PARTNERING W/ THE LOWER BRULE SIOUX TRIBE TO RESTORE AND PRESERVE NATURAL AND CULTURAL RESOURCES

Planning Community Webinar

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U.S.ARMY

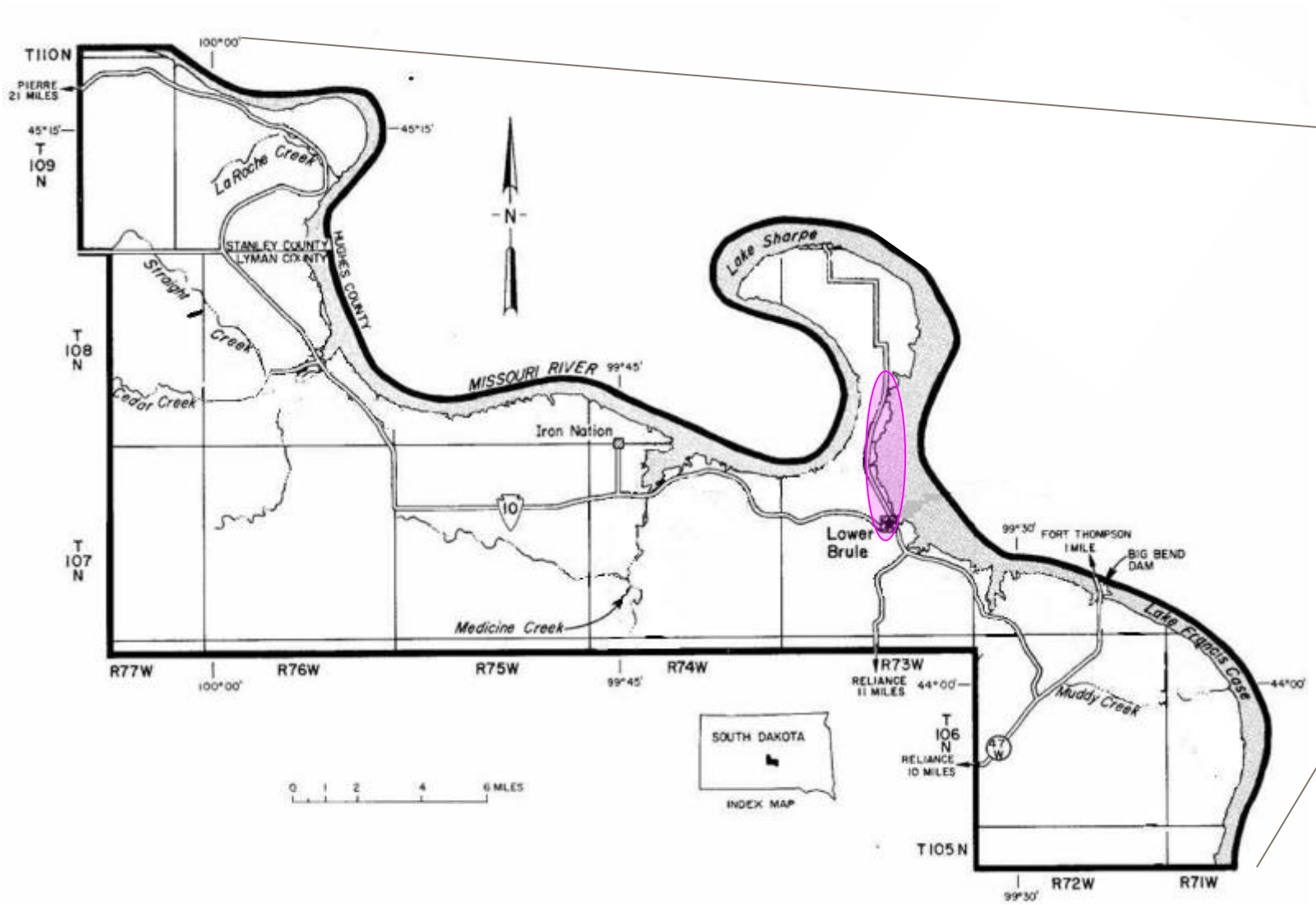
US Army Corps of Engineers®

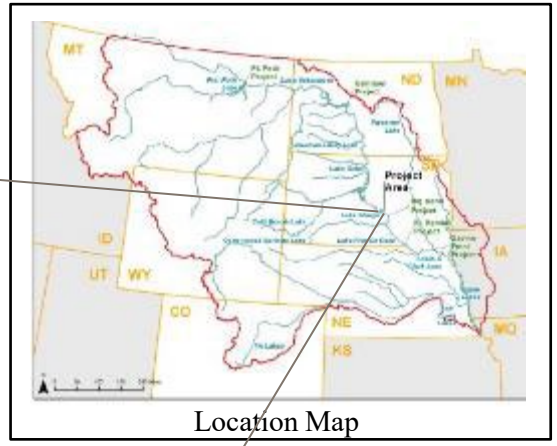
KUL WICASA OYATE
LOWER BRULE SIOUX TRIBE

AGENDA

- Background / Setting
- History of Progress
- 1st Project - Lower Brule Sioux Tribe Natural Resources Preservation and Ecosystem Restoration Project, November 2019
- 2nd Project – Lower Brule North Ecosystem Restoration Project, January 2023
- Lessons Learned

