

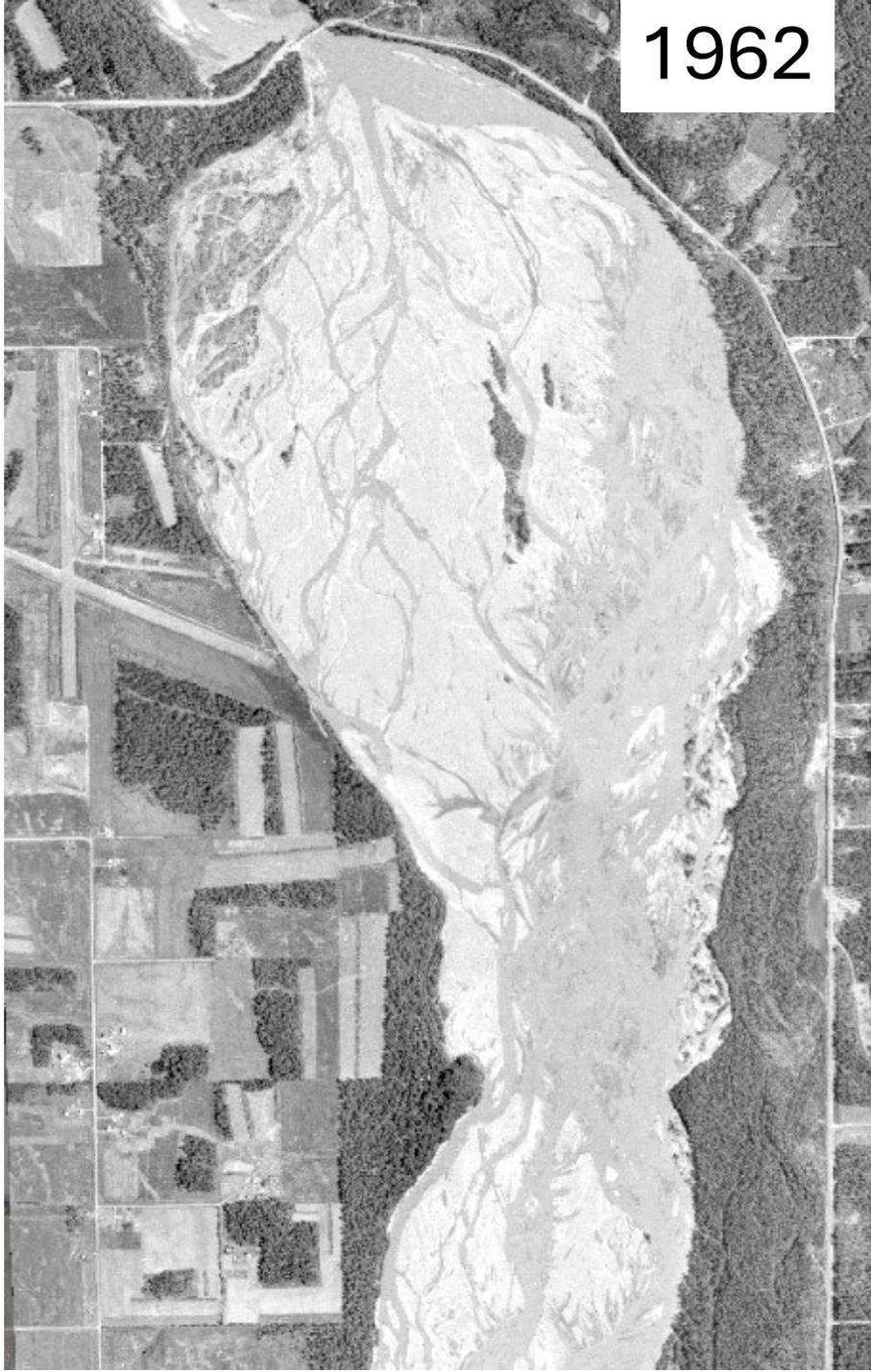


Matanuska River Gravel Extraction

Joint Assembly/Planning Commission
March 10, 2026



1962



2025



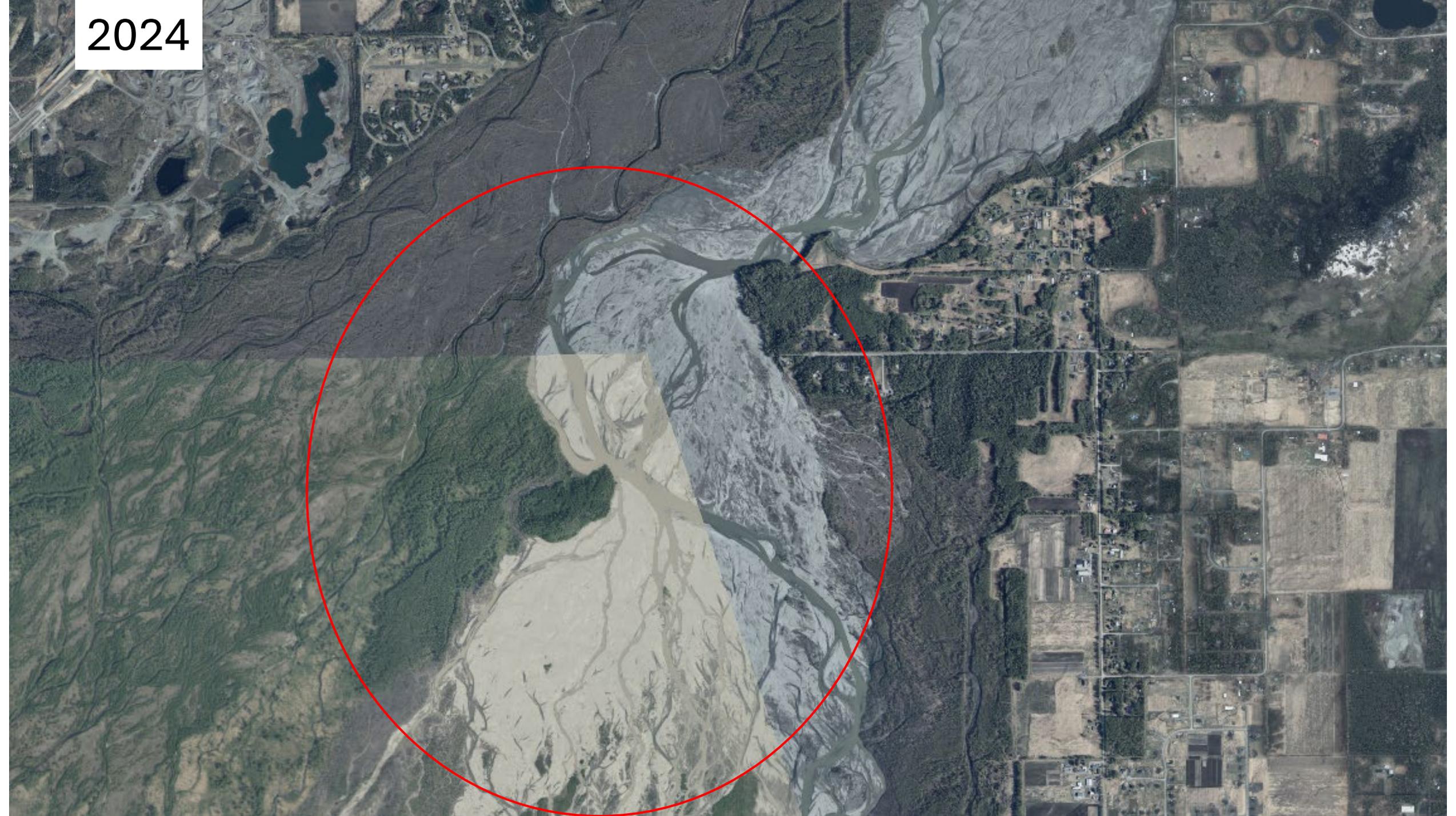
1962



1962



2024



1985



2011

W. Glenn Hwy

Lat: 61.7924° N
Lon: 147.9461° W



500 ft



2024

W. Glenn Hwy

Lat: 61.7875° N
Lon: 147.9437° W



500 ft



Permitting

- ADNR Material Sale Permit
- USACE Section 404 Permit
- National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)
- Endangered Species Act (EPA & USFWS)
- Title 41 Fish Habitat Permit Application (ADNR)
- Section 106 of National Historic Preservation Act
- National Environmental Policy Act (NEPA)
- Spill Prevention Control and Countermeasure (SPCC) Plan (EPA)
- Excavation Dewatering Wastewater Disposal Permits (ADEC)
- Water Use Permit (ADNR)
- Air Quality Control Permits, Title V (ADEC)
- Floodplain Development Permit (MSB)
- Earth Material Extraction Conditional Use Permit (MSB)



