West Ridge Deferred Maintenance Master Plan Information Item

PROJECT UPDATE

UAF completed and gained Board Academic and Student Affairs Committee agreement with the Mission Area Analysis and Statement of Need that demonstrated the importance of the programs that are on West Ridge. The project team has completed facility audits on the five older buildings and developed a formal database of deferred maintenance items along with finite cost analysis for each item as well as for each building as a whole. With this data, UAF has developed a long term renovation plan for West Ridge that involves significant investment in some facilities, repurposing or demolition of others, and new space to accommodate both a space deficit and need for surge space.

With the high quantity of deferred maintenance needs, the best approach for renovations will be to displace major portions or all of the program activity in the older facilities while the construction occurs. With only a small fraction of useable space on West Ridge available for reassignment during building renovations, some new space will need to be constructed. The current plan calls for approximately 120,000 square feet of new space to accommodate fluctuations in space needs and reassignment, building repurposing, and a space deficit identified in the 2010 Master Plan.

Based on the Facility Condition Index for the older buildings, UAF is recommending investment in complete renewal of the Arctic Health Research Building, Irving 1, and Elvey as laboratory facilities for research and teaching. The existing O'Neill and Irving 2 facilities are recommended for demolition or repair, with construction of new space to support administrative, student support, research support, and classroom functions since the cost to renovate them into state of the art labs exceeds the replacement cost of the buildings. The lab functions currently housed in the two facilities would eventually be relocated to the proposed new facility. Through the renovations, repurposing, and construction of new space, UAF also will accomplish a major realignment of space by department.

Overall, the multiyear plan will take a major investment of nearly $361M in deferred maintenance and new construction funds. The initial phases of the plan will be carried out with smaller portions of funding from FY13 and FY14 State of Alaska Deferred Renewal funds. These initial phases include relocation of the animal vivarium, relocation of critical functions such as the Alaska Earthquake Information Center from Elvey into the West Ridge Research Building, and possibly concept design for renovations in Elvey, Irving 1 and Arctic Health.

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April 25, 2013

2 West Ridge Research Facilities
Introduction

The West Ridge Deferred Maintenance Master Plan is intended to address major renewal or replacement necessary to bring the facilities up to standard while maintaining continuity in University of Alaska Fairbanks' research enterprise, and increasing the integration of teaching into these facilities. The existing program deficit identified in the 2010 Campus Master Plan necessitates the development of sufficient surge space for programs displaced by renovations. Initially the project will assess the condition of each facility on the UAF West Ridge Campus, and develop logical phasing, budgetary estimates, and program space allocation.

This study will build upon the 2010 Campus Master Plan and will be guided by its established goals.

- Support the integration of teaching and research.
- Enhance both the academic and student life experience.
- Improve campus access and circulation.
- Preserve and highlight the unique natural and cultural aspects of the campus.
- Enhance space quality and maximize effective utilization.
- Employ best practices in sustainability.

3 West Ridge Research Facilities
Introduction

This Planning effort has the following components:

- A space programming effort which included interviews with UAF administrators, faculty, and staff. A 5 year planning horizon of 2017 has been used in verifying projected space deficits identified in the 2010 Campus Master Plan.

- A "DEEP LOOK" Facility Condition Survey which investigated each of the five principal and oldest research facilities In UAF West Ridge Research Campus. This investigation identified facility systems deficiencies, and developed costs to correct these deficiencies. An interactive sortable data base was prepared for future UAF Facilities use in correcting these deficiencies.
- Development of a Facility Master Plan which
    - Will provide up to date research facilities suitable to meet the needs of the world class research which occurs at UAF.
    - Colocates currently scattered but related research groups.
    - Suggests a time development line resulting a logical sequence of activities.
    - Provides a budget level cash flow analysis based upon the time line, and estimated costs of making the necessary Research Facility improvements.

4 West Ridge Research Facilities

Research Enhancements

The University of Alaska Fairbanks has historically been able to secure grant funding at levels that are well above peer institutions on a per capita basis. This success has enabled UAF to become a world class research center. Anticipated enhancements for research revenue include:

- State funded research such as UAV and Ocean Acidification.
- Research focused on the Issues of the Arctic including aerospace, climate change, and oil spill response. UAF 's position of strength in the global research market provides an advantage in securing private grants in this topic area.
- The strength of UAF's interdisciplinary programs to attract top doctoral candidates and their associated grant funding.
- Continuation and anticipated expansion of existing programs including EPSCOR and SNAP.