LOCATION OF LOWER BRULE, SD

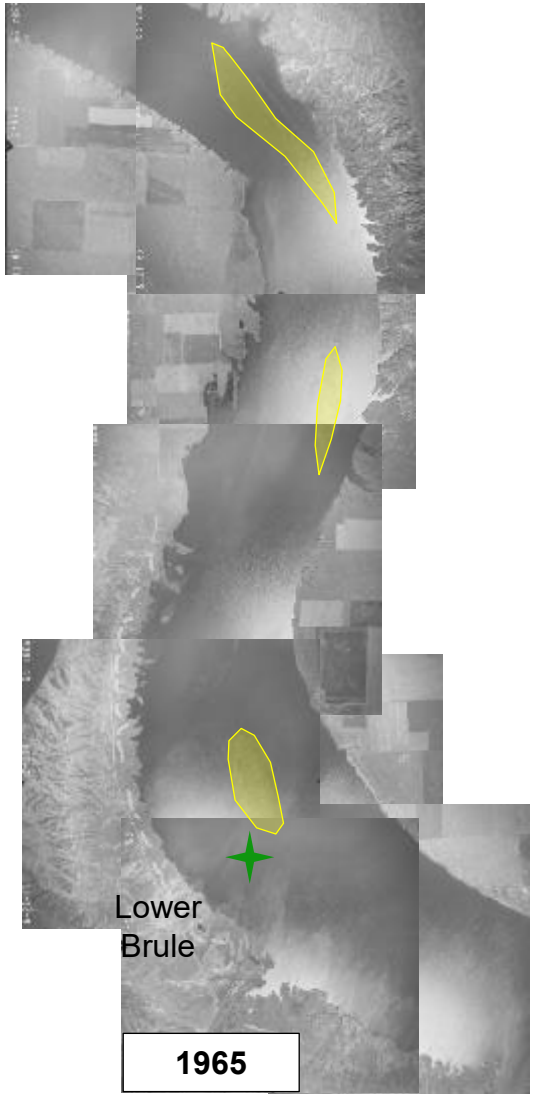


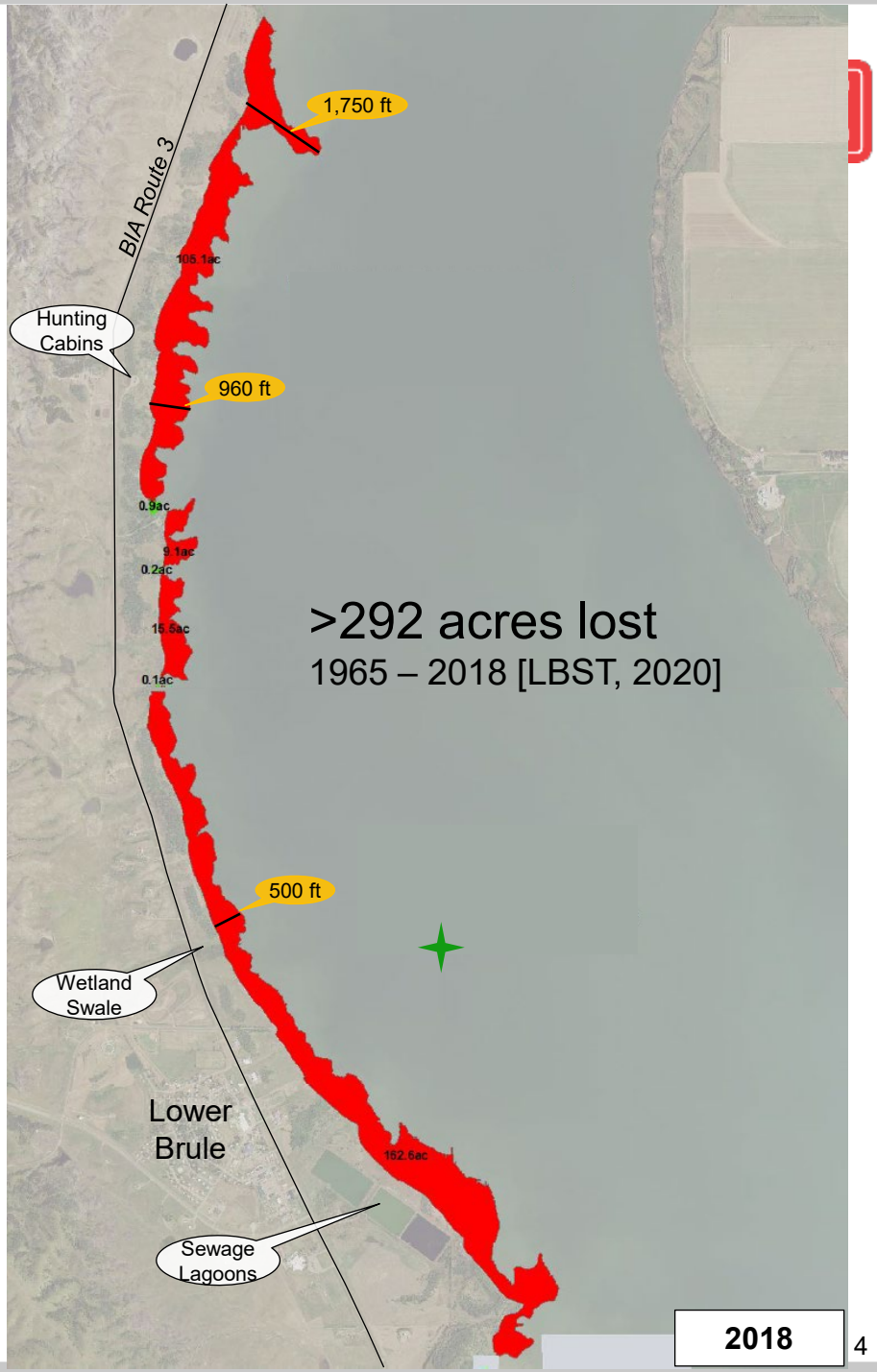


Location Map

Partnering with the Lower Brule Sioux Tribe

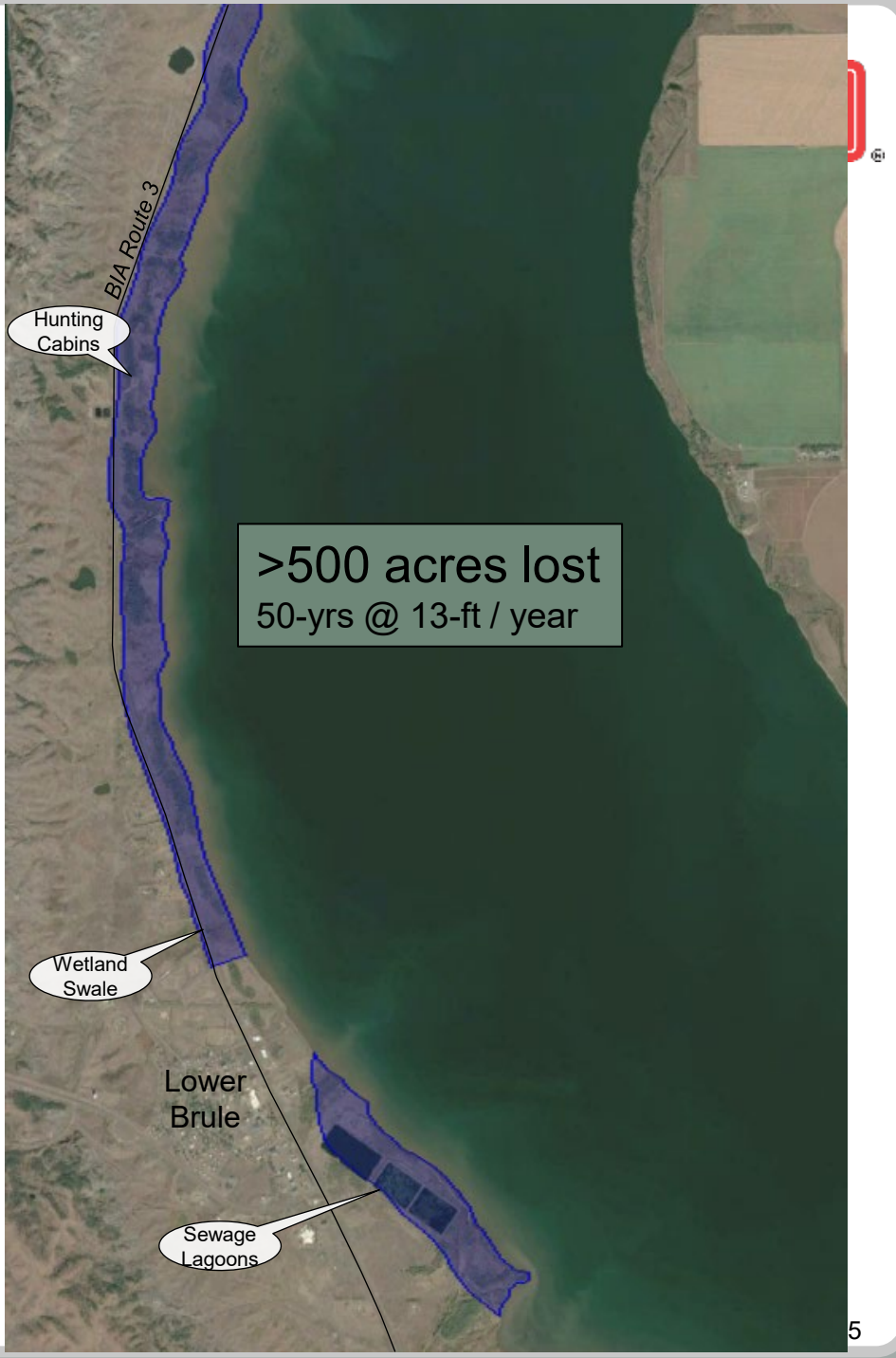
BACKGROUND / SETTING





>292 acres lost