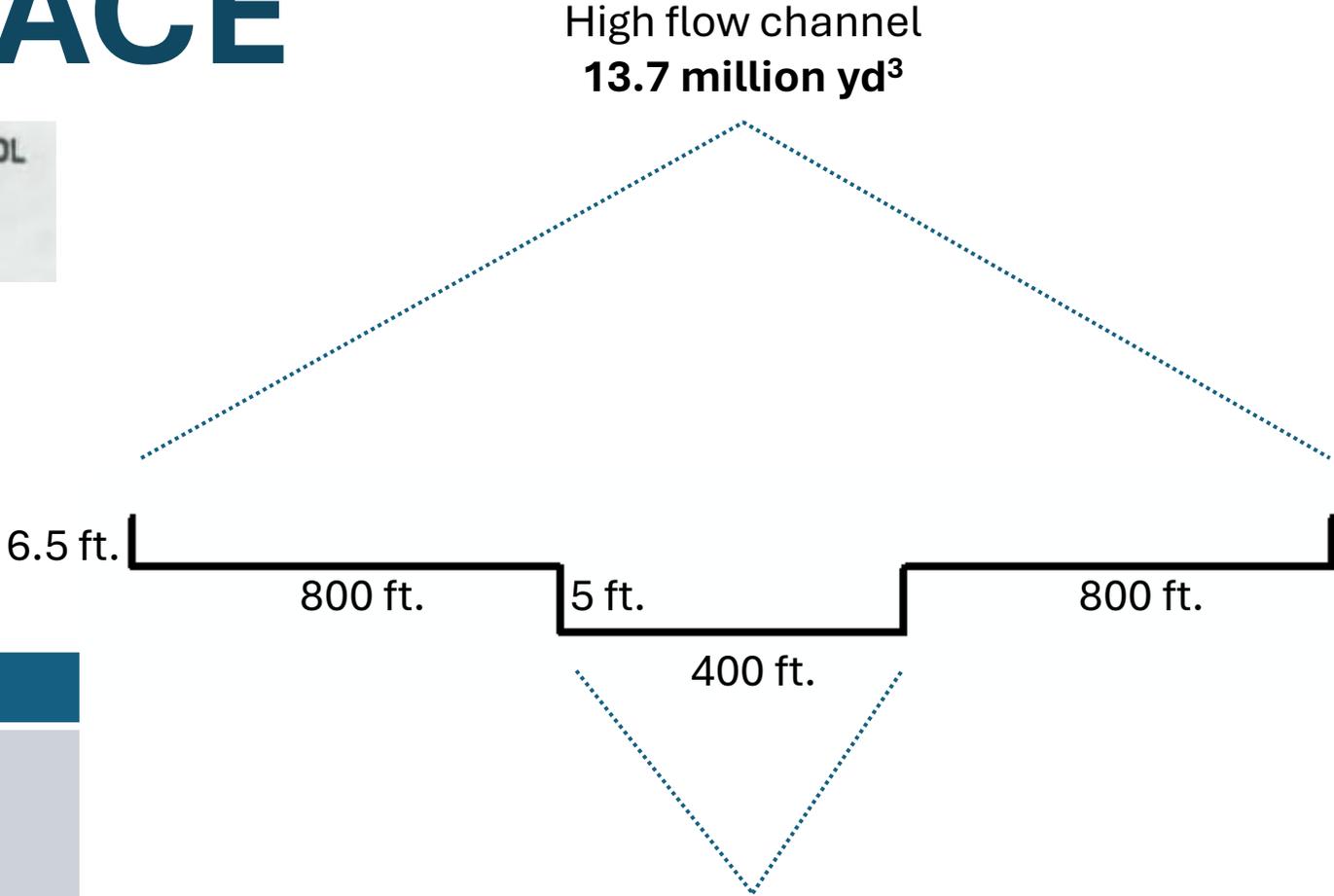
★ *Material extraction within navigable waterways does not require a permit for extraction below or within four feet of the seasonal high water table.*



