



# SHERMAN ENGINEERING

CIVIL • SANITARY • GEOTECHNICAL • ENVIRONMENTAL  
DESIGN • TESTING • CONSTRUCTION MANAGEMENT

November 3, 2010

City of Nenana  
PO Box 70  
Nenana, Alaska 99760

Attention: The Honorable Jason P. Mayrand, Mayor

Reference: City of Nenana Port Improvements Project  
Progress Report

Dear Mr. Mayrand

*Sherman Engineering* is pleased to submit our progress report for the above-referenced project. We are currently working on the Phase I Pre-Design task for the improvements to the City of Nenana bulkhead, dock, and upstream river restoration and erosion control on the Nenana River. Phase I includes all preliminary field work (historical research of the Nenana River meanders, topographic and bathymetric surveys, and geotechnical investigation) necessary to support the design effort and a preliminary design, construction cost estimate and feasibility study of the new port improvement and erosion protection structures. Phase II includes permitting, design, bidding and construction administration for the project and has not been authorized at this time.

The specific tasks and work completed on each task is as follows:

- Historical Documentation – Historical air photos have been collected and scanned into a digital format. Photographs have been obtained from 1919 up to 2009 and will be assembled into a series of exhibits that clearly depict the movements of the Nenana River over that time period.
- Topographic Mapping – Field surveying has been completed and air photos have been obtained for the project area. Hard copies of the air photos have been submitted. The air photos have been converted to orthometric photos and will be the basis for the digital terrain model (DTM) which is now being produced. Field survey data has been verified and will be incorporated into the DTM. The new DTM and composite orthometric photo background are scheduled for delivery by November 19.
- Bathymetric Survey – The bathymetric field survey has been completed and the field data incorporated into the topographic base mapping. The DTM will include river bed contours from the 10<sup>th</sup> Avenue pit to the confluence to the Nenana River with the Tanana River.
- Geotechnical Investigation and Report – A geotechnical investigation was performed in August. Three test holes were bored to depths ranging from 42 feet to 47 feet and samples were obtained and tested for grain size analysis. The geotechnical report is now being completed and we anticipate that a report will be available by November 10. The geotechnical report will include a description of the drilling and testing results and recommendations for the steel sheet pile foundation system.
- Structural Report – The structural engineer was on-site during the geotechnical investigation to observe the soil conditions and is now preparing the preliminary structural recommendations. The structural report will be available by November 17.

- Computer Modeling – Computer modeling has yet to be started, since it is dependent on the DTM as the basis for the calculations. We have scheduled a preliminary meeting with the U.S. Army Corps of Engineers (USACE) and the State of Alaska Department of Natural resources (DNR) on November 21 to discuss their concerns regarding the in-stream improvements and their requirements regarding computer modeling. We anticipate that the computer modeling will be completed by December 15. At this time we are planning on modeling four distinct options:
  1. Do nothing – potential impact of continued erosion upstream from the current barge docking area if nothing is done to modify or prevent erosion.
  2. Bank armoring only in the area immediately upstream from the docking area to prevent further erosion.
  3. In-stream barb construction to gradually move the Nenana to the west and halt erosion.
  4. In-stream barb construction combined with bank realignment to move the Nenana to the west of the docking area and stabilize the river location within a single construction project season.
- Preliminary Site Plan, Design and Cost Estimate – The site plan and preliminary design and details will be developed after the DTM and structural report have been completed. Cost estimates will be prepared for the 3 different construction options.
- Feasibility Report - The Feasibility Report will be prepared after the other previously noted tasks have been completed. A review meeting with the City will be scheduled prior to beginning the report to discuss and verify concurrence with proposed options and scope of work. The report will include geotechnical, structural, and modeling reports, a site plan and preliminary designs and cost estimates. The Feasibility report will provide analysis, conclusions and recommendations for the Design Phase of the project.

Please feel free to contact me at any time if you have questions regarding our progress on this project.

Sincerely,

*Sherman Engineering*



Mark B. Sherman, PE  
President

CC: File