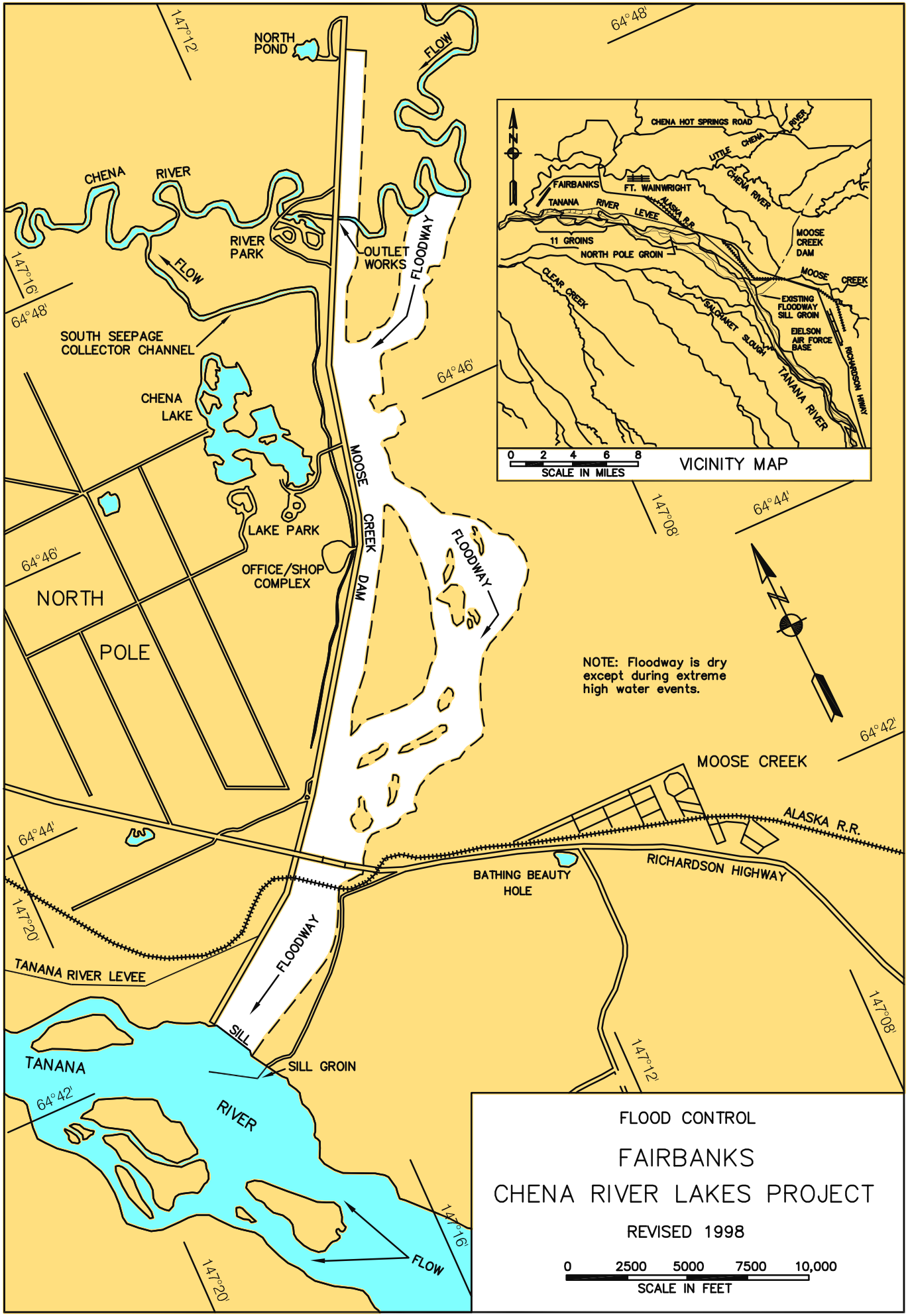
Chena River Lakes
And Tanana River Levee

