

NENANA HEALTH CLINIC



ALASKA RURAL PRIMARY CARE FACILITY ASSESSMENT AND INVENTORY SURVEY REPORT

FEBRUARY 30, 2002



Tanana Chiefs
Conference, Inc

Table of Contents

1. EXECUTIVE SUMMARY	1
A. OVERVIEW	1
B. RENOVATION/UPGRADE AND ADDITION	2
C. NEW CLINIC	2
2. GENERAL INFORMATION	3
A. PURPOSE OF REPORT AND ASSESSMENT PROCESS	3
B. ASSESSMENT TEAM	3
C. REPORT FORMAT	3
D. SITE INVESTIGATION	3
3. CLINIC INSPECTION SUMMARY	5
A. COMMUNITY INFORMATION	5
B. GENERAL CLINIC INFORMATION	6
1) Physical Plant Information	6
C. PROGRAM DEFICIENCY NARRATIVE	7
1) Space Requirements and Deficiencies	7
2) Building Issues	8
3) Functional Design Issues	9
4) Health Program Issues	9
5) Utilities	9
D. ARCHITECTURAL / STRUCTURAL CONDITION	9
1) Building Construction	9
2) Interior Construction	10
3) Structural	10
E. MECHANICAL CONDITION	10
1) Heating System	10
2) Ventilation System	11
3) Plumbing System	11
F. ELECTRICAL CONDITION	11
1) Electrical Service	11
2) Power Distribution	11
3) Grounding System	11
4) Exterior Elements	12
5) Electrical devices and lighting	12

6) Emergency System _____	12
7) Fire Alarm System _____	12
8) Telecommunication _____	13
G. CIVIL / UTILITY CONDITION _____	13
1) Location of Building _____	13
2) Site Issues _____	13
3) Proximity of Adjacent Buildings _____	13
4) Utilities _____	13
H. EXISTING FACILITY FLOOR PLAN (SITE PLAN IF AVAILABLE): _____	13
4. DEFICIENCY EVALUATION _____	14
A. DEFICIENCY CODES: _____	14
B. PHOTOGRAPHS _____	16
C. COST ESTIMATE GENERAL PROVISIONS _____	16
1) New Clinic Construction _____	16
2) Remodel, Renovations, and Additions _____	17
5. SUMMARY OF EXISTING CLINIC DEFICIENCIES _____	19
6. NEW CLINIC ANALYSIS _____	20
7. CONCLUSIONS AND RECOMMENDATIONS _____	22

Appendix A: Specific Deficiencies Listings
Appendix B: Reference Photographs

1. EXECUTIVE SUMMARY

A. OVERVIEW

The purpose of this report is to document rural community health program clinic needs. Those needs have been assessed from several perspectives. This is the second stage of the planning and implementation process for improving the quality of rural primary care through capital improvements to community clinics.

The first stage was development of the "Alaska Rural Primary Care Facility Needs Assessment" dated 10/23/2000. The purpose in part of this effort was to establish base lines for the planning and implementation to follow. This second stage is to document rural community health clinic needs and conditions from several perspectives as follows:

- 1) A spatial assessment involving spaces (as-built floor plan) for comparison with pre-established Alaska Rural Primary Care Facility (ARPCF) space basis, as set forth in the ARPCF needs assessment dated 10/23/2000.
- 2) A code and condition survey of the existing facility
- 3) Identification of a site for a new facility (if applicable/decided) and the status of services to that site (road, electricity, water, sewer, etc.).
- 4) Documentation of functional inputs as communicated by local people or observed by the assessment team (Note: functional planning was a component of the needs assessment in the stage 1).
- 5) Development of options to facilitate programmatic and technical needs and deficiencies,
- 6) Costing of those options and
- 7) Recommendations as to the option or options that best address the clinic need and deficiencies¹.

ARPCF clinic basis were standards established in stage 1 based on population. They translate into three clinic sizes as follows:

Small Clinic

Population	20-100
Space Standard	1,535 gsf (heated)

Medium Clinic

Population	101-500
Space Standard	1,989 gsf (heated)

Large Clinic

Population	501+
Space Standard	2,459 gsf (heated) ²

¹ There are only four options available in any rural community as follows: 1) New Facility, 2) Existing Facility renovations and or additions, 3) limited scope renovations and/or additions – driven by committed funding from either capital or operating perspectives (this option is not costable without scope or funding definition), 4) status quo (no change) (note: any of these options can apply to combined facilities existing or envisioned.)

² The intent of the code and condition survey is to identify and cost deficiencies inclusive of spatial deficiencies. The accumulation of those costs is then intended to be compared to the cost of a new clinic. If the costs of renovations and additions exceed 75% of new construction then a new clinic option is considered viable.

Nenana's population has a population of 402 (2000 Census). This places Nenana in the medium clinic size. The Nenana clinic is only a few years old. It is part of a combined facility. Other users include: RHMA offices, a large kitchen, and a couple of large community rooms. The overall gross square footage for the facility is 5,454 sf and for the clinic portion is 2,401 gsf. The ARPCF square footage guidelines for a medium clinic are 1,989 gsf. Therefore, the Nenana clinic, by these standards, is 420 gsf over the standards.