1965 – 2018 [LBST, 2020]

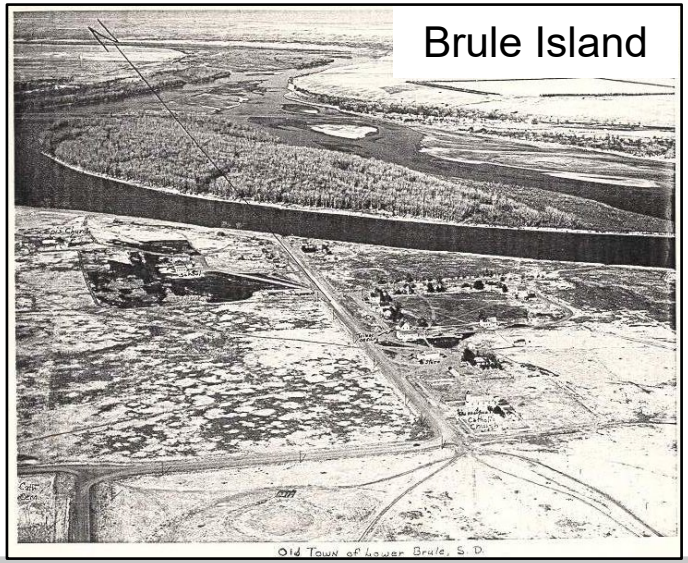
BACKGROUND / SETTING



BACKGROUND / SETTING

- Lost and Degraded Habitat
- Lost Tribal Lands – Threats to Cultural Resources & Infrastructure
- Lost Native Plant Communities & Tribal Connection