CORPS OF ENGINEERS

U.S. ARMY



FLOOD CONTROL

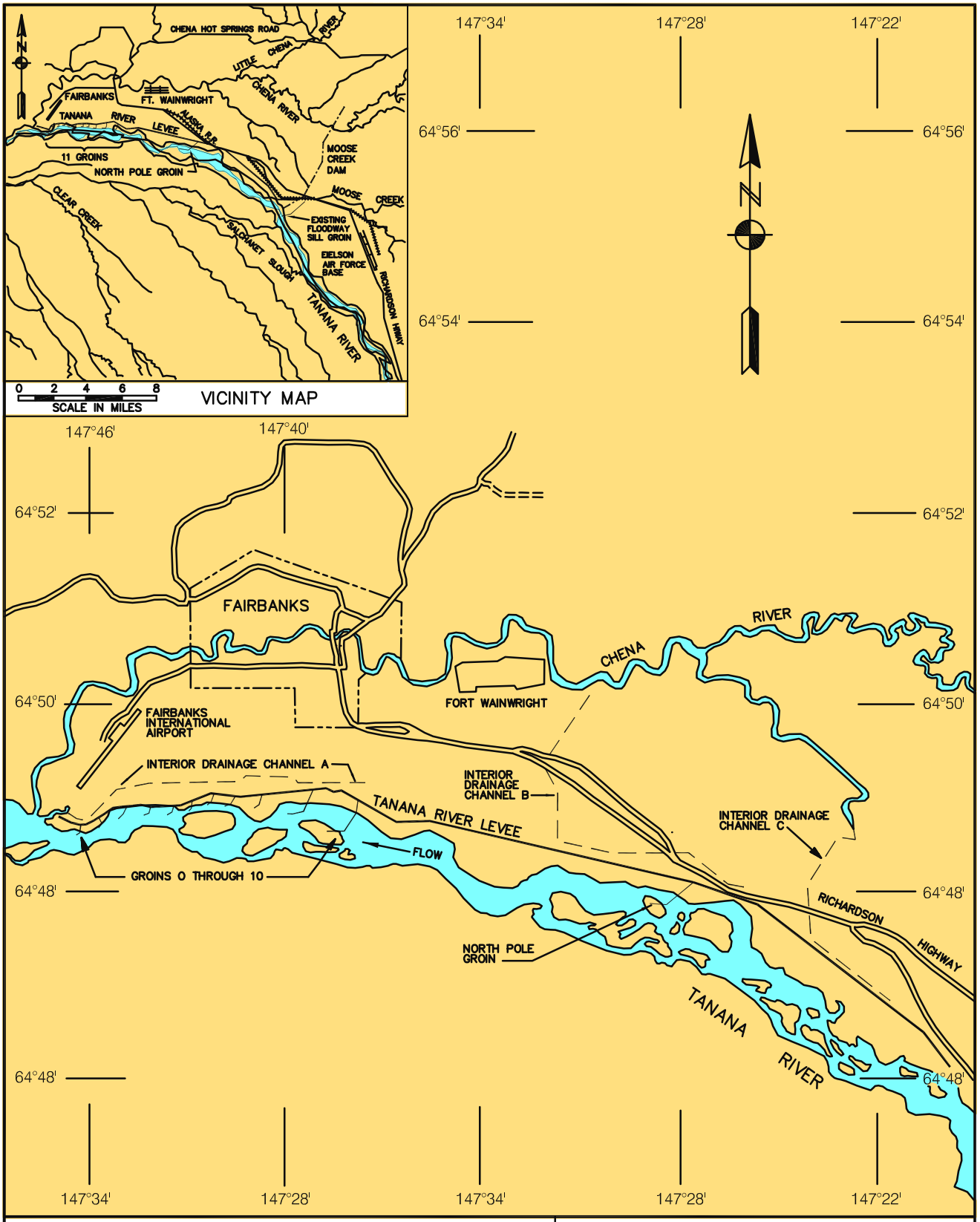
FAIRBANKS
CHENA RIVER LAKES PROJECT

REVISED 1998

0 2500 5000 7500 10,000

SCALE IN FEET

CORPS OF ENGINEERS U.S. ARMY



NOTE

THIS MAP FOUND ON USGS QUADRANGLE MAPS, FAIRBANKS C–1, D–1, AND D–2.

FLOOD CONTROL

FAIRBANKS TANANA RIVER LEVEE

REVISED 1998

1 0 1 2 3 4

SCALE IN MILES

Condition of Improvements
30 December 2014
Chena River Lakes and Tanana River Levee, Alaska
(CWIS No. 072738, 072854)

Authorization Flood Control Act of 13 August 1968, Public Law 90-483 (House Doc. 148, 90th Congress, 2nd Session) as adopted, provides for construction of a dam and floodway for the Chena River (17 miles east of Fairbanks), for a dam and reservoir on the Little Chena River, and for a 27 mile long levee system with interior drainage works on the north side of the Tanana River.