Contextual community issues and perspectives are as follows:

Participants in this survey from the community of Nenana stated that Nenana has a unique situation, i.e. that a large number of tourists come through the community in the summertime and that many of them and many of the road travelers in that area utilize the clinic for emergency situations. In this respect Nenana views themselves as sub regional.

- It is a new clinic.
- Its spatial layout is inefficient.
- It has a considerably different functional/spatial view as to clinic needs than the ARPCF standards.
- It has a circuitous corridor space, which at a cursory code level appears to require a code classification of corridor. Spatial configurations and door types do not suggest that it was constructed this way.
- One major spatial difference of perspective is in the trauma room. The Nenana clinic trauma room is 118 sf, whereas the ARPCF guidelines suggest a 200sf room.

Based on gross square footages and the new condition of the facility, no additions are recommended. However, a post occupancy analysis and some space planning assistance might improve function and efficiency at the community's discretion. Therefore, partial scope renovations could be productive.

B. RENOVATION/UPGRADE AND ADDITION

Nenana is a new mostly commercial quality facility; viewed against the ARPCF standards it is 412 gsf over the standard. Its layout although new, is inefficient. The vision of the users/designers of the existing facility is quite different in terms of spatial configuration sizes and uses from those of the ARPCF standards. Aside the existing spatial layout, the facility seems somewhat inefficient. These considerations suggest that funding at some level could benefit the clinic.

Resolutions of code and condition and renovation considerations suggest that for economic reasons, consideration should be given to a new clinic. However, the recommendation of the consultant team would be for modifications to the current structure rather than new construction due to the recent construction and good condition.

C. NEW CLINIC

Resolutions of code and condition and renovation considerations suggest that for economic reasons, a new clinic may be recommended. However, the recommendation of the consultant team would be for modifications to the current structure rather than new construction due to the recent construction and good condition.

2. GENERAL INFORMATION

A. PURPOSE OF REPORT AND ASSESSMENT PROCESS

ANTHC has entered into a cooperative agreement with the Denali Commission to provide management of the small clinic program under the Alaska Rural Primary Care Facility assessment, planning, design, and construction. Over 200 clinics will be inspected through the course of the program. The purpose of the Code and Condition survey report is to validate the data provided by the community in the Alaska Rural Primary Care Facility Needs Assessment and to provide each community with a uniform standard of evaluation for comparison with other communities to determine the relative need between the communities of Alaska for funding assistance for the construction of new or remodeled clinic facilities. The information provided in this report is one component of the scoring for the small clinic RFP that the Denali Commission sent to communities in priority Groups 3 and 4. The information gathered will be tabulated and analyzed according to an asset of fixed criteria that should yield a priority list for funding. Additionally, the relative costs of new construction vs. remodel/addition will be evaluated to determine the most efficient means to bring the clinics up to a uniform standard of program and construction quality.

A team of professional Architects and Engineers traveled to the site and completed a detailed Field Report that was revised by all parties. Subsequently, the team completed a draft and then final report of the facility condition.

B. ASSESSMENT TEAM

The survey was conducted on November 8, 2001 by Robert F. Bezek, Architect, Bezek Durst Seiser, Inc., Charlie Chien M.E. PDC, Inc., Scott Henrickson with ANTHC, and Charles Woodlee and Molly Patton with Tanana Chiefs Conference, Inc. Village contacts were Kathy Keyes - Tribal Administrator, Edger Monroe - Construction and Design, Jack Irwin - First Crew Chief, and Victor Lord - Second Crew Chief. ANTHC made introductions and conducted village briefings to ensure a complete understanding of the inspection process. Team members who assisted in the preparation of report from information gathered included members of the field team above and Robert Bezek, Bezek Durst Seiser, Inc., and Charlie Chien M.E. PDC, Inc.

C. REPORT FORMAT

The format adopted is a modified "Deep Look" format, a facilities investigation and condition report used by both ANTHC and the Public Health Service, in maintaining an ongoing database of facilities throughout the country. Facilities are evaluated with respect to building code compliance, general facility condition, and spatial deficiencies. The written report includes these evaluations, in addition to sketches of building construction details and identification of potential sites (where available) for a new clinic. This information is available for viewing at ANTHC's Anchorage offices and will be held for reference.

D. SITE INVESTIGATION

On November 8, 2001, the team flew to the site, made observations, took photos and discussed needs with on site personnel for the facility. Approximately three hours were spent on site. Darkness inhibited

exterior photographs. Interviews were conducted with Victor Lord, Second Chief/Electrical; Jack Irwin, First Chief; Edgar Monroe, Construction and Design; and Kathy Keyse, Tribal Administrator. The city provided information on the existing building site and utilities. Local people had no complaints of their new clinic.