5 **West Ridge Research Facilities**
Allocation by Space Type

Type	Current (ASF)	Adequate (ASF)	Need (ASF)
Office	149,715	156,884	7,169
Research Laboratory	157,892	220,637	62,745
Classroom	20,091	28,822	8,731
Classroom Laboratory	43,341	53,291	9,950
Conference	18,753	25,763	7,010
Vivarium	15,704	16,087	383
Computer	6,677	6,934	257
Greenhouse	11,708	17,208	5,500
Collections	31,725	44,469	12,744
Exhibitions	17,314	17,314	0
Other	13,028	45,041	32,013
Total	**485,948**	**632,450**	**146,502**

- 2010 Campus Master Plan identifies a projected area deficit of approximately 183,000 ASF for Research and Open Laboratories, Animal Quarters, Hazardous Materials, Greenhouse, Meeting Areas, and Offices. The new Murie Building will provide approximately 30,000 ASF of dedicated research related space.

Space Projection Summary

6 West Ridge Research Facilities

Facility Deficiency Analysis

- In the first 4 months of 2013, a DEEP LOOK condition survey was conducted of the following buildings: Elvey, O'Neill, Irving I & II, and Arctic Health Research
- This analysis included a new remediation cost estimates.
- Independent estimates of facility replacement and demolition costs have been developed by the Planning team.
- A facility condition index (FCI) has been calculated for the highlighted buildings.
  - FCI = Renovation Cost/Replacement Cost.
  - An FCI greater than 0.70 typically merits serious replacement consideration.
  - The FCI range for Elvey, O'Neill, Irving 1, and Irving 2 substantially exceed 0.70 with the following needs:
    - Full replacement of mechanical and electrical systems.
    - Full exterior envelope upgrades to meet current energy conservation goals.
    - Significant hazardous materials abatement.
    - Significant seismic and structural upgrades at Elvey and O'Neill.
  - AHRB, Elvey, and Irving 1 are classified as High Program/Low Net Asset Value. O'Neill and Irving 2 are classified as Low Program/Low Net Asset Value.
  - Since Akasofu, WRRB, and Life Sciences are new construction the FCI is assumed to be significantly below 0.70.
- Less than 9,000 ASF of surge space will become available with the inclusion of Life Sciences. Much of the remediation and upgrades necessitate entire floors or buildings to be temporarily vacated during this process. Additionally, Elvey, Irving 1, and Irving 2 are not ideally suited to support efficient open wet lab research configurations.

7 **West Ridge Research Facilities**
Deep Look Survey

Reference 49

Purpose

A “deep look” facility and condition assessment survey of the Arctic Health, Elvey, Irving I, Irving II, and O’Neill buildings was conducted in January/February 2013. The survey provides a comprehensive list of physical and functional building deficiencies that is incorporated into a database that links each deficiency with an estimated cost to correct the deficiency. Together, this information can be used to determine the level of renewal or replacement of buildings and infrastructure to guide decisions for capital funding requests.

Process

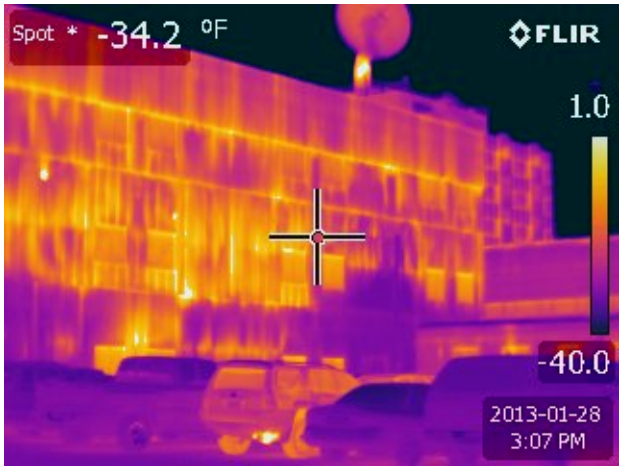
- Review previous reports, drawings, and other available information
- Site investigations; room by room; broad to specific
- Compile information into one deficiency database
- Send to estimator for pricing
- Confirm FCI for each building

Database

- 1,400 total deficiencies identified
- Laboratories comprised 920 of these = 66% of total
- Major Building Systems (Architectural, Electrical, Mechanical, Structural); plus laboratories for functionality, life safety, code, and ADA
- Deficiency, photo, and correction action
- Categories (Life Safety, ADA, Code, Energy, Deferred Maintenance, Functionality)
- Priority (Immediate (0 yrs.); Critical (1 yr.); Necessary (2-5 yrs.); Recommended (6-10 yrs.))
- Costs (Category 1 = labor & material; Category 2 = labor & material + project development cost factors
- Use – simple to sort/filter by building, system, priority, category, and its exportable to Excel

8 **West Ridge Research Facilities**
Images

North elevation of O'Neill



Energy deficiency: Infrared Image

Lab deficiency
Obsolete equipment hoods

Mechanical deficiency
Failing pipe insulation

O'Neill interstitial space
Structural deficiency
Inadequate tie to concrete core
Un-braced suspended ceiling