Plains Cottonwood



(LONG) HISTORY OF PROGRESS

2004-2009

- LBST proposed a TPP Project using the new Section 203, WRDA 2000 authority (2004)
- USACE MRRP "pilot" project implemented (2006)
- LBST monitoring and analysis of erosion rates along Lake Sharpe shoreline

2009-2017

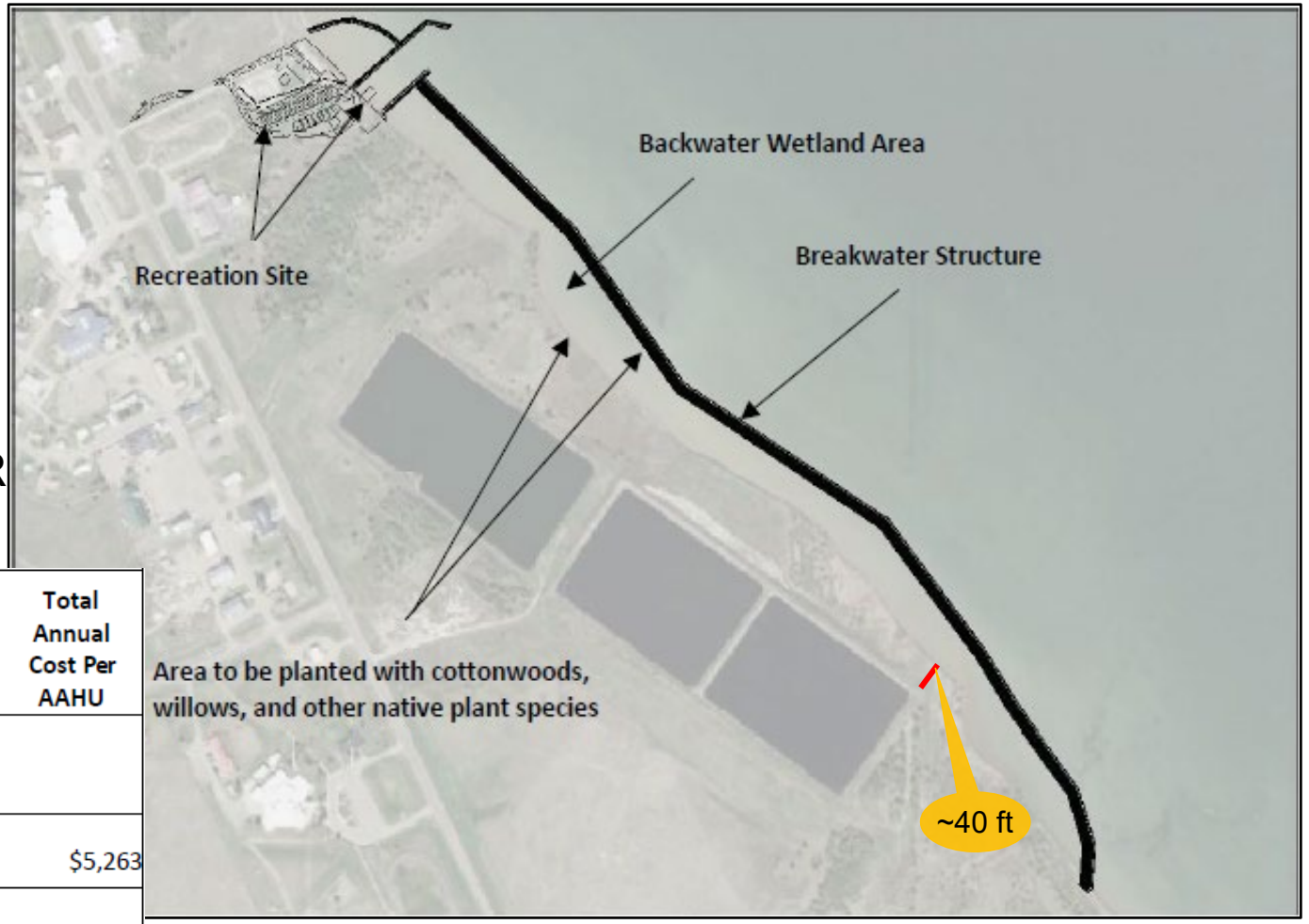
- USACE TPP 905(b) Recon Report prepared (2010)
- USGS bathymetric mapping (2013)
- USACE – LBST Charette to help define project goals (2014)
- USACE FEST-A Lower Brule Concept Plans (2015)
- USACE hosts an interagency meeting with Fed agencies (2015)
- Section 1119 & 1121 WRDA 2016
- 1st TPP Project
  - FCSA Oct 2017 → Report approved Dec 2019
  - ASA(CW) approves PPA (Apr 2020) → executed Jun 2020
  - Construction completion – spring 2023 (pend.)
- Temporary Emergency Bank Stabilization lagoons winter 2019
- 2nd TPP project
  - FCSA Oct 2020 → Report approved Feb 2023 (pend.)
  - PPA executed Spring 2023 (pend.)

