

A Comprehensive identification of Beneficiaries of Navigable Waterways



**A presentation to the Inland Waterway
Users Board**

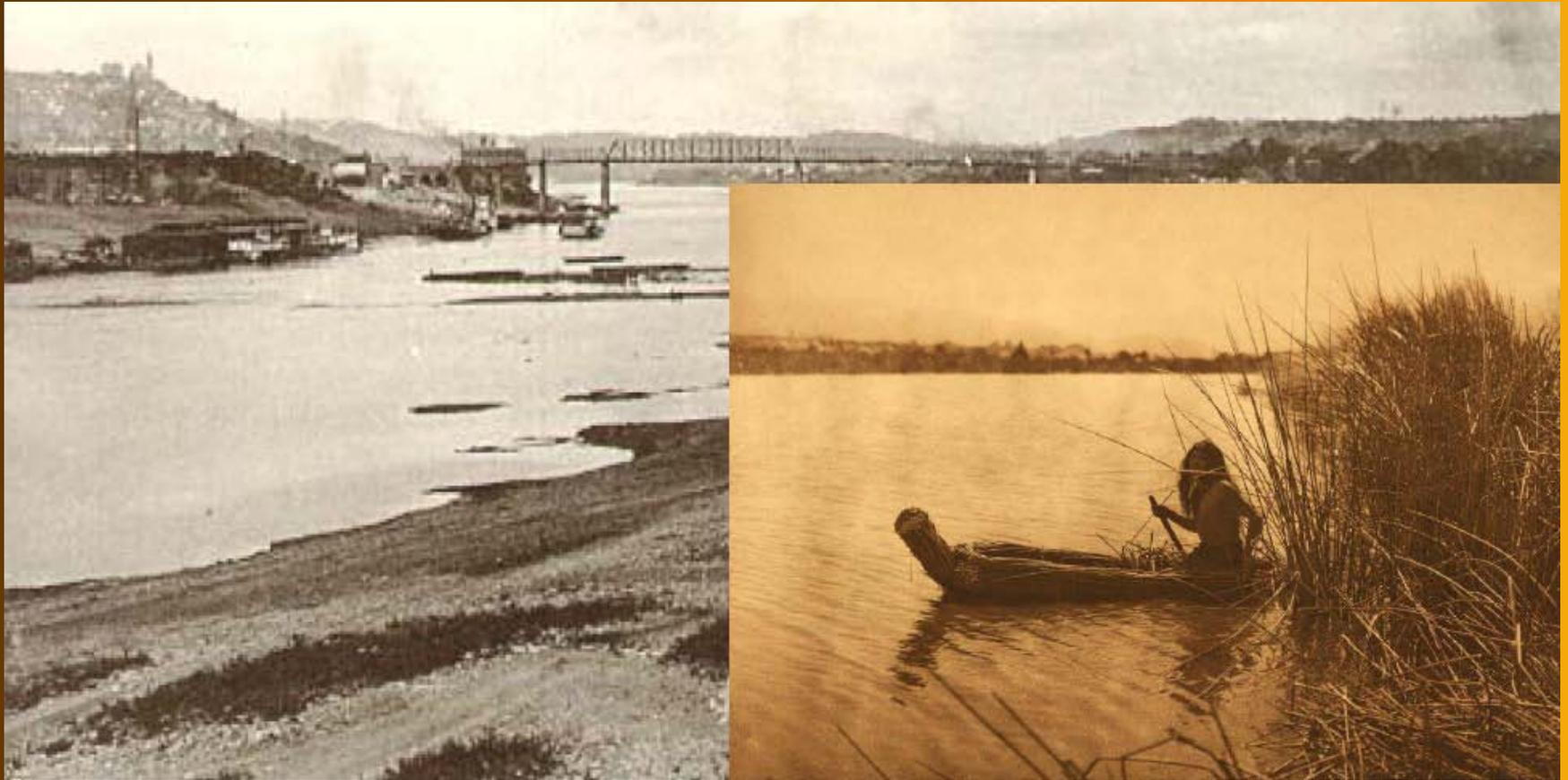
October 20, 2010

Isle Casino Hotel Bettendorf

Pre-Dam Ohio River at Cincinnati

Depth = 1 foot and eleven inches

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IWUB Request

- I gave a power point presentation to the IWUB on the subject of “other beneficiaries of projects commissioned for navigation” on December 15, 2009
- The IWUB asked for a documentation of the results
- The paper “Toward A Comprehensive Identification of Beneficiaries of Navigable Waterways” was submitted to the Corps for review in August 2010

Benefits Categories

- Shippers through transportation savings
- Economic development
- Flood control
- Hydropower generation
- Water supply
- Nuclear and Coal steam plants
 - Heat assimilation
 - maintenance
- Sewerage assimilation
- NASA
- Military
- Recreation
- Vector control
- Irrigation-farmers
- Property values

The Paper

- The Paper
 - Covers the material presented in the slide show
 - Adds a case study to facilitate the ranking of the value accruing to each user group

Kentucky and Chickamauga Reservoirs

- We picked the Kentucky and Chickamauga Reservoirs because much of the needed data is readily available or can be estimated for these two locks and dams (hydropower, recreation and flood damages avoided are generally not provided by dam or reservoir)
 - **TVA estimates flood damages avoided by project**
 - **The Corps of Engineers estimates the Kentucky Dam value**
 - **TVA hydropower benefits are easily estimated**
 - **TVA built a model with which to estimate property value impacts given permanent changes in elevation**
 - **TVA commissioned recreation studies for several projects**
 - **A follow up to the 2003 Reservoir Operations Study**

TVA Studied the Wealth Effect on Selected Reservoirs

- May 2003, “Estimated Changes in Property Values and Spending for Alternative Reservoir Operations in the Tennessee River Valley”, *TVA Reservoir Operations Study FEIS*
- Cherokee, Chickamauga, Douglas, Ft. Loudoun, and Norris were studied

Wealth vs. Expenditure Impacts

- With a loss in permanent elevations, property owners lose wealth as their property is worth less.
- The Federal Reserve Board has studied the wealth phenomenon
 - Maki and Palumbo (2001) “Disentangling the Wealth Effect: A Cohort Analysis of Household Saving in the 1990s”, Federal Reserve Board of Governors

Property Value Impacts from a Nine Foot Loss in Channel Depth

	Fort Loudoun (000,000)	Chickamauga (000,000)
Value of Property	\$ 3,315.935	\$ 2,478.900
Impacts	\$ 1,118.465	\$ 420.668
Per Cent of Total Value	33.73	16.97

Annual Values Accruing to Selected User Groups at Kentucky

User Group	Value (000,000)	Percent
Recreation	\$1,687.20	60.69
Water supply	649.70	23.37
Navigation	384.00	13.81
Hydropower	39.00	1.40
Property owners Expenditures	?	0.00
Flood Control	20.00	0.72
Total	2,779.9	100.0

Annual Values Accruing to Selected User Groups at Chickamauga

User Group	Value (000,000)	Percent
Recreation	\$967.8	83.41
Water supply	135.05	11.64
Hydropower	28.00	2.41
Property owners Expenditures	12.62	1.09
Flood Control	12.85	1.11
Navigation	4.00	0.34
Total	1,160.32	100.0