3. CLINIC INSPECTION SUMMARY

A. COMMUNITY INFORMATION

Population:

- ◆ 486 (2000 Census)
- ◆ Home Rule City, Unorganized Borough, Nenana City School District, Doyon Limited

Location: Nenana is located in Interior Alaska, 55 road miles southwest of Fairbanks on the George Parks Highway. Nenana is located at mile 412 of the Alaska Railroad, on the south bank of the Tanana River, just east of the mouth of the Nenana River. It lies 304 road miles northeast of Anchorage. It lies at approximately 64d 34m N Latitude, 149d 05m W Longitude. (Sec. 14, T004S, R008W, Fairbanks Meridian.) Nenana is located in the Nenana Recording District. The area encompasses 6 sq. miles of land and .1 sq. miles of water.

History: Nenana is in the western-most portion of Tanana Athabascan Indian territory. It was first known as Tortella, an interpretation of the Indian word "Toghotthele," which means "mountain that parallels the river." Early explorers such as Allen, Harper and Bates first entered the Tanana Valley in 1875 and 1885. However, the Tanana people were accustomed to contact with Europeans, due to trading journeys to the Village of Tanana, where Russians bartered Western goods for furs. The discovery of gold in Fairbanks in 1902 brought intense activity to the region. A trading post/roadhouse was constructed by Jim Duke in 1903, to supply river travelers and trade with Indians. St. Mark's Episcopal mission and school was built upriver in 1905. Native children from other communities, such as Minto, attended school in Nenana. A post office opened in 1908. By 1909, there were about 12,000 residents in the Fairbanks area, most drawn by gold mining activities. In 1915, construction of the Alaska Railroad doubled Nenana's population. The Nenana Ice Classic - a popular competition to guess the date and time of the Tanana River ice break-up each spring - began in 1917 among surveyors for the Alaska Railroad. The community incorporated as a City in 1921. The Railroad Depot was completed in 1923, when President Warren Harding drove the golden spike at the north end of the 700-foot steel bridge over the Tanana River. Nenana now had a transportation link to Fairbanks and Seward. According to local records, 5,000 residents lived in Nenana during this time; however, completion of the railroad was followed by an economic slump. The population in 1930 was recorded at 291. In 1961, Clear Air Force Station was constructed 21 miles southwest, and many civilian contractors commuted from Nenana. A road was constructed south to Clear, but north, vehicles were ferried across the Tanana River. In 1967 the community was devastated by one of the largest floods ever recorded in the valley.

Culture: The population of Nenana is a diverse mixture of non-Natives and Athabascans. The majority of residents participate in subsistence activities. Several Iditarod sled dog race competitors and former champions are residents of Nenana.

Economy: Over 50% of the year-round jobs are government-funded, including the City, Nenana School District, Yukon-Koyukuk School District, and DOT highway maintenance. Nenana has a strong private sector economy with a seasonal fluctuation as the center of rail-to-river barge transportation center for the Interior. Yutana Barge Lines is the major private employer in Nenana, supplying villages along the Tanana and Yukon Rivers each summer with cargo and fuel. 27 residents hold commercial fishing permits. The City is developing a tourist economy, with the Alaska Railroad Museum, the Golden Railroad Spike

Historic Park and Interpretive Center, the historical Episcopal Church, Iditarod dog kennels, and a replica of the sternwheeler Nenana. A heritage center is also under development. The Nenana Ice Classic administration provides short-term employment for nearly 100 locals. The majority of Native households rely on subsistence foods, such as salmon, moose, caribou (by permit), bear, waterfowl and berries.

Facilities: Water is derived from two wells, is treated and distributed via circulating loops. A piped gravity system collects sewage, which is treated at a secondary treatment plant. Most of the City is connected to the piped water and sewer system -- 215 homes and the school are served. The remaining homes have individual wells and septic systems. The City has asked for funding to connect the sewer system to 15 homes, and water to 24 homes, to complete the service. Refuse is collected by a private firm, and hauled to the new Denali Borough regional landfill, located south of Anderson.

Transportation: Nenana has excellent air, river, road and railroad access. The George Parks Highway provides road access to Fairbanks and Anchorage. The railroad provides daily freight service. The Nenana Municipal Airport offers a 5,000' paved and lighted runway, with float plane and ski plane landing areas. The Nenana Port Authority operates the dry cargo loading and unloading facilities, dock, bulkhead, and warehouse. The Tanana River is shallow, with a maximum draft for loaded river barges of 4.5 feet; by comparison, the Yukon River has very few shallow areas.

Climate: Nenana has a cold, continental climate with an extreme temperature range. The average daily maximum during summer months is 65 to 70; the daily minimum during winter is well below zero. The highest temperature ever recorded is 98; the lowest is -69. Average precipitation is 11.4 inches, with 48.9 inches of snowfall annually. The River is ice-free from mid-May to mid-October.

B. GENERAL CLINIC INFORMATION

1) Physical Plant Information

The existing Nenana clinic is housed in a composite facility along with RHMA offices, community conferencing, and kitchen area with public restrooms. The Alaska community database gives the year of construction as 1992. Time was inadequate to as built the entire facility. However, from floor plans provided by the community, the gross square footage is approximately 5,454 gsf of which the clinic occupies 2,401 gsf. The facility is a wood frame building with insulated concrete footings, heated crawl space, and trussed and insulated attic space. As such, this is an easy facility to modify as needs arise over time.