1ST PROJECT – RECOMMENDED PLAN

Lower Brule Sioux Tribe Natural Resources Preservation and Ecosystem Restoration Project

Plan Formulation Strategy

- Bank stabilization for lagoons (NED)
- Access & recreation (NED)
- Wetland & riparian ecosystem restoration (NER
- Abbreviated SCRB & cost allocation



Purpose / Alternative	Total First Cost	Interest During Construction	Total Annual Cost	Total Annual Benefits	Total Annual Net Benefits	BCR	Total Annual Cost Per AAHU
Natural Resources Preservation - Alternative 1	$2,705,425	$23,331	$120,098	$170,769	$50,671	1.42	
Ecosystem Restoration - Alternative 6	$5,023,575	$45,788	$195,579	37.16 AAHU			$5,263
Recreation - Alternative 4	$2,021,000	$18,027	$84,005	$820,006	$736,001	9.76	
Totals - NED	$4,726,425	$41,358	$204,103	$990,775	$786,672	4.85	
Totals - NER	$5,023,575	$45,788	$195,579	37.16 AAHU			$5,263

1ST PROJECT – CONSTRUCTION

Lower Brule Sioux Tribe Natural Resources Preservation and Ecosystem Restoration Project

Phased Construction

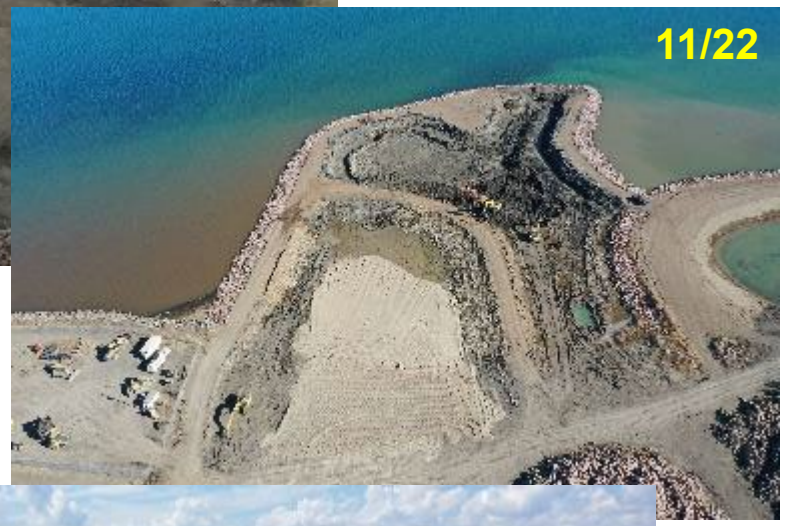
- Sub-divide the ~$10M project for funding
- Phase 1 – construct the offshore breakwater (FY20)

1ST PROJECT – CONSTRUCTION

Lower Brule Sioux Tribe Natural Resources Preservation and Ecosystem Restoration Project

Phased Construction

- Sub-divide the ~$10M project for funding
- Phase 2 – construct the riparian planting benches and recreation/access features (FY21)



2ND PROJECT

Lower Brule Sioux Tribe Ecosystem Restoration Project

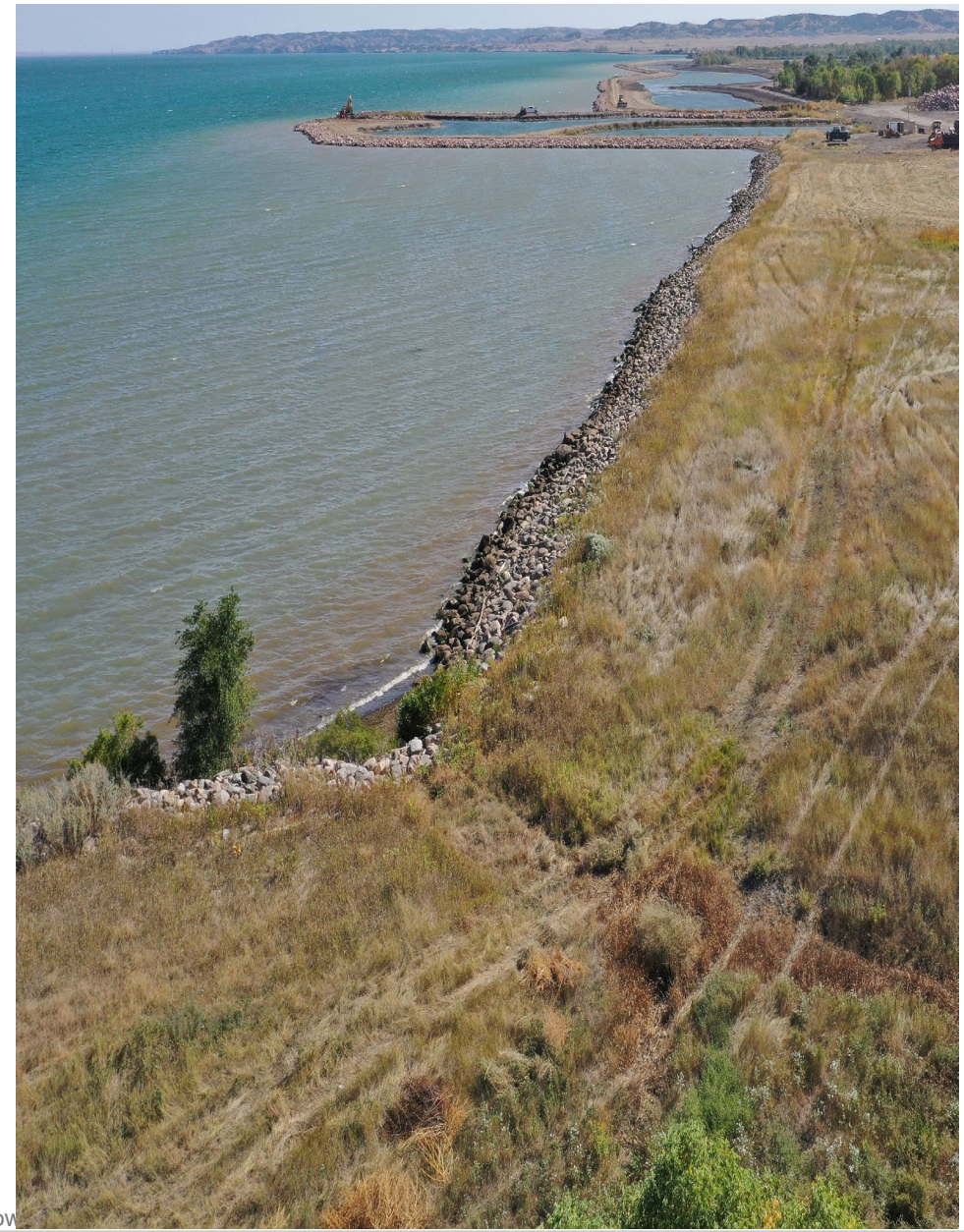
Historical Perspectives from Tribal Elders