AKDOT & USACE

A POTENTIAL ENGINEERING SOLUTION FOR EROSION CONTROL
ON THE MATANUSKA RIVER

October 3, 1991



Length of project	6 miles
Sediment Basin	2,700 ft. ² 15 ft. deep 4.2 million yd ³
Initial cost	\$20.3 million (1991)
Annual extraction	276,000 yd ³



AKDOT & USACE - 1992

Alaska Task Force Erosion Control of the Matanuska River

Selective Gravel Mining

We felt that this solution had some merit. In general some questions that would need to be answered are: 1. Who will purchase a dredge capable of mining in excess of 276,000 cubic yards of material? 2. Would the costs for transportation and removal of this material be competitive. 3. Is there a market? 4. What are the environmental problems? 5. What methodology can be used? (scrapers, or dredge)

A cost analysis was computed using a mechanical dredge system:

Description	Quantity	Unit	Unit Cost	Cost
Dredge (capital cost)	1	ea	\$10,735,000.00	\$10,735,000.00
Contingencies		L/S		\$2,683,750.00
				\$13,418,750.00
Average Annual Dredge Cost	50	year	\$1,145,000.00	\$57,250,000.00
Annual Repair and Replacement Cost	50	yr	\$1,350,000.00	\$67,500,000.00
Annual Operation	50	yr	\$3,150,000.00	\$157,500,000.00
Total cost for 50 years				\$295,668,750.00





U.S. Army Corps
of Engineers
Alaska District

Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion

Matanuska-Susitna Borough, Alaska

August 2003

Cost/Benefit Ratio if gravel is not self liquidating 23.2 to 1

Cost/Benefit Ratio if gravel is self liquidating 5.8 to 1



Analysis of 1991 PND Proposal

PROS	<ul style="list-style-type: none">• Attempts to address cause of bank erosion rather than symptoms• O&M may be self funding by the sale of aggregate• Reduces likelihood of channel avulsion across Bodenbug Butte area
CONS	<ul style="list-style-type: none">• bank erosion may have other contributing factors such as nature of banks and hydrologic conditions• Gravel supply may vary year to year with no correlation to variations in demand• Economic of gravel extraction may change• May be difficult to control gravel supply for very large events• May adversely impact upstream and downstream areas• Environmental concerns• Potential impacts to groundwater fed channels that currently provide fish habitat through possible lowering of groundwater level as a result of lowering water level in channel• Stabilization of channel could result in significant alteration in existing habitat functions and values

Matanuska River Erosion Assessment

Design Study Report – Final

Volume I: REPORT

November 2004



Table 4-2 Initial Capital and Annual O&M Costs of Gravel Removal

Item	Unit	Cost Per Unit (\$)	# Units Per Foot of Protected Bank	Cost Per Foot (\$)
Initial Capital Cost				
Excavate Trenches	Cubic Yard	2.3	193	447
Excavate Gravel Pit	Cubic Yard	2.3	76	175
Access Track	Foot	10	0.5	5
Stockpile Area	Acre	3500	0.002	7
Mobilization And Office	Lump Sum	160,000	0.0001	16
Engineering And Surveying	Lump Sum	105,000	0.0001	11
Total				661
Annual O&M Cost				
Excavate Gravel Pit and Trenches	Cubic Yard	2.4	32	75
Annual Mobilization and Demobilization	Lump Sum	65,000	0.0001	7
Annual Engineering, Permitting, and Surveying	Lump Sum	105,000	0.0001	11
Total				93

** Annual maintenance costs may be offset entirely if gravel is marketable*

- Predicted Erosion Boundary
- Existing Bank Protection
- Longitudinal Profile Location
- Trench Cut Location
- Pit Trap Location



Matanuska River Management Plan

Adopted: September 2010

Prepared by



missal, llc | a limited liability company

“ The gravel excavation option is fraught with many difficulties.”

“ The water flow, size of the river, and the sediment load in the river makes this option’s success unlikely.”

“ Gravel excavation may best be pursued as a revenue-raising activity, if study proves it to be feasible, rather than an erosion reduction measure.”