C. PROGRAM DEFICIENCY NARRATIVE

1) Space Requirements and Deficiencies

**SPACE COMPARISON MATRIX
Current Nenana Actual SF to Denali Commission Medium Clinic**

Alaska Rural Primary Care Facility

Purpose / Activity	Current Clinic			Medium Clinic			Difference			
	Designated Itinerant			Actual Net S.F.			ARPCF SF			
	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)	
Arctic Entries				0	0	0	50	2	100	-100
Waiting/Recep/Closet				255	1	255	150	1	150	105
Trauma/Telemed/Exam				118	1	118	200	1	200	-82
Office/Exam				119+118	2	237	150	1	150	87
Admin./Records				84+178	2	262	110	1	110	152
Pharmacy/Lab				185+44	2	229	80	1	80	149
Portable X-ray				0	0	0			0	0
Specialty Clinic/Health Ed/Conf.				156+240		396	150	1	150	246
Patient Holding/Sleeping Room						0	80	1	80	-80
Storage				93+23	2	116	100	1	100	16
HC Toilet				93	1	93	60	2	120	-27
Janitor's Closet				33	1	33	30	1	30	3
						0			0	0
						0			0	0
Subtotal Net Area						1739			1270	469
Circulation & Net/Gross Conv. @45%	(Corridors and Ext. Walls)			314+218+90	3	622			572	50
Subtotal (GSF)						2361			1842	519
Mechanical Space @ 8%				50	1	50			147	-97
Total Heated Space						2411			1989	422
Morgue (unheated enclosed space)							30	1	30	-30
Ext. Ramps, Stairs, Loading	HC Accessible			As Required			As Required			As Required

- a. Overall Space Deficiencies: The size of the facility is about 420 gsf over the ARPCF space requirements.
- b. Specific Room Deficiencies: The greatest apparent deficiency is in the size of the trauma room, which ARPCF has at 200 gsf and existing is 118 gsf. Other notable differences are depicted in the spreadsheet above.
- c. Other Size Issues: See the space comparison matrix above.

2) Building Issues

- a. Arctic Entries: The existing facility, although new, has no arctic entries. The main entrance is handicap accessible. The ramp appears to meet handicap standards and leads to an entrance with a pair of 3-0 doors and, therefore, to the best of our analysis meets ADA standards. An arctic entry would be easy to space plan into the facility.
- b. Waiting / Reception: The waiting area is fairly large in comparison to standards. However, the waiting area seems to serve a broader community purpose that is the other two user sides as well.
- c. Exam / Trauma: As already discussed, the identified trauma space is substantially smaller than the standards. As the facility is new, it represents a different viewpoint of this function. However, should the need arise to create a greater sized trauma room, the facility is well designed to accommodate change.
- d. Exam Room: There is a second room of similar size to the trauma room, titled Public Health nurse/trauma, which appears adequate for exam purposes.
- e. Office / Administration / Records: There are two areas used for office-type functions. The physician's assistant and the nursing/reception areas. There is a separate medical records room. None of the people present in our conference indicated dissatisfaction with functional space assignments.
- f. Pharmacy / Lab: There is a large, 185 sf, lab/meds room, which is on an outside wall with a window.
- g. Specialty Clinic / Health Education / Conference: There is a community conferencing function as one of the other uses of this composite facility. This community facility can, and I suspect does, handle any kind of conferencing that is required. Regarding specialty labs, there is a dental lab that is nearing completion and also a hearing aid office.
- h. Patient Holding / Sleeping Room: There is no dedicated space for itinerant staff. However, Nenana is a larger community with community space available for itinerant sleeping. Those involved in programming this new clinic apparently did not see patient holding as an issue.
- i. Storage: Facility storage appears adequate.
- j. HC Toilet Facilities: The current facility has one handicap restroom. Standards call for two. It appears that ADA requirements have been satisfied with this restroom.
- k. Janitors Room: There is a shared facility janitors room.

- l. Mechanical/Boiler Room: There is a shared mechanical room for the composite facility.
- m. Ancillary Rooms: As previously discussed, there is conferencing activity to one side of the clinic and RHMA offices to the other side of the clinic. It appears that there is sufficient flexible space within the facility to allow any of those activities to shrink or expand.

3) Functional Design Issues

As previously discussed, the layout of this clinic appears to be spatially inefficient. In addition, the designers of this clinic had a different programmatic emphasis from the ARPCF guidelines. For example, they viewed one handicap restroom for clinic use as sufficient. They did not view the trauma room at the same space size. They viewed two separate lab areas and have provided for a physician's assistant and larger specialty clinics with lesser emphasis on the exam room sizes.

4) Health Program Issues

- a. Patient comfort and privacy: Patient comfort and privacy appeared good.
- b. Medical/Infectious Waste: Medical/infectious waste is managed by burning and the sharps are shipped to Fairbanks.
- c. Infection Control: Architectural finishes appear suitable for clinic use and sufficient janitorial space is provided to maintain them.
- d. Insect and Rodent Control: This is a tight facility and no control problems were indicated nor suspected.
- e. Housekeeping: The facility is well kept and there are janitor provisions within the facility.