Table 1

Existing Project	**Length** mi.
Moose Creek Dam (Chena River)	8.1
Tanana River Levee	22

Project Usage This project provides protection to Fairbanks and adjacent areas, including Fort Wainwright, from recurring flood damage from the Chena and Tanana Rivers. In addition, the project is a popular recreational area averaging 133,000 visitor days of use per year since 1993.

Progress of Work

1970	Pre-construction planning is initiated and aerial photography is obtained.
1973	Phase I of the Tanana levee construction begins in June. A contract is awarded in November for the foundation excavation of the Moose Creek Dam.
1974	Phase I of the Tanana levee construction is completed. Foundation excavation continues for the Moose Creek Dam.
1975	Moose Creek Dam foundation excavation is essentially completed. Final design work nears completion.
1976	Phase II of the Tanana levee is completed. The Moose Creek Dam outlet works and embankment are under construction.
1977	Richardson Highway and Alaska Railroad bridges are constructed over the floodway. A major portion of the dam embankment is completed.

Progress of Work

1978	Moose Creek Dam outlet works and embankment are completed. Floodway clearing, excavation, and sheet pile sill are also complete. Contract is ahead of schedule. The dam and reservoir on the Little Chena are placed under a "deferred" status.
1979	Moose Creek Dam and Floodway are operational; final grades constructed, groin to protect sheet pile sill in place, and shaping of the borrow pits to form Chena Lake is completed. An additional 222 foot segment of Tanana levee is constructed and work on Interior Drainage Channels B & C is underway.
1980	Interior Drainage Channels B & C are completed; several slough blocks are repaired, and construction of a fish ladder at the Moose Creek dam outlet works is begun.
1981	Construction of the Tanana levee is complete with the exception of additional groin protection along the Tanana River.
1982	Major activities include repair of the Tanana levee due to settling, repairs to Interior apply an impervious silt blanket and armor rock protection, install relief wells adjacent to the dam, and add a second emergency gate at the outlet control works.
1983	Interior Drainage Channel A is completed; work on the recreation area at Chena Lake is in progress and other miscellaneous repairs and upgrades are achieved.
1984	A contract is awarded to construct five protective groins along the Tanana levee. Further improvements are made at the outlet works of Moose Creek Dam, and the recreation area at Chena Lake is completed.
1985	Construction of groins 4 through 8 is accomplished along the Tanana levee. A high water event in May is successfully controlled by the project.
1986	Contracts are awarded for an office & warehouse and 30 relief wells at the Moose Creek Dam site, and a contract for groins 9 and 10 is awarded for the Tanana levee. High water events June, July, and August are controlled by the project.
1987	The contracts awarded last fiscal year are completed including groins 9 and 10 on the Tanana Levee. A new construction contract for visitors' facilities is awarded in August.
1988	The south seepage collector channel is completed as well as the visitors' facilities. A contract for gate modifications at the outlet works of the Moose Creek Dam is awarded in September.
1992	Gate modifications are completed and a curb wall is installed at the Moose Creek Dam outlet works. Major flooding in Fairbanks is averted by controlling the flow through the outlet works during May and June.
1995	Phase I of the bike trail project is completed along the seepage collector channel road.

Progress of Work

1996	A long term fish study is continuing on the Chena River. The Tanana Levee, groins, and interior drainage channels were inspected and found in satisfactory condition. The visitor kiosk near the outlet works is completed.
1997	Phase II of the bike path is completed; modifications to the trash racks at the outlet works are made, and the access ramp to the outlet works is paved. Fifteen (15) relief wells are installed on the downstream side of the dam. The old Nike landfill site is officially capped and closed.
1998	Moose Creek Dam Salmon Watch activities attract thousands of visitors to the dam to view the salmon migration and learn about the Corps mission in flood control, recreation, and natural resource management. No flood or high water events occur on the Chena River.
1999	At the Chena Project 35 relief wells are repaired (18 under contract). Ground water monitoring is continued. The Tanana River levee is inspected and found in good condition. The lower Chena River is dredged during the winter; 79,251 cubic yards are removed through several shoals to enable safe navigation of the waterway.
2000	Moose Creek Dam is operated for flood control in August, 2000, for first time since 1995. This operation is the thirteenth time the Chena River has been regulated since the initial regulation event in 1981. The lower Chena River and the Boat Launch at the Federal project are dredged over the winter; a total of 26,406 yards are removed from both areas.
2001	No flood events are reported.
2002	Moose Creek Dam operated in May for a unique Spring breakup/ice damming/backwater flood event. In July, heavy precipitation raised the Chena River to near operating threshold and caused debris buildup behind the dam, necessitating operations contractor callout for bailing work. The dam is operated in August following over two inches of precipitation in the Chena watershed over a short period. Moose Creek Dam Salmon Watch officially began on June 24; approximately 10,000 Chinook salmon passed through the dam. Corps and Fairbanks North Star Borough personnel conducted the annual joint inspection of Tanana River Levee system. A portion of the Project boundary is re-surveyed, brushed and re-marked, resulting in discovery of numerous encroachments.

