Master Planning Committee
of
University of Alaska Fairbanks

MEMORANDUM

Date: August 3, 2009

To: Brian Rogers, Chancellor

Approved 8/4/09 Date

From: Rich Boone, Chair Rich Boone

Re: MPC Recommendation 2009-07 – Energy Technology Facility Site

On July 30, 2009, Facilities Services presented to the UAF Master Planning Committee a comparison of sites for the new Energy Technology Facility (attached). The advantages and disadvantages of the lower and the upper campus sites were discussed.

MPC passed the following recommendation (9 – 1):

> *"The Master Planning Committee recommends the upper site location (east of the proposed new fire station) for the new Energy Technology Facility."*

If you are in agreement with the MPC recommendation as stated above, please indicate your approval at the top portion of this document.

dlm

Attachment (as stated)

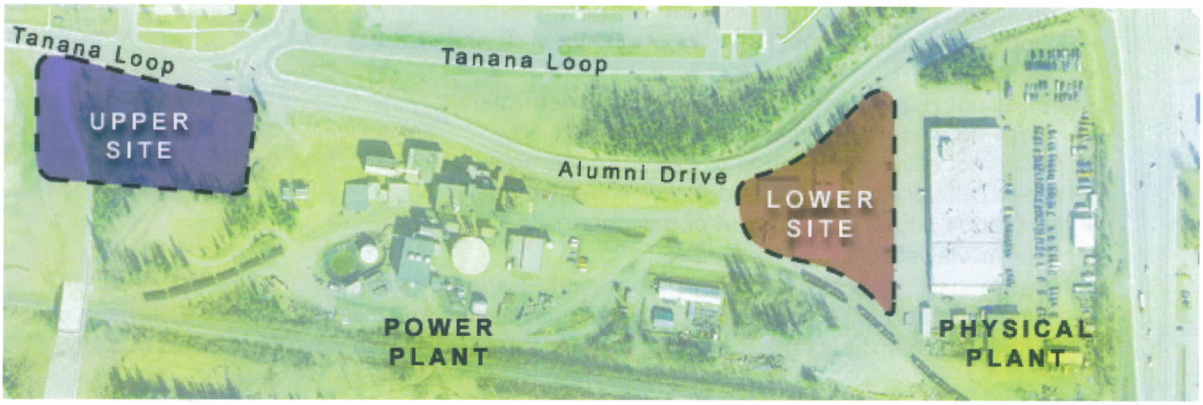
University of Alaska Fairbanks
Energy Technology Facility
Alternate Site Comparisons
July 28, 2009

ENERGY TECHNOLOGY FACILITY, ALTERNATE SITE COMPARISONS:

During the facility programming and concept design phase of the University of Alaska Fairbanks Energy Technology Facility Project, an alternate site was suggested. This alternate site is located due south of the intersection of Alumni Drive and Tanana Loop, on a knoll which is due west of the old Fairbanks Street alignment. (Upper Site)

The site originally designated is located between the UAF Utilities Operations (Power Plant) and the UAF Facilities Services (Physical Plant Building) on ground that is currently occupied by the MIRL building and by two other wood frame buildings. (Lower Site)

The two sites have been designated the Upper and Lower Sites. The Lower Site was approved by the Board of Regents when the project received Project Approval.



The following are early considerations of the advantages and disadvantages of each site:

- **Lower Site: Power Plant/Physical Plant**
  - **Advantages:**
    - Near campus East entry, providing easy access for visitors.
    - A concrete utilidor bisects the site, providing access to steam, water, primary normal power, DI water, communications, and data.
    - Potential for access to ground water for cooling.
    - Horizontally near Duckering Building. Although the vertical separation is 75 feet, this can be enhanced with upper level bridge from top level of new Energy Technology Facility.
    - Appropriate site for "dirty" and "noisy" engineering activities.
  - **Disadvantages:**
    - Potential environmental clean-up.
    - Requires construction of new sewer line to University Avenue with lift station.
    - Requires demolition of two existing structures.
    - Requires relocation of MIRL Building.
    - Requires temporary relocation of existing Alaska Center for Energy and Power functions which are currently housed in MIRL.
    - Requires extension of priority power line.
    - Site is congested with service vehicle and truck traffic.
    - Site will be impacted by construction of new 130 foot high (seven stories) power plant. Once in operation, new power plant will require significant delivery of fuel by large trucks.
    - Requires reconfiguration of existing Facilities Services parking.

- Not enough space for required parking; tenants will be required to take shuttle from common parking lots.
- Poor views from site, except near view of bluff to north.
- Shallow ground water restricts construction of basement.

- **Upper Site: South of Alumni Drive and Tanana Loop Intersection**

  - **Advantages**
    - Near new utilities switch gear building. (Critical Electrical project 1B future)
    - Near utilidor, providing access to steam, water, DI water, primary and priority power, chilled water, data and communications.
    - Sewer line bisects site.
    - Near general common parking lot.
    - Good access off Alumni Drive for students, staff and visitors.
    - Good soils.
    - Does not require upgrade of sewer or power utilities.
    - Does not require moving of existing structures.
    - Does not require relocation of existing programs.
    - Near Utilities Operations and Power Plant activities.
    - Elevation allows construction of basement.
    - Better views from site.
    - Better visibility of the facility; at prominent location of campus.
    - Aligns with other future projects and planned development on South side of Tanana Loop Road, which includes the new Whitaker Hall Fire Station and new Transit Bus Station.