Electrical deficiency
Wet pipes near panel

Deficiency Images

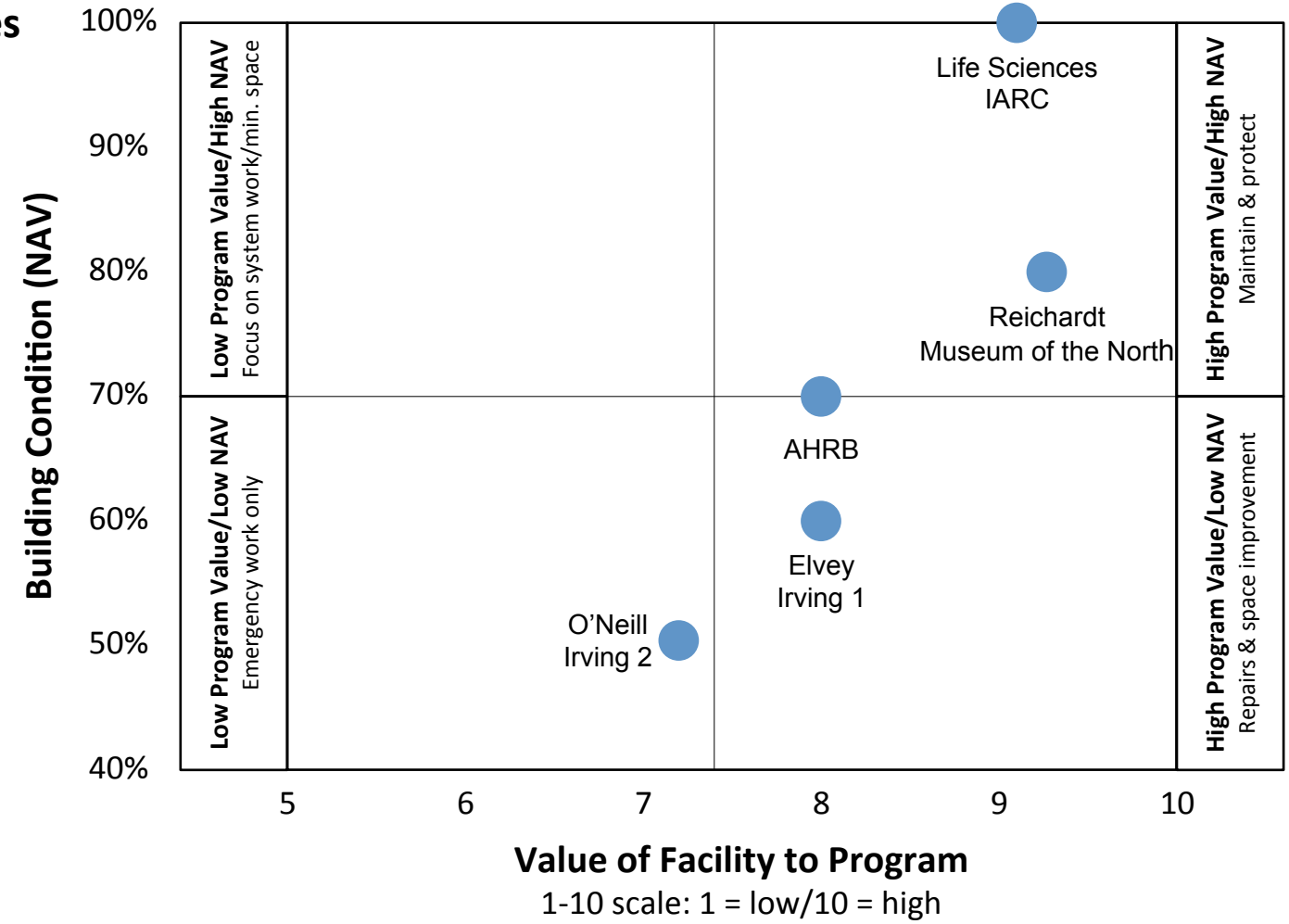
9 West Ridge Research Facilities

Laboratory Deficiency Themes

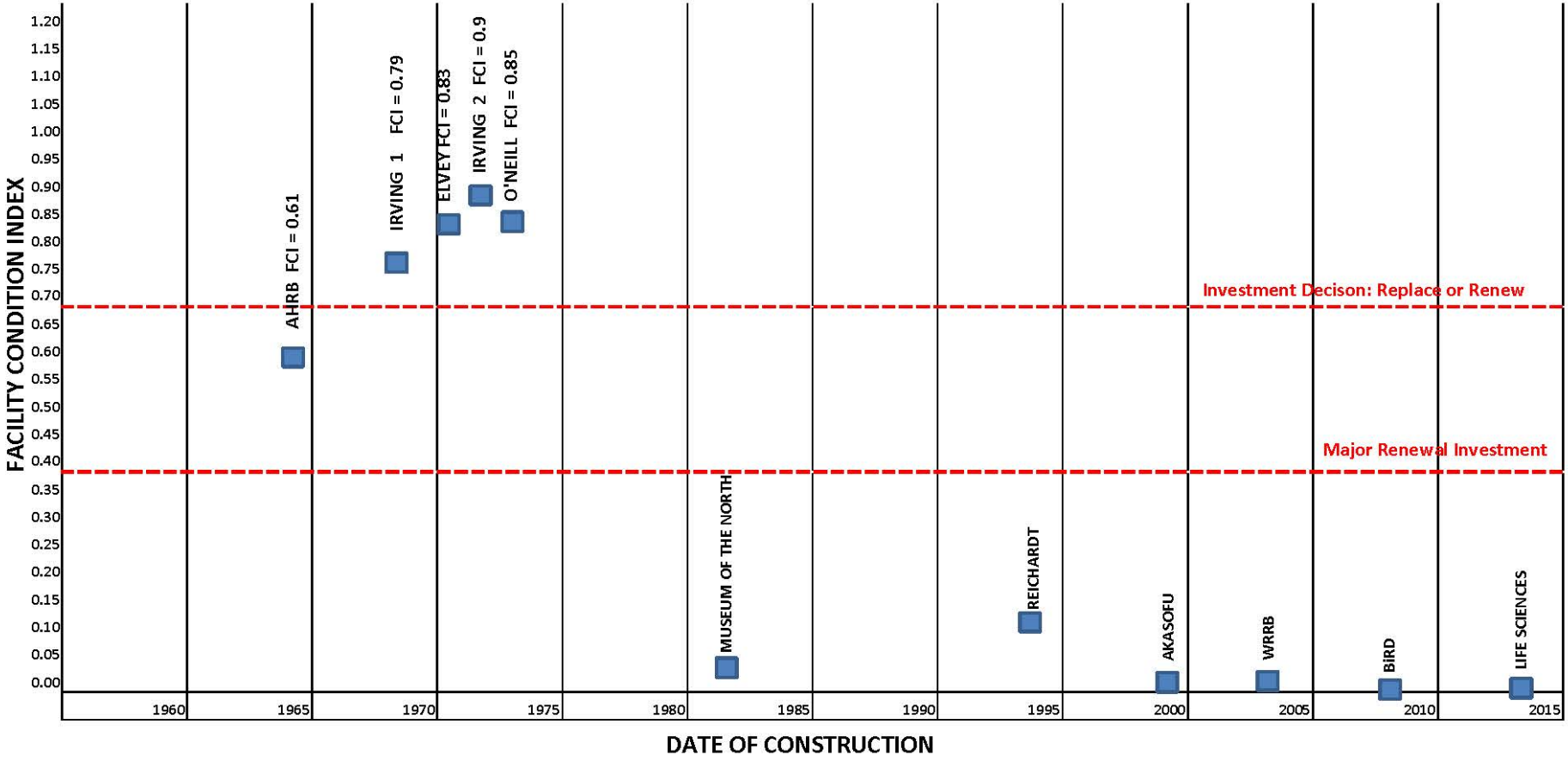
- Laboratories renovated within the last 10 years support current research standards. Most of this renovation is concentrated in Arctic Health Research Building and Irving 1.
- The Mechanical, Electrical and Plumbing systems for Elvey, O'Neill, and Irving 2 do not support current wet lab research standards. Recirculated air combining lab and office areas is utilized in O'Neill and Irving 2. Elvey is better suited for dry research and office functions: the ceiling heights limit proper lab ventilation. Impurities in the water supply for O'Neill make it unfit for most research purposes. The vibration performance for O'Neill limits the type of research that can occur in the building.
- Old and worn casework is often installed incorrectly and is not seismically braced. Finishes including countertops, flooring, and ceiling tiles most likely contain hazardous materials. Old and non-code compliant equipment pose potential safety risks.
- Most labs do not adhere to ADA accessibility codes. Safety clearances between bench tops and around equipment are often insufficient. Safety showers and emergency eyewash stations are either inaccessible or missing.
- Lack of sufficient research related office space has led to lab areas either sharing or being converted to office use. Field gear and lab supplies are often located in the research lab areas due to insufficient field equipment storage space.