Progress of Work

2003	Moose Creek Dam was operated for flood control for the 17th and 18th times in July and September, 2003. The twelfth periodic inspection was performed in August with the finding that the Project was in excellent condition. The annual joint Corps-Fairbanks North Star Borough inspection of the Tanana levee was performed with positive results. The Project benefited from a 160-acre prescribed burn in a unit of black spruce by the Bureau of Land Management/Alaska Fire Service for habitat enhancement. Moose Creek Dam Salmon Watch attracted thousands of visitors to the Project to watch the annual salmon run in the Chena River. A new volunteer host site was developed near the Project's entrance and will be occupied beginning in May 2004. New multi-year flood debris bailing and crane operations contracts were developed and awarded to local contractors.
2004	No flood or high water events necessitating the operation of Moose Creek Dam occurred in 2004. A peak flow of 6700 cubic feet per second, well below the dam's operating threshold, was recorded during the Spring breakup on May 8, 2004. A record nine million acres of land was burned in Alaska by wild land fires, including a yet undetermined amount of land within the Chena watershed. At least two of the Chena Project's remote weather recording sites sustained major fire damage. The Project's first remote dam camera went online during the reporting year and became a popular educational tool for the community and others by providing real time images of the river. The Project conducted its second annual Mayor's Day visit to acquaint local mayors and government officials with the Project. A "load moment indicator" was procured for the Project's 90-ton crane to accurately measure loads being picked by the crane during debris bailing operations.
2005	There were no flood or high water events necessitating the operation of Moose Creek Dam. The Chena Project was readied early for expected service in the spring, but was not needed as the melt never produced the operational threshold flow. The Chena River's highest flow was recorded on 29 April at 5,300 cubic feet per second, well below the usual operating threshold of the dam. Above average precipitation over the spring and summer was well distributed and did not produce enough runoff to operate the dam at any time during the rest of the flood season. In other activities the Project's operations staff removed and replaced the 8,000 pound viewing window in the fish ladder. This window had sustained damage from possible earthquake-related movement in the fish ladder structure. In July, a successful internal ERGO inspection was conducted by District and Project staff. A highlight of the year was a site visit by the Chief of Engineers, Major General Strock in August of 2005.

Progress of Work

2006	The Chena River Flood Control Project celebrated its 25th anniversary of operation in 2006. There have been 18 regulated flood events to date including the initial test fill performed in 1981. Peak flow on the Chena River occurred on 23 May showing approximately 5,300 cubic feet per second passing through the dam, well below the usual operating threshold. There were no subsequent high water or debris events for the year. The 13th periodic inspection of the dam and all its engineered features was completed in July. The Project was found to be in good operating condition on its silver anniversary. Inspection of the Tanana Levee and supporting structures finds the project to be in very good condition overall. Minor deficiencies and potential problems were noted. The Fairbanks North Star Borough was commended for its good work maintaining the project.
2007	Inspection of the Tanana River Levee was performed in August. No major deficiencies were found that would prevent the Tanana Levee, interior drainage channels, and groins from performing their intended function. At the Chena Dam no high water or flood events occurred in 2007. A damaged gate support ear and a latch pin assembly were repaired at the outlet works. Work was begun to prepare the outlet works structure for the installation of remote cameras for use in operations, security and public use.
2008	One of the wettest summers on record in the Fairbanks area necessitated operation of Moose Creek Dam on August 1 and 2, 2008 to regulate the flow of the Chena River. The overall inspection rating for the Tanana Levee system is acceptable.
2009	The 14th periodic inspection of the Chena Project was conducted in July by the District's security manager and Division elements of the dam and the office facility. A modernization design was completed for bringing the Project Office in compliance with American with Disabilities Act and for increasing energy efficiency. The old underground 25,000 gallon heating fuel tank was removed and replaced with a new tank above ground. The Corps and the Fairbanks North Star Borough Department of Parks partnered on an emergency dredging job at the Borough's boat launch into the Chena River. Moose Creek Dam received a Dam Safety Action Classification (DSAC) level "1" rating on September 3, following a screening portfolio risk analysis (SPRA) conducted in June. The failure modes identified were due to seepage/piping and seismic activity. . The overall inspection rating for the Tanana Levee system is minimally acceptable due to trash, debris, unauthorized farming activity, structures, excavations, or other obstructions, settlement due to permafrost, encroachments, and unauthorized channel blockage.