  - **Disadvantages**
    - Needs to be approved by Master Planning Committee and Board of Regents.
    - Is a prominent, open space on campus.
    - Not a flat site.
    - Requires coordination with construction of switch gear facility.
    - Brings some "dirty" and noisy activity up to a closer elevation with Main Campus.
    - Farther distance from Duckering, but less elevation (reasonably level walk).

Attached is an alternate site comparison matrix which further identifies the differences between the alternate sites.

Given that buildings need to be demolished and new utilities constructed at the Lower Site, the cost associated with preparing the Lower Site are greater than costs to develop the Upper Site. It is estimated that at the Lower Site, the costs to upgrade utilities, demolish and relocate buildings will be on the order of $1.7 million. At the Upper Site, the cost to re-grade the site as necessary to accommodate the Energy Technology Facility is on the order of $700,000. Therefore the Upper site offers a $1M savings in Total Project Cost.

ISSUES	LOWER SITE	UPPER SITE
SIZE	80,500 sf	104,500 sf
LOCATION / DESCRIPTION	Located south of Alumni Drive, between the Physical Plant Offices and Shops and the UAF Power Plant. There currently are 3 existing structures on the site that either need to be demolished or moved.	Located south of Alumni Drive, east of Fairbanks Street. Property is currently vacant. A new electrical switch gear building is in the planning stages, with the utilidor to serve this facilty is currently under construction.
TOPOGRAPHY	Virtually flat with many trees at NE corner of site. There is an 20-30 foot wide slough bed bounded by trees that runs along the south side of Alumni Drive.	The site is the top of a small knoll, with the crown of the knoll running north/south through the middle of the site. Slope is on the order of 3-5 %. At the east edge, the site drops off fairly steeply to the Power Plant site.
IMAGE / VISIBILITY	Design should be taller than 2 stories to be seen among the land of the "bigs"	High visibility even for a 2 story design
VIEW	"Industrial" view to South, East , and West, campus and cliff face view to north across from Alumni Drive	Long range mountain and city view to South, campus view to North across Alumni Drive / Tanana Loop, view of Chena Ridge and Ester Dome to the west, and upper Chena and Tanana River valleys.
PEDESTRIAN ACCESS	Pedestrian access from upper campus is via stairs, or by shuttle bus.	Pedestrian access would be via upper campus sidewalks, or by shuttle bus.

ISSUES	LOWER SITE	UPPER SITE
PROXIMITY TO DUCKERING	Vertical distance is 75 feet, and the horizontal distance is 600 feet. Potential for pedestrian bridge from upper floors to provide better access to Duckering	Vertical distance is 35 feet, and the horizontal distance is 1,250 feet.
OTHER ADJACENCIES	Near Physical and Power plant provides ease of access to those facilities, particularly for DD&C staff. Distance to Power Plant is 600 feet. Distance to Lola Tilly Commons, 1400 ft: to Library, 1000 ft: to Student Recreation Center, 2600 ft: to Wood Center, 1400 ft.	Centrally located, with good access to nearby Power Plant. Distance to Power Plant is 500 feet. Distance to Lola Tilly Commons, 200 ft:. to Library, 1000 ft.: to Student Recreation Center, 1200 ft.: to Wood Center, 1000 ft.
BUS ACCESS / SHUTTLE	Camups shuttle bus route passes this site. There is a bus stop 400 feet east of the site on the north side of Alumni Drive	Campus shuttle passes this site, and there appears to be a bus stop just west of the Junction of East Tanana Loop, Alumni, and South Chandelar, directly adjacent to this site.
PARKING	Limited area for on-site parking; Lots north and east of the Physical Plant can be reconfigured to provide additional parking. Parking may be provided south of railroad tracks, with corresponding safety concerns.	Site is 25,000 sf larger, with same building footprint, therefore antiicipate site can be configured to reasonably provide parking for 25 POV or UAF vehicles. Parking of equipment separately considered.
ROAD IMPACTS	Minor improvement to turn in/out from Alumni Drive may be required.	Site planning should account for new traffic roudabout at Tanana Loop, Alumni Drive, South Chandelar junction. Fairbanks street would need to be redeveloped to provide site access.

ISSUES	LOWER SITE	UPPER SITE
TRAFFIC ISSUES (TRUCKS ETC)	Access to this site is hared with the Physical Plant maintenance vehicles, as well as fuel trucks servicing the power plant. If/when power plant is expanded to include bio-mass fuels, these fuels will be truck delivered. Site is futher impacted by coal train deliveries, which will continue once new power plant is constructed.	Site access will be shared with new switch gear building.
DEMOLITION	Two existing buildings will need to be demolished. The MIRL building will need to be relocated.	Exisitng park would be eliminated.
GEOTECHNICAL/ENVIRONMENTAL	Potential hazardous materials cleanup; extent unknown. Soils consist of silts over layers sands and gravels to bedrock. Depth to bedrock varies from 35-50 feet.	No hazardous materials anticipated. Soils are fine grained material over bedrock. Good founation material anticipated.
UTILITIES	Existing utilidor runs E/W under site	New utilitdor serving switch gear buildings is being constructed, and crosses site at east boundary.
Electrical	Yes for primary power. Backup power will need to be installed	Yes, both primary and backup power.
Telecommunications/data	UAF fiber optic cable in utilidor, as is telephone	UAF fiber optic will be in new utilidor, as will telephone.
Chilled Water	Not available	Will be available with new utilidor
DI water	Not available	Will be available with new utilidor

ISSUES	LOWER SITE	UPPER SITE
Natural Gas	Not available	Not available
Sewer	Requires new sewer line lift station. Line will be sized to serve powe r plant and phyiscal plant	Available adjacent to site.
STORM WATER RUN-OFF	Localized storm drainage system	Not available