10 **West Ridge Research Facilities**
Value Analysis

Net Asset vs. Program Value

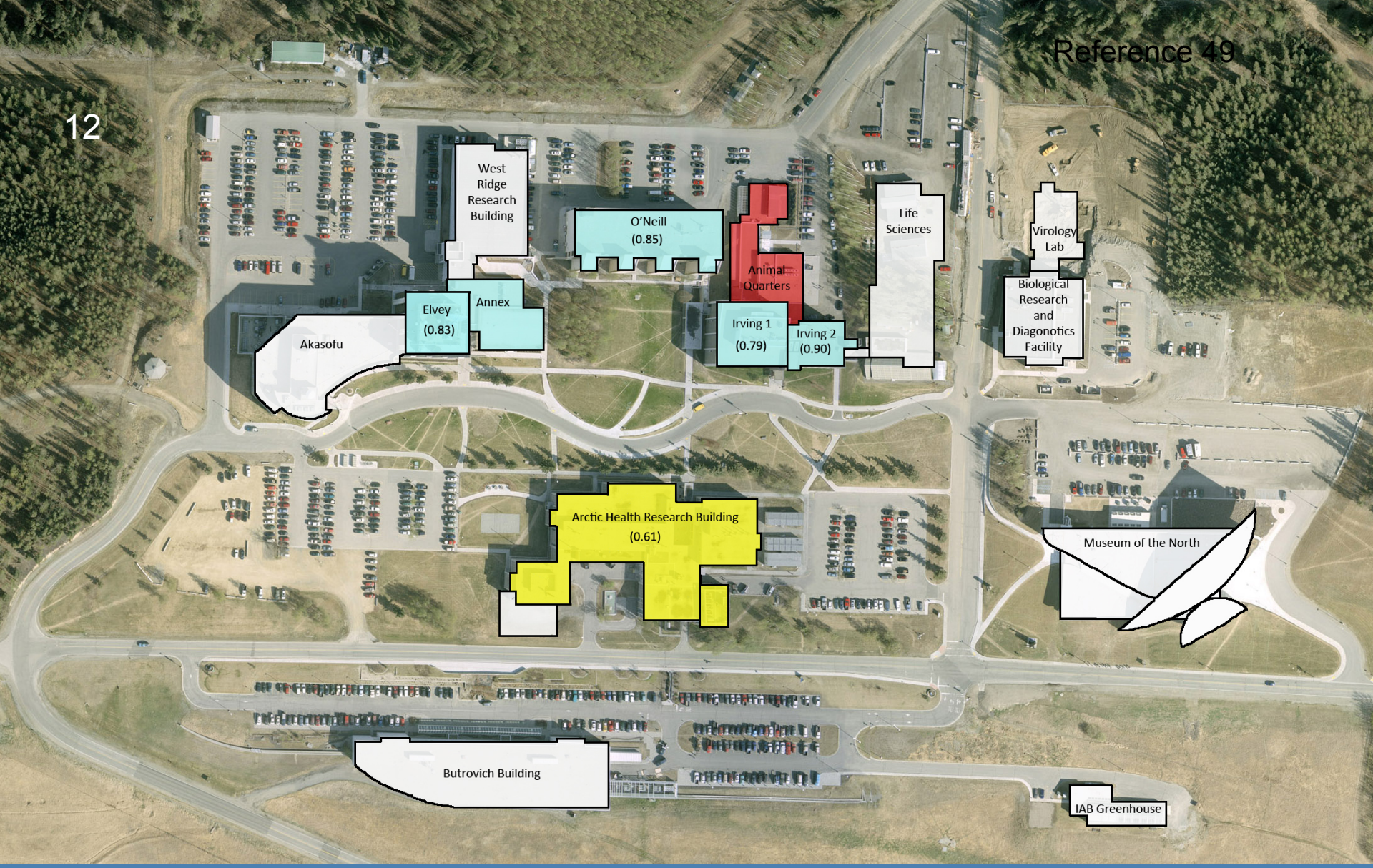


11 West Ridge Research Facilities