- Missouri River provided all
- The land and landscape itself is a cultural resource to LBST
- Islands critically important for many Tribal activities
- Floodplain fertile soils abound with many native plants that were used for food, medicine, and ceremonies
- Steep banks and turbidity preclude safe interaction with the River

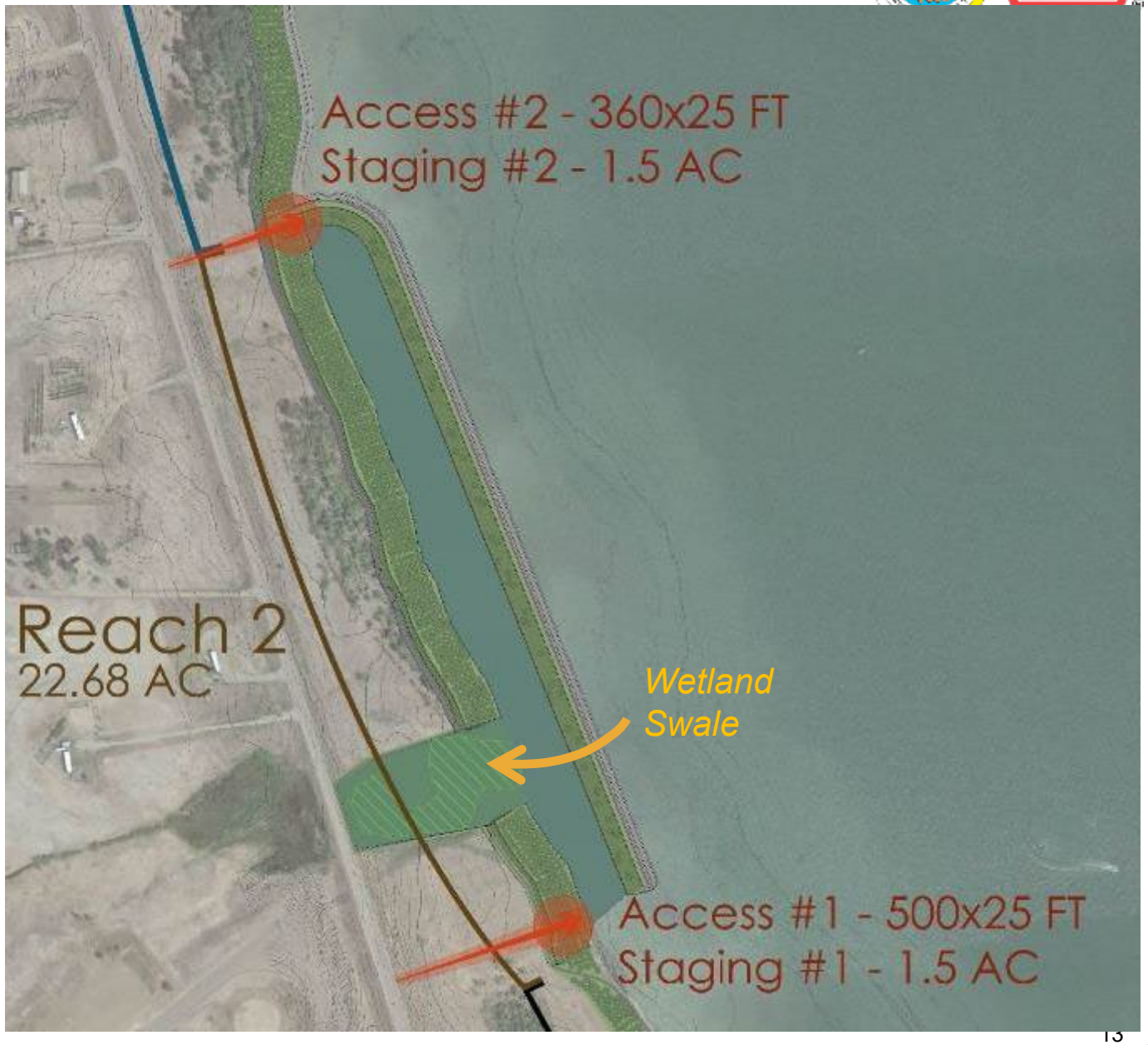
Plan Formulation Strategy

- Wetland & riparian ecosystem restoration (NER)
- Cultural & natural resources preservation (OSE)
- Comprehensive benefits (January 2021 ASA memos)

