safety, and energy consumption, when considering the use of sidewalk snow-melt systems and pavement systems.
- Use materials with post-consumer recycled content when other considerations allow.
- Minimize the use of petroleum-based paving products and products requiring high energy consumption in their production.

MAINTENANCE CONSIDERATIONS

- Provide a high level of structural stability to reduce the potential for heaving.
- Layout of paved hardscape areas should facilitate regular all-

season maintenance.

- Coordinate adjacent vegetation to allow linear snow storage, or nodal snow storage at appropriate intervals.

5.8. ROADWAY CROSSINGS

INTENT

Roadway crossings represent one of the key challenges to trail implementation. Motorists often do not expect to see bicyclists and pedestrians at unprotected crossings.

GUIDELINES

- Minimize the number of locations where trail alignments cross a road, driveways and other streets.
- When a crossing is necessary, it should be at ninety degrees to limit the crossing distance and allow safe sightlines.
- At crossings, separated trails are typically aligned adjacent to the edge of the roadway to indicate a single, well-defined, potential hazard to motorists. An engineering analysis should be provided as part of the final design for proposed crossings to determine the most appropriate design features. This involves analysis of traffic patterns of vehicles as well as trail users and is based on traffic speeds, road widths, traffic volumes, line of sight, and trail user profile. (It should be noted that UAF does not have consistent or valuable data of traffic volumes of the roads. UAF does have trail counts available for a few key access points to campus.)

MAINTENANCE CONSIDERATIONS

- Design ramps, refuge areas and associated crossing facilities to facilitate snow removal and provide areas for snow storage as feasible.

5.9. SITE GRADING AND DRAINAGE

INTENT

The design and integration of site grading and drainage can enhance the site experience, user safety, and maintenance.

GUIDELINES

- Contoured slopes are generally preferable to retaining walls. Where retaining walls are necessary, incorporate them into other design features, such as stairs, ramps, and planters, if feasible.
- Slopes should be designed and appropriate to their use for facilitating drainage, limit soil erosion, and avoid slides and instability.
- Design should plan for a trails that accommodates and control any runoff, provides for maximum percolation and filtration, and investigates the use of sustainable structures.
- Areas of turf adjacent to sidewalks should drain away from paved surfaces to prevent snow melt build-up on sidewalks and minimize damage to turf from snow removal equipment.

- The recommended maximum longitudinal grade is five percent. Steeper grades (8% or greater) can be tolerated for short distances (up to about 500 feet). Where access is critical, stairs should be used in lieu of paths steeper than 8%.

- All routes should ideally be designed with universal access in mind. In reality, this is not possible in all locations due to the steep topography on which the campus is located. It would be ideal to include visual warnings or cues at any changes in surface or slope. The provision of rest areas and other amenities shall also be investigated with the aim to create a pleasant experience for all users.

- As needed, meet accessibility requirements

SUSTAINABILITY

- Provide grades that eliminate the potential for slope erosion.
- Strive to maintain and enhance natural drainage patterns

- Encourage natural infiltration and evaporation where possible to reduce water run-off and remove sediments during storm events.

- Plant buffers of woody vegetation along upland areas bordering wetlands.

- Construct boardwalks or bridges where paths must cross sensitive areas such as class 'A' wetlands.

MAINTENANCE CONSIDERATIONS

- Slopes that require maintenance should be designed at 3:1 or shallower.
- Design areas of expected sedimentation to allow removal of sedimentation as required.

5.10. SNOW STORAGE

INTENT

For the current and near-term level of development on the campus, dealing with snow storage at the site level is appropriate.



Facility Services clears the snow around Constitution Park during the first snowfall of the semester in mid-October 2012.

Photo: JR Ancheta

GUIDELINES

- As a 'distributed' form of snow management, snow storage should be accommodated on-site, or removed from the site if area precludes storage.

SUSTAINABILITY

- Follow best practices for addressing snow melt in the spring to minimize runoff.
- As feasible, design sites to minimize the requirement for snow removal.

MAINTENANCE CONSIDERATIONS

- As feasible less emphasis should be placed on trucking and removal to snow storage sites.
- Locate snow storage to allow ease of access and seasonal maintenance and upkeep.