U.S. Army Corps
of Engineers
Alaska District

2011 Supplement Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion

Matanuska-Susitna Borough, Alaska

“

“The 2003 Study identified three potential alternatives: gravel extraction, bank armoring by riprap, and non-structural measures. **This analysis eliminated the gravel extraction alternative as it is no longer viewed as a viable measure to reduce the identified risk of erosion.** So the only alternatives addressed in this supplement are bank armoring and non-structural measures.”



Recommendation

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“The only two options in dealing with hazards from rivers are (1) control the people near the river, and (2) control the river.”

– Ken Hudson, Chief of Code Compliance (1992)



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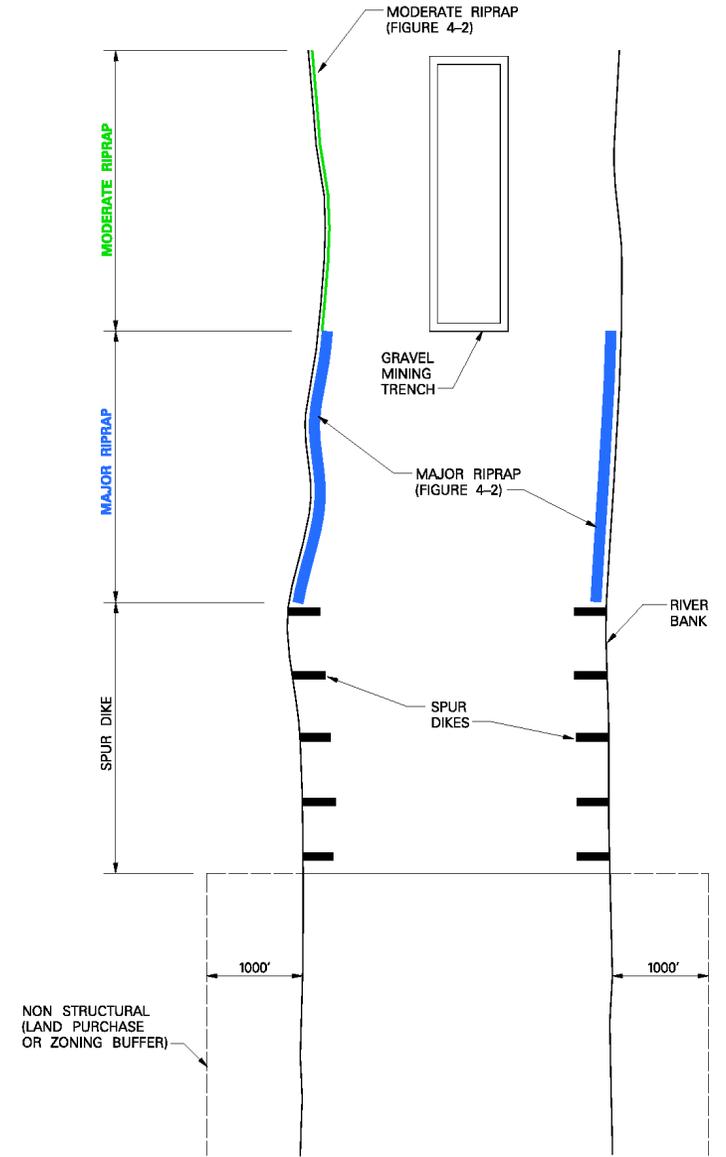
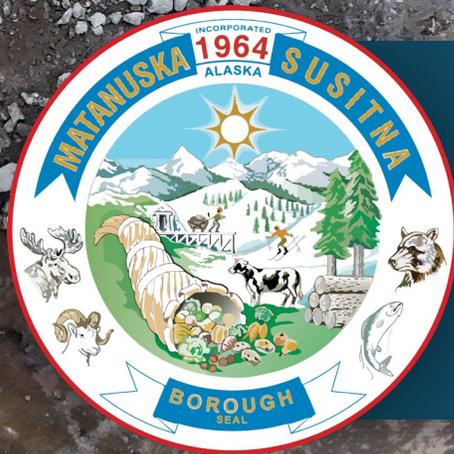


FIGURE 4-5
USNRCS
MATANUSKA RIVER EROSION ASSESSMENT – DESIGN STUDY REPORT
COMBINED ACTIONS – CONCEPTUAL PLAN



THANK YOU!



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