Building Condition Analysis



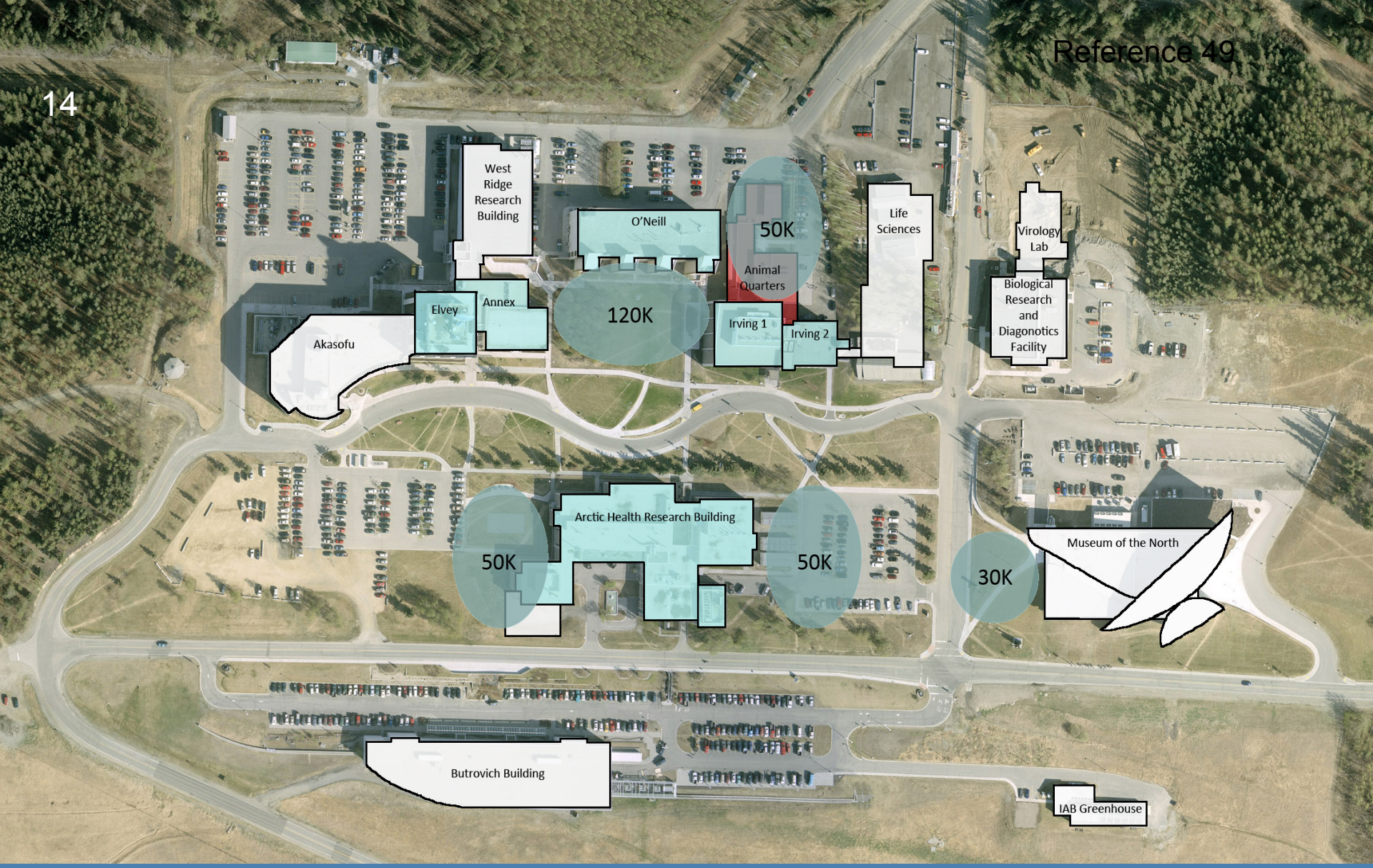
Master Plan Time Line

Reference 49



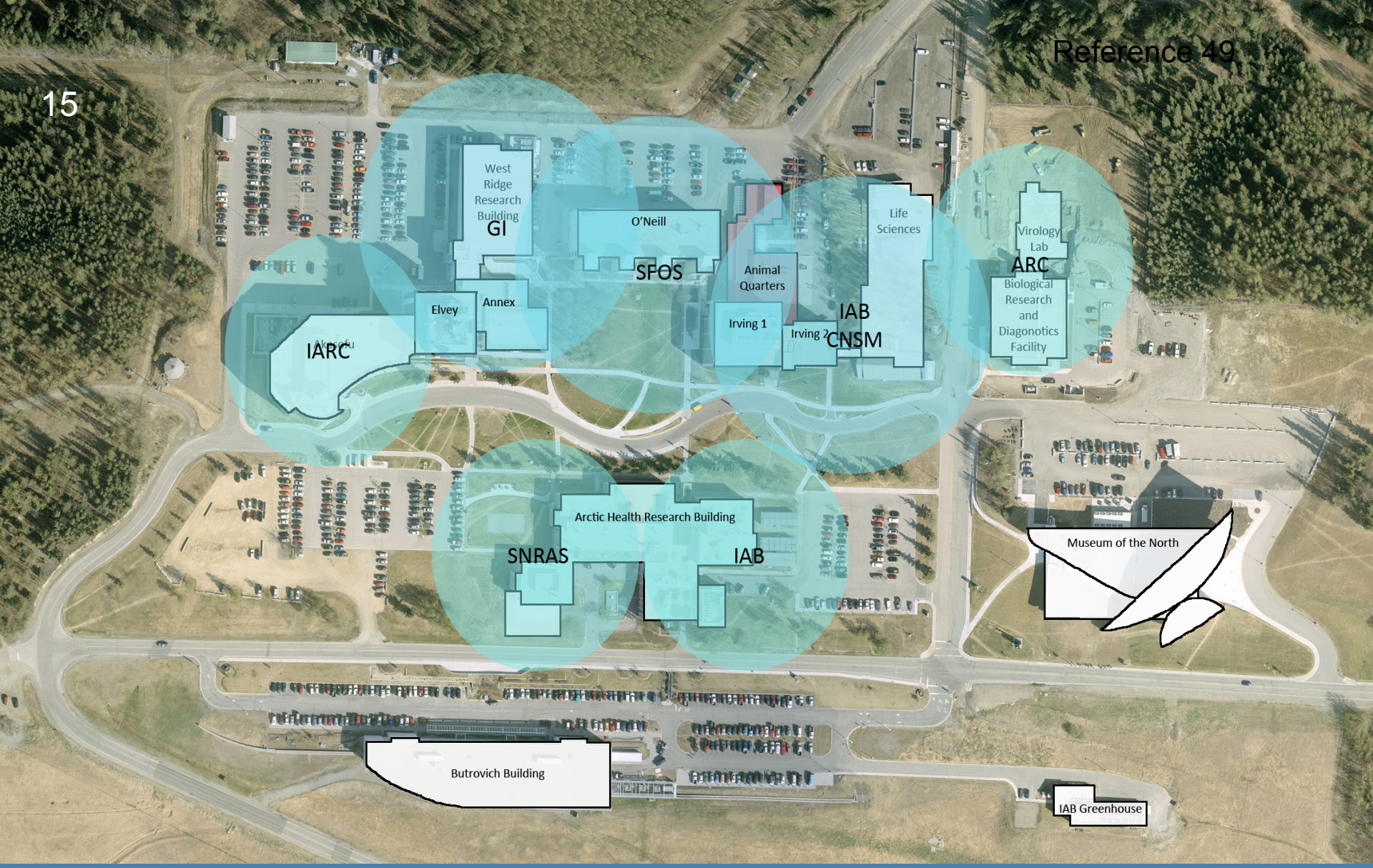