5) Utilities

- a. Water Supply: City - adequate.
- b. Sewage Disposal: City - adequate.
- c. Electricity: City - adequate.
- d. Telephone: Overhead lines.
- e. Fuel Oil: Yes.

D. ARCHITECTURAL / STRUCTURAL CONDITION

1) Building Construction

- a. Floor Construction: Floors are constructed with underlayment and sheathing over TJIs at 16 inches on center.
- b. Exterior Wall Construction: Walls are 2 X 6 at 16 inches on center with sheathing and a log-type siding. Insulation is fiberglass, batt insulation, R-19.

- c. Roof Construction: The roof is framed with engineered trusses at 24 inches on center with plywood deck on metal roof. Insulation is approximately 12 inches or R-38 of bad insulation.
- d. Exterior Doors: The exterior doors are insulated metal.
- e. Exterior Windows: The exterior windows are vinyl with insulated glass.
- f. Exterior Decks, Stairs, and Ramps: They are wood construction with grip strut on the ramp.

2) Interior Construction

- a. Flooring: Floors are either sheet vinyl or carpet. Walls are painted. Ceilings are painted gypsum board.
- b. Walls: Walls are 2 X 4 wood construction with gypsum board finish and paint.
- c. Ceilings: The ceiling is paint over gypsum wallboard.
- d. Interior doors: The interior doors are wood with wood trim, however, lack handicap hardware.
- e. Casework: Casework is the usual particleboard material with p-lam.
- f. Furnishings: Furnishings are new, as clinic was recently.
- g. Insulation: Foundation walls are the styrofoam blocks poured with concrete for an approximate R-20. Wall insulation with 2 X 6's is approximately R-19. Attic and roof insulation is approximately R-38. Attic ventilation is provided.
- h. Tightness of Construction: This facility is very tightly constructed. Its only questionable area is the lack of arctic entries.
- i. Arctic Design: This facility was constructed locally by craftsmen who understood arctic design.

3) Structural

- a. Foundations: Foundations are the foam blocks poured with concrete with interior footings that are post and pad. It is a heated crawl space.
- b. Walls and Roof: Roof is framed with engineered wood trusses. Walls are framed with 2 X 6.
- c. Stairs, Landings, and Ramps: They are in good condition. Ramp appears to be designed to ADA standards.

E. MECHANICAL CONDITION

1) Heating System

- a. Fuel Storage and Distribution: An above ground single wall 500 gallon capacity heating oil storage tank installed on a wood support stand serves the clinic heating units. The distance between the fuel tank and the building is less than the required distance of 5 feet.

- b. Boiler: A 212,000 Btuh cast-iron sectional hydronic boiler in the boiler room provides the building heating and domestic water heating for the building.
- c. Heat Distribution System: The building is equipped with hydronic finned tube heating system. The perimeter rooms are equipped with hydronic finned tube.

2) Ventilation System

- a. System: An air-to-air heat exchanger in the crawl space provides a limited degree of ventilation for the building. In addition, the perimeter rooms are equipped with operable windows.
- b. Exhaust Air: The restroom and the janitor's closet are equipped with local exhaust fans with discharge ducted to the outside.

3) Plumbing System

- a. Water System: The building is served by piped water system delivered from the municipal water distribution system.
- b. Sewer System: The building sewer system discharges to the piped municipal sewer system.
- c. Fixtures: The fixtures observed at this building are in good condition.

F. ELECTRICAL CONDITION

1) Electrical Service

- a. The electrical service for this clinic is a 200 amp 120/240 volt AC single phase three wire system with a meter/disconnect located near the front of the building.
- b. The overhead service drop conductors are routed to the meter/disconnect through the roof in a mast. The clearance above the roof for the service drop conductors appears adequate.

2) Power Distribution

- a. The feeder to the Main Distribution Panel (MDP) consists of three # 1/0 copper conductors and is undersized for a 200 amp feeder per National Electric Code (NEC) 310-15 and Table 310-16.
- b. The Clinic MDP is a 40 circuit Thomas Betts panelboard the MDP currently has 3 spare breaker spaces.
- c. The feeder does not contain a grounding conductor and must rely on the conduit for grounding between the MDP and service equipment.
- d. Storage materials are stored in front of the MDP, this is a violation of NEC 110-26. Re-location of storage materials is recommended.

3) Grounding System

- a. The electrical service does not appear to be bonded to the water line. Electrical services are required to be bonded to a grounding electrode system with a maximum resistance of 25 ohms.

- b. Interior metal piping of other mechanical systems is required to be bonded to the electrical service per NEC 250-104.

4) Exterior Elements

- a. Five exterior receptacles for clinic use are installed.
- b. It is recommended to install individual branch circuits and GFCI protected receptacles for automotive block heaters, commonly known as head bolt heaters.
- c. Lighting for clinic use has not been installed. It is recommended to provide exterior egress lighting supplied from the clinic electrical panels.