Progress of Work

2010	The busiest year in the Chena River Flood Control Project's operating history. In response to the Dam Safety Action Classification (DSAC) rating of "1", the Corps held public meetings in January to promote public awareness of the deficiencies found and to explain future corrective actions plans. Construction contracts were subsequently awarded in early spring to reduce the floodway control sill height approximately four feet to elevation 502 ft MSL and to remove a fifty foot wide band of timber paralleling the dam's eight-mile stability berm. In March work began on a $5M Project Office remodel and building addition with American Recovery and Reinvestment Act funding. The work involved remodeling the existing 22-year old building to improve energy efficiency, make it compliant with the Americans with Disabilities Act; and add reception, conference and training space. An emergency response bay was also added to promote more effective response to public safety emergencies, in both winter and summer. In April, a first ever critical hydraulic structural steel inspection of the dam's service, emergency, bulkhead and fish-way gates was performed by a multi district team of Corps specialists. All gates were removed from their slots using the Project crane to undergo comprehensive internal and external visual inspections. The inspection found all gates to be in excellent operating condition. The Moose Creek Acres Berm was inspected July. The berm has two sections divided by high ground and was found in good condition along its westerly most section. Overgrown vegetation had completely engulfed the eastern most section. Both sections were scheduled for vegetation removal and additional gravel was imported to level the crest. The Tanana River Levee was inspected in July. The easterly section owned by the Corps was found overgrown with vegetation. The remaining section owned by the Fairbanks North Star Borough (FNSB) had some sections of overgrown vegetation and encroachments. The levee was generally found to be in good condition.

2011 Moose Creek Dam was not operated this year although high water events resulted in two separate debris bailing operations, one each in June and July. Improvements to the outlet works included a new, removable deck railing system to facilitate safety and operational activities and the installation of new gate height indicators in the operations gallery. Marsh Creek, LLC completed contract work began in 2010 to remove all woody vegetation along a fifty foot strip of land along the dam's entire stability berm and reestablish a grass monitoring corridor in accordance with national dam safety guidelines. The contract was modified to perform additional clearing along the first mile of the Tanana River levee system, for which the Corps is responsible; and to install two new relief wells north of the Chena River. Utilizing Dam Safety Action Classification funding, the Project acquired a new multipurpose loader with numerous attachments and a heavy duty equipment hauling trailer for routine and emergency operations activities. A set of Tiger dams and additional geotextile material was procured for dam emergency operations. Bristol Industries, LLC completed all major work on the Chena Project Office Modernization in July. On August 10, the official ribbon-cutting of the remodeled Project Office was held with Corps dignitaries from ASA (CW), USACE, POD and POA along with Senator Begich and local community and governmental officials. USACE Comprehensive Evaluation of Project Datums (CEPD) Compliance report completed and recorded in January.

2012 Moose Creek Dam was not operated this year although high water events resulted in one debris bailing operation in late May. Improvements to the project included the excavation and install of 11 concrete communication vaults and 16,000 feet of innerduct for a new fiber optic line to serve the Project Office and Control Works. A 45KW portable generator was purchased to provide backup power to the Control Works and a contract awarded to seal joints and cracks in the Control Works including the fish ladder. New high intensity strobe lights were installed on the deck to alert approaching river boating traffic. A report recommending alternatives for emergency gate operations and a replacement crane for the Control Works was also completed. The Moose Creek Dam Emergency Action Plan was revised/updated in conjunction with a table top exercise held in May 2012 with participants from all Alaska District personnel who have a responsibility during a flood event. The vegetation on Moose Creek Acres Berm was removed and low areas backfilled and compacted. Brush and trees were also removed from the Low Point Drain and the channel armor rock realigned. Project staff continued work on removing the tree islands in the middle of the floodway for backfilling with silt. Project staff assisted Environmental/Mechanical Engineers in ongoing process to get the project office domestic water system certified and designated as a State of Alaska Public Water Supply. The Chena Project's Park Manager, John Schaake, retired December 31st.