Facility Condition Index

Reference 49



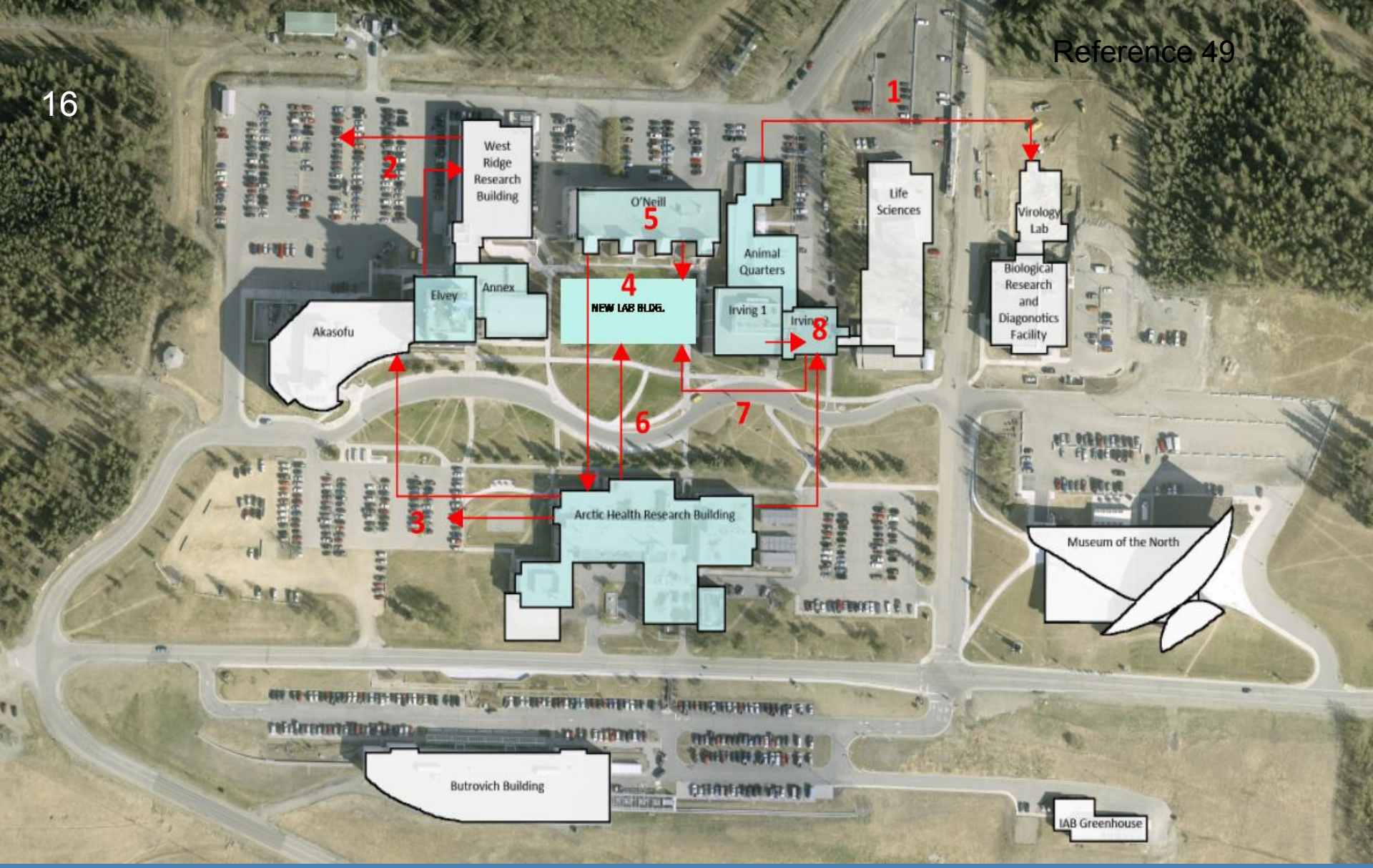
Building Site Capacity

Reference 49

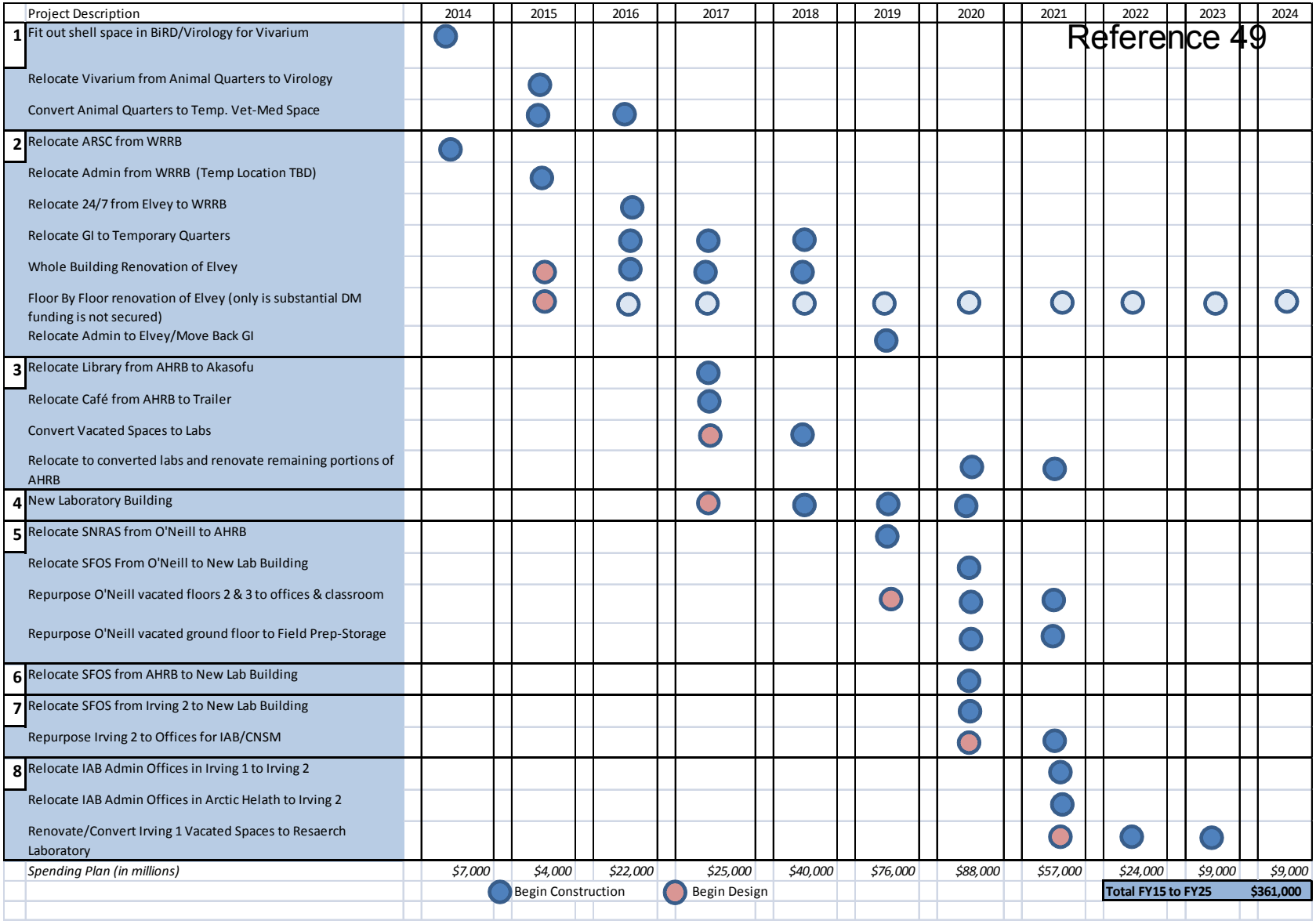


Departmental Master Plan

Reference 49



Master Plan Sequence



Master Plan Time Line and Cash Flow

Reference 49

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