5) Electrical devices and lighting

- a. Duplex receptacles are the grounding type.
- b. The total number of receptacles does not appear sufficient for the equipment and loads in place and for future expansion in the clinic.
- c. The lighting fixtures throughout the clinic are predominantly 4' surface mounted fluorescent fixtures with wrap around lenses and 2' fluorescent fixtures in the corridors. The fixtures are relatively new and appear to be in good condition.
- d. The wiring in the clinic is primarily in metallic raceways, although, there do not appear to be insulated grounding conductors in any of the raceways. Health Care Facilities are required to have all receptacles and fixed electric equipment, in patient care areas, supplied by circuits in grounded metal raceways with an insulated grounding conductor.

6) Emergency System

- a. Self-powered exit lights are installed at the exits. Normally this type of fixture has a specific life, the dating should be verified as well as the actual light output. Where exit lighting is required by building code, the exit lighting shall be powered and provide minimum foot candle levels, per IBC Section 1003. Branch circuits for exit lighting shall comply with NEC 700-12.
- b. Emergency egress lighting has not been installed. Emergency lighting is required per NFPA 101 and applicable building codes. Wiring and circuiting must comply with NEC requirements.

7) Fire Alarm System

- a. Residential type smoke detectors are installed in the clinic. Fire alarm systems, where required by building codes must comply with the provisions of the NEC article 725 and the IBC Section 907.
- b. A building fire alarm system is in place, although the system does not appear to be operational in the clinic and may not be accessible to clinic staff. An individual fire alarm system for the clinic or installation of a remote annunciator panel, from the building fire alarm system, in the clinic is recommended.

8) Telecommunication

- a. The Data Telecommunications system currently provides service to the telephone system and the "Telemed" remote diagnostic system.
- b. The number of data and telephone outlets is not sufficient for the clinic's current and future needs.

G. CIVIL / UTILITY CONDITION

1) Location of Building

- a. Patient Access: The facility has excellent street parking and ramp and patient access.
- b. Service Access: Road access is provided to the front and side entries with adequate stair and ramp access.
- c. Other Considerations: None.

2) Site Issues

- a. Drainage: Drainage appeared to work fine.
- b. Snow: There does not appear to be a snow-drifting problem at the front entrance.

3) Proximity of Adjacent Buildings

- a. Undetermined.

4) Utilities

- a. Water Supply: City system – adequate.
- b. Sewage Disposal: City system – adequate.
- c. Electricity: City system – adequate.
- d. Telephone: Overhead lines.

H. EXISTING FACILITY FLOOR PLAN (SITE PLAN IF AVAILABLE):

We have attached drawings, as we have been able to identify, find, or create as part of this report. We have endeavored to provide all drawings for all the sites; however, in some cases exact existing site plans were not available. We have provided as indicated below:

- A1 Site Plan
- A2 Existing Facility Floor Plan
- A3 Typical Existing Wall Section
- A4 Medium Clinic Floor Plan

4. DEFICIENCY EVALUATION

A. DEFICIENCY CODES:

The deficiencies are categorized according to the following deficiency codes to allow the work to be prioritized for funding. The codes are as follows:

- 01 Patient Care:** Based on assessment of the facilities ability to support the stated services that are required to be provided at the site. Items required for the patients social environment such as storage, privacy, sensitivity to age or developmental levels, clinical needs, public telephones and furnishings for patient privacy and comfort.
- 02 Fire and Life Safety:** These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated life safety aspects of building codes including the Uniform Building Code, International Building Code, The Uniform Fire Code, NFPA 101, The Uniform Mechanical and Plumbing Codes and The National Electrical Code. Deficiencies could include inadequacies in fire barriers, smoke barriers, capacity and means of egress, door ratings, safe harbor, and fire protection equipment not covered in other deficiency codes.
- 03 General Safety:** These deficiencies identify miscellaneous safety issues. These are items that are not necessarily code items but are conditions that are considered un-safe by common design and building practices. Corrective actions required from lack of established health care industry safety practices, and local governing body code safety requirements. I.e. Occupational Safety Health Administration (OSHA) codes & standards.
- 04 Environmental Quality:** Deficiencies based on Federal, State and Local environmental laws and regulations and industry acceptable practices. For example this addresses DEC regulations, hazardous materials and general sanitation.
- 05 Program Deficiencies:** These are deficiencies that show up as variations from space guidelines evaluated through industry practices and observation at the facility site and documented in the facility floor plans. These are items that are required for the delivery of medical services model currently accepted for rural Alaska. This may include space modification requirements, workflow pattern improvements, functional needs, modification or re-alignment of existing space or other items to meet the delivery of quality medical services. (Account for new space additions in DC 06 below)
- 06 Unmet Supportable Space Needs:** These are items that are required to meet the program delivery of the clinic and may not be shown or delineated in the Alaska Primary Care Facility Space Guideline. Program modifications requiring additional supportable space directly related to an expanded program, personnel or equipment shall be identified in this section; for example additional dental space,

specialty clinic, storage, or program support space that requires additional space beyond the established program.

07 Disability Access Deficiencies: The items with this category listing are not in compliance with the Americans with Disabilities Act. This could include non-compliance with accessibility in parking, entrances, toilets, drinking fountains, elevators, telephones, fire alarm, egress and exit access ways, etc.