Progress of Work

2013	Moose Creek Dam was not operated this year although high water events resulted in one debris bailing operation in late May 2013.Improvements to the project included the installation of the fiber optic cable in the communication duct between the Project Office and Control Works. A contract to seal joints and cracks in the Control Works including the fish ladder was completed along with construction of a cover over the walkway leading down into the dam control works. The new TS60 Baldor generator hook-up was completed and the old Detroit 50 KW and fuel tank was removed from the gallery. Two patrol ATVs for the park rangers were purchased to replace 1994 models. The Moose Creek Dam Emergency Action Plan was revised/updated in conjunction with a table top exercise held in June 2013 with participants from all Alaska District personnel who have a responsibility during a flood event. Vegetation clearing on the East Cutoff Dike was started, and clearing was ongoing on the Tanana Levee, sections of the project boundary, and along project roads. Project staff continued work on removing the tree islands in the middle of the floodway for backfilling with silt. Project staff assisted Environmental/Mechanical Engineers in ongoing process to get the project office domestic water system certified and designated as a State of Alaska Public Water Supply.
2014	The Moose Creek Dam was operated on 21 through 23 June, and 2 through 7 July 2014, to regulate the flow of the Chena River. Bailing operations followed each flood event and over 260 firewood cutting permits were issued to the public to salvage the bailed trees. The Dam Safety Action Classification (DSAC) rating for Moose Creek Dam was lowered from a DSAC-1 to a DSAC-3 with the caveat that a Dam Modification Study would follow. The Moose Creek Dam Emergency Action Plan was updated in conjunction with table top exercises in April with participants from Alaska District with the Fairbanks North Star Borough. Vegetation clearing on the East Cutoff Dike was completed along with clearing along the seepage collector channels, north pond, south of the floodway sill, sections of the project boundary, and along project roads. A large scour hole in the north floodway was repaired after the 2nd flood event along with several smaller holes. Slash was removed from the tree islands and repairs made to the Chena Project Office building roof to reduce sliding snow damage. The Chena Project continued to engage in promoting water safety, presenting water safety programs at 12 local schools, incorporating demonstrations, exercises and learning games to over 800 third- and fourth-grade students in the Fairbanks School District and home school groups in the community. The staff also developed and staffed a water safety theme booth at the Tanana Valley State Fair and other summer lakeside public events. Snow Rondy 2014 promoted safe snowmobiling in Alaska's Interior and on the 20,000 acres of Corps public land. The over 500 participants enjoyed a winter solstice event which includes numerous activities such as kids' snow-cross, bon fire, kids' snowmobile safety rodeo, food, avalanche training, and displays. Corps

Park Rangers and staff hosted 3 Moose Hunters in wheel chairs this September during the 12th Annual PVA Wheelchair Moose Hunt. Flood events this season hampered moose activity so no bulls were taken. Hunters enjoyed the volunteer built log bunkhouse during down time and the 3 Kiwanis Blinds that were staged in the field where they observed several cow and calf moose pairs but no legal bulls.

The Project staff also hosted a 50th Anniversary Gathering of soldiers who were stationed here on location in the 60's when the Chena Project was an active Nike Missile site.

Table 2A Cost to Date - Moose Creek Dam (Chena River)

Project	Description	Cost $
072738	CG Appropriation	217,248,991
	CG Costs	216,918,957
	CG Contributed Appropriation	2,382,929
	CG Contributed Costs	2,382,929
	O&M ARRA Appropriation	6,982,288
	O&M ARRA Costs	6,982,288
	O&M Appropriation	62,674,653
	O&M Contributed Costs	61,788,356

Table 2B Cost to Date - Tanana River Levee

Project	Description	Cost $
072854	CG Appropriation	54,875,478*
	CG Costs	54,875,478*

**These costs are from archived accounting records and are not located in the annual PM-C Historic Cost spreadsheet updates*

Chena River Lakes Flood Control Project, Alaska

General locations of Moose Creek Dam features.

The East Cutoff Dike, June 2014.

Moose Creek Acres Berm, August 2014.

Downstream portion of the Low Point Drain during the 2014 flood event.

The weir during the 2014 flood event, June 2014.

Bailing operation during the 2014 flood event, June 2014.

Sand boils in the toe of the stability berm during the 2014 flood event, July 2014.

Control Works during inspection, June 2009.

The Control Sill, June 2014.

Tanana River Levee, Alaska

Federal portion of the Tanana River Levee, August 2014.

Crest of the Tanana River Levee, August 2013.

Tanana River Levee, Alaska

Crest of the Tanana River Levee, August 2013.

Culverts within the Tanana River Levee, August 2013.