6. LIMITS OF ACCEPTABLE CHANGE

The Limits of Acceptable Change (LOAC) process is based on the premise that changes to a site will occur over time as a result of natural and human factors. The goal of management is to keep the character and rate of change within acceptable levels that are consistent with plan objectives and protection of the site. The management challenge is one of deciding:

- What changes should occur?
- How much change will be allowed?
- What management actions are needed to guide and control it?
- How will managers know when the established limits have been reached?

The LOAC process establishes benchmarks to quantitatively determine what management actions would restore conditions should changes become incompatible with the vision for UAF campus trails and greenways.

In order to identify change, measurable indicators are chosen that address particular areas of concern. An indicator serves as a measuring stick to indicate changes in conditions that occur over time. To be effective an indicator should be judged against the following criteria:

- **Relevant:** Helps describe the overall health of the UAF campus trails and greenways
- **An Early Warning Signal:** Alerts managers about trends in conditions before it is too late to act
- **Measurable:** Can be stated in quantifiable units
- **Specific & Significant:** Detects a change in conditions that reduces the future desirability or ecological viability of the area
- **Sensitive & Discriminating:** Detects a change in condition that occurs within one year and as the result of human activities (vs. natural fluctuations)
- **Reliable:** Can be measured accurately by different observers using the same procedures to collect information
- **Cost Effective & Feasible:** Can be measured by field personnel using uncomplicated equipment and straight forward sampling

Examples of Indicators:

- Ground cover loss
- Crowding
- Trail damage and multiple-trailing
- Each indicator has an associated standard, a quantifiable measure that dictates at what point change becomes unacceptable. When this standard is exceeded, a specific management action may be initiated to maintain desired conditions.

Potential problem areas will be identified by the comparison of existing conditions to standards. This helps to identify management actions that could be implemented to restore or achieve desired conditions. Possible actions will be evaluated in terms of their desirable outcomes and undesirable side effects. For any given alternative, there may be a number of potential management actions that could be undertaken to achieve standards.

When implementing the LOAC planning system, monitoring takes on a new role of importance and relevance. Monitoring becomes perceived as an essential, practical element of the park management process. To this end, stakeholder groups may volunteer to become involved in assisting with the monitoring program, raising public awareness and cooperation in sound management. In essence, they will become partners in management and also become a knowledgeable constituency who can help when new situations require adjustments or new decisions to be made to perpetuate the desired future conditions of the UAF Trails and Greenways plan.

Figure 6.1a identifies some of the items that may be appropriate for an LOAC management strategy. This is only an example and should be further developed as a management tool if desired.

Figure 5. 1a: Limits of Acceptable Change

Item	Measurement	Action Option
Multi-use path - Paved	Widening of Path (normal 8-12' width)	1) Path fulfills a need and should be maintained: widen paved area to accommodate excessive shoulder use. 2) Increased width is not desired: restrict path width to 12' or less and revegetate shoulders.
Multi-use path - Natural Surface	Widening of Path (normal 4-12' width)	1) Path fulfills a need and should be maintained: upgrade to paved surface and widen to accommodate excessive shoulder use. 2) Increased width is not desired: restrict path width to 12' or less and revegetate shoulders.
Sidewalks	Widening of Sidewalk (normal 3-8' width)	1) Path fulfills a need and should be maintained: widen paved surface as necessary or upgrade higher class trail. 2) Path is not desired: block and revegetate.
Footpath	Widening of Informal Footpath (normal <2' width)	1) Path fulfills a need and should be maintained: formalize the trail through upgrading to mulch surface, or higher class trail. 2) Path is not desired: block and revegetate.
	Widening of Formal Footpath (normal 2-3' width)	1) Path fulfills a need and should be maintained: formalize the trail through upgrading to wider path, additional surface materials may be needed. 2) Increased width is not desired: restrict path width to 4' or less and revegetate shoulders.
Bike Lane	Striping is no longer visible	1) Path fulfills a need, meets that need adequately, and should be restriped each spring. 2) Path fulfills a need and can no longer meet the demands of that need. Upgrade to separated trail where space allows.
General Erosion	Vegetation has died back in an area greater than 2 square feet	1) Area will open to reasonable subsequent impact: regrade and revegetate. 2) Area will be open to moderate or higher subsequent user impact: further develop surfaces to provide a non-erosive surface. 3) Source of erosion can be removed: revegetate.
Vandalism	Any Vandalism	1) Restore to original condition as soon as feasible.