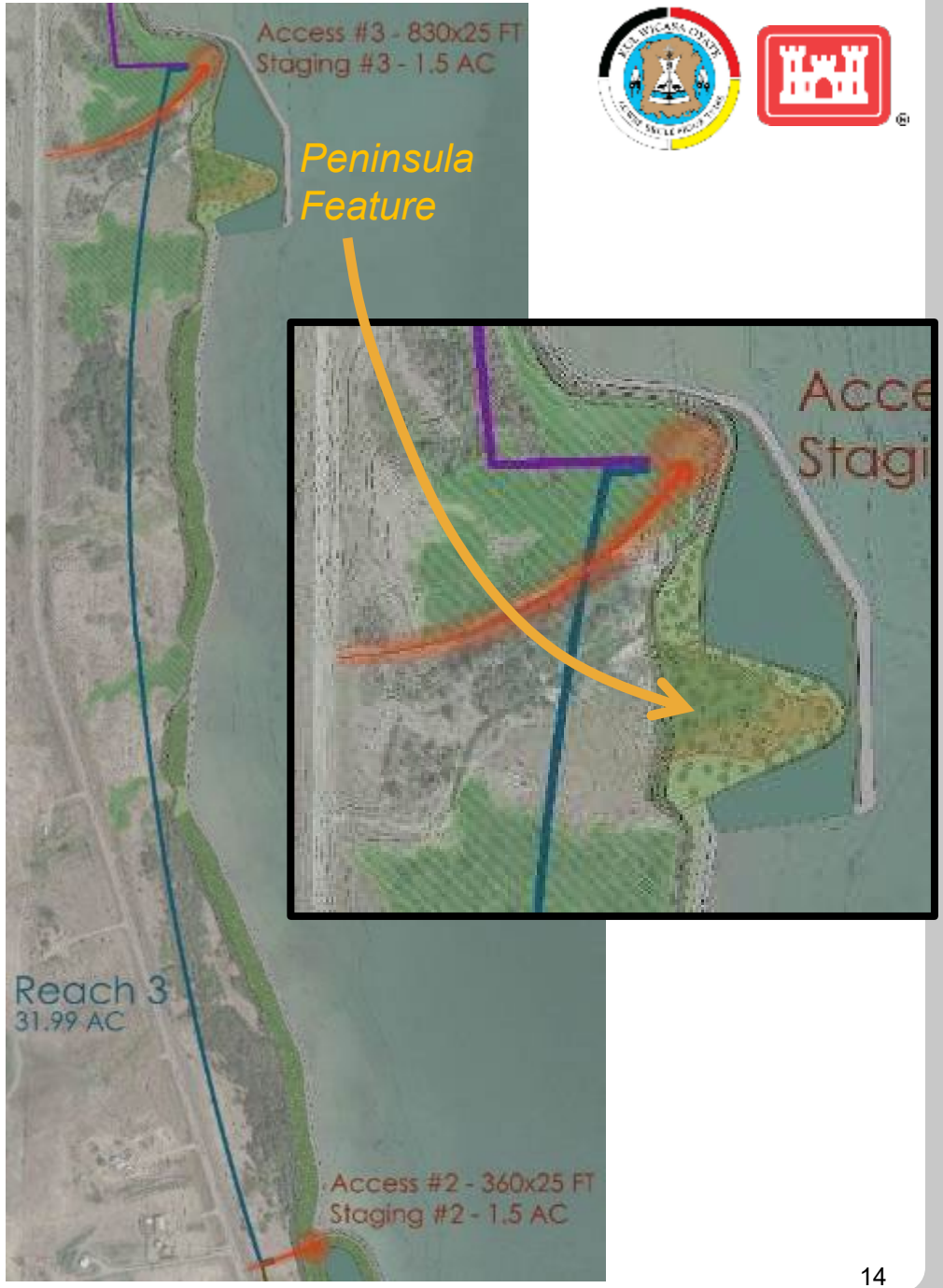
2ND PROJECT – REACH 1



2ND PROJECT – REACH 2

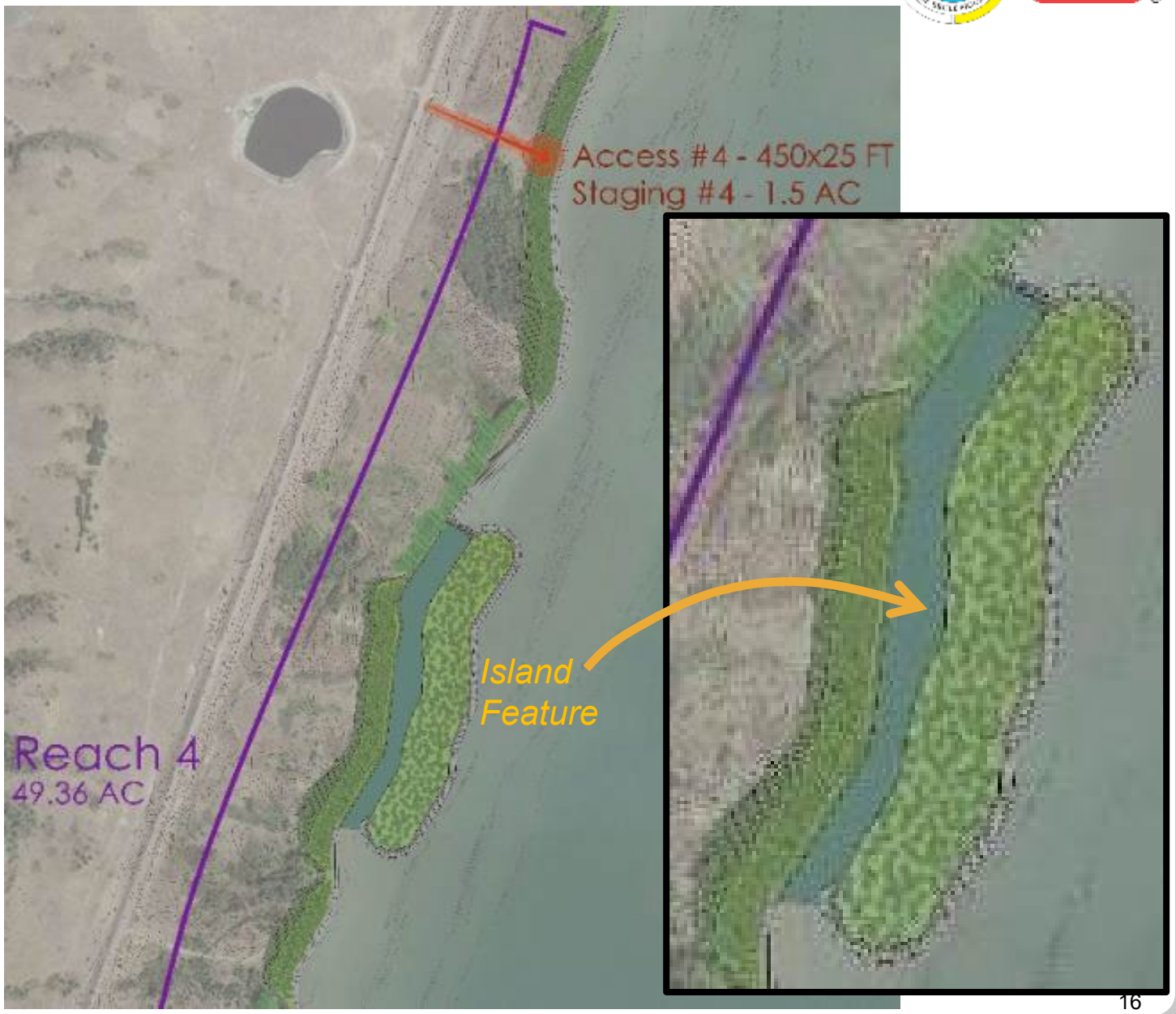


2ND PROJECT – REACH 3



2ND PROJECT – REACH 4 (SOUTH)

2ND PROJECT – REACH 4 (NORTH)



2ND PROJECT – COMP. BENEFIT COMPARISON

NED:

- All three alternatives would provide similar NED benefits in the form of cost avoidance from repairs to infrastructure and public and private property (BIA Highway 3, BoR rural waterline, etc.).
- Plan 7 includes restoration of larger land mass areas (island and peninsula) which would provide additional buffer for the shoreline, infrastructure, and property.
- All three alternatives provide opportunities for passive recreation, but Plan 7 offers a unique and distinctly different experience with the peninsula feature which would provide additional education and cultural benefits to Tribal members who use that area to connect with culturally significant native plants.

RED:

Alternative	Local Capture	Jobs (FTE)	Labor Income	Value Added
Plan 5	$18,431,054	234.4	$11,970,422	$11,313,067
Plan 6	$21,222,930	269.9	$13,783,663	$13,026,734
Plan 7	**$24,811,702**	**315.5**	**$16,114,464**	**$15,229,539**

OSE:

Alternative	Cultural Resource Preservation	Tribe/River Connectivity	Resiliency
Plan 5	Medium-High	Medium	Medium
Plan 6	High	Medium-High	High
Plan 7	**High**	**High**	**High**

EQ:

Alternative	Net Riparian Habitat Units	Net Wetland Habitat Units
Plan 5	28.1	43.5
Plan 6	28.1	49.0
Plan 7	**29.2**	**53.7**

2ND PROJECT – RECOMMENDED PLAN