08 Energy Management: These deficiencies address the efficiency of lighting, heating systems/fuel types and the thermal enclosures of buildings, processes, and are required for energy conservation and good energy management.

09 Plant Management: This category is for items that are required for easy and cost efficient operational and facilities management and maintenance tasks of the physical plant.

10 Architectural M&R: Items affecting the architectural integrity of the facility, materials used, insulation, vapor retarder, attic and crawlspace ventilation, general condition of interiors, and prevention of deterioration of structure and systems.

11 Structural Deficiencies: These are deficiencies with the fabric of the building. It may include the foundations, the roof or wall structure, the materials used, the insulation and vapor retarders, the attic or crawl space ventilation and the general condition of interior finishes. Foundation systems are included in this category.

12 Mechanical Deficiencies: These are deficiencies in the plumbing, heating, ventilating, air conditioning, or medical air systems, interior mechanical utilities, requiring maintenance due to normal wear and tear that would result in system failure.

13 Electrical Deficiencies: These are deficiencies with normal or emergency power, electrical generating and distribution systems, interior electrical and communications utilities, fire alarm systems, power systems and communications systems within a building that should be repaired or replaced on a recurring basis due to normal wear and tear that would otherwise result in system failure.

14 Utilities M&R: This category is used for site utilities for incoming services to facilities that are required for the building to be fully operational. Deficiencies may include sewer and water lines, water wells, water tanks, natural gas and propane storage, electric power and telecommunications distribution, etc.

15 Grounds M&R: Real property grounds components that should be replaced on a recurring basis due to normal wear and tear. Deficiencies with respect to trees, sod, soil erosion, lawn sprinklers, parking, bridges, pedestrian crossings, fences, sidewalks & roadways, and site illumination etc. are considerations.

16 Painting M&R: Any painting project that is large enough to require outside contractors or coordination with other programs.

17 Roof M&R: Deficiencies in roofing, and related systems including openings and drainage.

18 Seismic Mitigation: Deficiencies in seismic structural items or other related issues to seismic design, including material improperly anchored to withstand current seismic requirements effect. The elements under consideration should include the cost incidental to the structural work like architectural and finishes demolition and repairs.

B. PHOTOGRAPHS

We have provided photographs attached which are noted to describe the various deficiencies described in the narratives and itemized in the summary below. The photos do not cover all deficiencies and are intended to provide a visual reference to persons viewing the report who are not familiar with the facility.

We have included additional photos as Appendix B for general reference. These are intended to add additional information to the specific deficiencies listed and to provide general background information.

C. COST ESTIMATE GENERAL PROVISIONS

1) New Clinic Construction

- a. Base Cost: The Base Cost provided in Section VI of this report is the direct cost of construction, inclusive of general requirements (described below) and contingency for design unknowns (an estimating contingency). The base cost is exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The Project Factors and Area Cost Factor are multipliers of the base costs.
 - General Requirements are based on Anchorage costs without area adjustment. It is included in the Base Cost for New Clinics. These costs are indirect construction cost not specifically identifiable to individual line items. It consists of supervision, materials control, submittals and coordination, etc. The general requirements factor has not been adjusted for Indian Preference.
 - The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned.
- b. Project Cost Factors
 - Equipment Costs for new medical equipment has been added at 17% of the cost of new floor space.
 - Design Services is included at 10% to cover professional services including engineering and design.

- Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
 - Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.
- d. Estimated Total Project Cost of New Building: This is the total estimated cost of the project, including design services. The construction contract will be work subject to Davis Bacon wages, and assumes construction before year-end 2001. No inflation factor has been applied to this data.

2) Remodel, Renovations, and Additions

- a. Base Cost: The Base Cost provided in the specific deficiency sheets is the direct cost of construction, exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Most of the deficiency items do not constitute projects of sufficient size to obtain efficiency of scale. The estimate assumes that the projects are completed either individually, or combined with other similar projects of like scope. The numbers include moderate allowances for difficulties encountered in working in occupied spaces and are based on remodeling rather than on new construction costs. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The General Requirements, Design Contingency and Area Cost Factors are multipliers of the base costs.
- The cost of Additions to clinics is estimated at a unit cost higher than new clinics due to the complexities of tying into the existing structures.
 - Medical equipment is calculated at 17% of Base Cost for additions of new space only and is included as a line item in the estimate of base costs.
- b. General Requirements Factor: General Requirements Factor is based on Anchorage costs without area adjustment. The factor is 1.20. It is multiplied by the Base Cost to get the project cost, exclusive of planning, architecture, engineering and administrative costs. This factor assumes projects include multiple deficiencies, which are then consolidated into single projects for economies of scale. The general requirements factor has not been adjusted for Indian Preference.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.

-
- d. Contingency for Design Unknowns (Estimating Contingency): The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned. The factor used is 1.15.
- e. Estimated Total Cost: This is the total estimated bid cost for work completed under Davis Bacon wage contracts, assuming construction before year-end 2001. This is the number that is entered in the front of the deficiency form. No inflation factor has been applied to this data.
- f. Project Cost Factors: Similar to new clinics, the following project factors have been included in Section VI of this report.
- Design Services is included at 10% to cover professional services including engineering and design.
 - Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
 - Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- g. Estimated Total Project Cost of Remodel/Addition: This is the total estimated cost of the project including design services, the construction contract cost for work completed under Davis Bacon wages and assuming construction before year-end 2001. No inflation factor has been applied to this data.