- Restores a 100-ft-wide riparian planting bench along the shoreline for 3.9 miles which ties to another 5,000-ft-long restoration project creating nearly 5 miles of contiguous riparian corridor.
- Creates a 2,400-ft-long L-head breakwater and sheltered wetland connecting to the only remnant wetland in the entire study area.
- Creates a 200-ft by 1,500-ft island (6.9 acres) to function as a NNBF and restore a historical island lost due to the reservoir construction.
- Creates a 300-ft-long, 2.2-acre peninsula next to an already available access point providing a unique site for restoring culturally significant native plants and allowing ease of Tribal interaction.

Habitat Restored	Approximate Acres
Wetland	17.8
Riparian	60.3
TOTAL	**78.1**
Connecting Existing Habitats	18.7

Recommended Plan	
First Cost	$36,865,660
OMRR&R	$82,046
Average Annual Costs	$1,441,420
AAHUs	82.85
AAC/AAHU	$17,408

Separable Element #1	
First Cost	$19,958,574
Federal Share*	$18,228,293
Non-Federal Share*	$1,730,281

Separable Element #2	
First Cost	$16,907,084
Federal Share*	$15,461,745
Non-Federal Share*	$1,445,339

LESSONS LEARNED

- Patience and perseverance are a must
- TPP authority offers some unique opportunities to develop projects that focus on addressing Tribal needs
- Ask for input from Tribal Elders to inform:
  - Needs
  - History
  - Tribal perspective on cultural significance of the resources and outputs
- Integrate Tribal representatives (Fish & Wildlife, THPO, Housing) on PDT
- Utilize a landscape architect on PDTs to help illustrate plans
- Be creative in developing strategies for cost sharing
- Successes open doors for new opportunities

QUESTIONS/DISCUSSION