5. SUMMARY OF EXISTING CLINIC DEFICIENCIES

The attached sheets document the deficiencies; provide recommendations on how to make repairs or accommodate the needs and provide a cost estimate to accomplish the proposed modifications. The summary addresses individual deficiencies. If all deficiencies were to be addressed in a single construction project there would be cost efficiencies that are not reflected in this tabulation.

These sheets are reports from the Access Data Base of individual Deficiencies that are compiled on individual forms and attached for reference.

Refer to Section VI. New Clinic Analysis for a comparison of remodel/addition to new construction.

6. NEW CLINIC ANALYSIS

The analysis of whether a new clinic is required is based on the Denali Commission standard of evaluation that "New Construction is viable if the cost of Repair/Renovation and Addition exceeds 75% of the cost of New Construction".

We have therefore determined the cost of a New Clinic Construction to meet the Alaska Rural Primary Care Facility (ARPCF) Space Guidelines for a village of 402 people (2000 Census). We have also determined the cost of Repair/Renovation & Addition to the existing Clinic to meet the same ARPCF Space Guidelines.

A. The cost of a New Denali Commission 1,989 SF Medium Clinic in Nenana is projected to be:

▪ Base Anchorage Construction Cost per s.f.		\$183
▪ Project Cost Factor:	@ 45%	\$ 82
Medical Equipment	17%	
Construction Contingency	10%	
Design Fees	10%	
Construction Administration	8%	
▪ <u>Multiplier for Village</u>	<u>@ 1.194</u>	<u>\$ 51</u>
Adjusted Cost per SF		\$316

Projected Cost of a New Clinic: 1,989 s.f. x \$316 = \$629,339
(not inclusive of site development costs)

B. The cost of the Repair/Renovation and Additions for the existing Clinic are projected to be:

▪ Code & Condition Repairs/Renovations		
Cost from Deficiency Summary		\$172,214
▪ Remodel/Upgrade work (See Def. Code 01)		
100% of clinic 2,401 SF = 2,401 SF @ \$96/SF		\$231,669
▪ Additional Space Required by ARPCF (See Def. Code 06)		
○ Base Anchorage Cost		\$226
Medical Equipment		\$ 32
Additional Costs –		\$ 98
General Requirements	20%	
Estimation Contingency	15%	
○ <u>Multiplier for Village</u>	<u>@1.194</u>	<u>\$69</u>
<u>Adjusted Cost per SF</u>		<u>\$425</u>
Total Addition Cost of 0 SF @ \$425		\$0

Projected Cost Factor	@28%	\$113,087
Construction Contingency	10%	
Construction Administration	8%	
Design Fees	10%	

Total Cost of remodel/addition \$516,970

C. Comparison of Existing Clinic Renovation /Addition versus New Clinic:

Ratio of Renovation/Addition versus New Clinic is:

\$516,970 / \$629,339 = 0.82 x cost of New Clinic

Based on Denali Commission standard of evaluation; the remodel/addition costs are more than 75% of the cost of new construction. A new clinic is recommended for this community.

D. Overall Project Cost Analysis:

The overall project cost analysis below incorporates land, multi-use, utility costs, and road access costs, and project management fees if any are associated with the project.

Item	Quantity	Units	Unit Cost	Area Adjustment Factor	Total Cost	Allowable under "Small" Clinic Process (yes/no)
Primary Care Clinic (Allowable)	1,989	SF	\$265.00	1.194	\$629,339	yes
Clinic (Non-allowable portion)	0	SF	\$265.64	1.194	\$0	no
Land	15,000	SF	\$2.00	1	\$30,000	yes
Multi-Use Facility Design Cost	0	LS	\$0.00	1	\$0	yes
Multi-Use Facility Construction Cost	0	LS	\$0.00	1	\$0	no
Utility Extension/Improvements	1	LS	\$15,000	1	\$15,000	yes
Road access & parking lot improvements	1	LS	\$5,000	1	\$5,000	yes
Subtotal Project Cost					\$679,339	
Project Management Fees					<u>Unknown</u>	
Total Project Cost					Unknown	

7. CONCLUSIONS AND RECOMMENDATIONS

Nenana has a new clinic in a well-constructed spatially flexible commercial grade structure. The vision of the users/designers of the existing facility is quite different in terms of spatial configuration sizes and uses from those of the ARPCF standards. That aside the existing spatial layout seems somewhat inefficient. These considerations suggest that funding at some level could benefit the clinic.

Resolutions of code and condition and renovation considerations suggest a ratio of 0.82 to new construction. However, the recommendation of the consultant team would be for modifications to the current structure not new construction.

Appendix A: Specific Deficiencies Listings

The attached sheets represent the individual deficiencies identified for this project and the corrective action required to meet current codes and standards of construction. The deficiencies are further summarized in Section V. Summary of Existing Clinic Deficiencies.

Appendix B: Reference Photographs