



The Kentucky Transportation Center

Who We Are and What We Do

January 21, 2011

Our Mission

- } We provide services to the transportation community through research, technology transfer, and education. We create and participate in partnerships to promote safe and effective transportation systems.



Our Mandate*

- } KTC "... will serve to stimulate, coordinate, and manage the efforts of the academic, private, and governmental sectors in addressing a broad range of transportation issues ..."
- } "The Center will address all facets of the transport of persons and goods and the delivery of services as well as all modes of transport, including water, rail, air, public transport, highway, cycling, and walking."
- } "Attention will be paid not only to the physical elements of transport systems, but also to the broader societal issues and impacts associated with various transportation alternatives ..."

*Per UK Board of Trustees – April 3, 1979

Brief History of KTC

- } 1941 – Kentucky Highway Dept. formed Division of Research, located on University of Kentucky's campus.
 - Initial focus was primarily on materials research.
- } 1979 – UK's Board of Trustees created Kentucky Transportation Center at UK.
- } 1980 – Kentucky DOT abolished the Division of Research and directed UK to assume the DOT's research functions.
- } 1988 – Research and Technology Transfer functions were brought together within KTC.

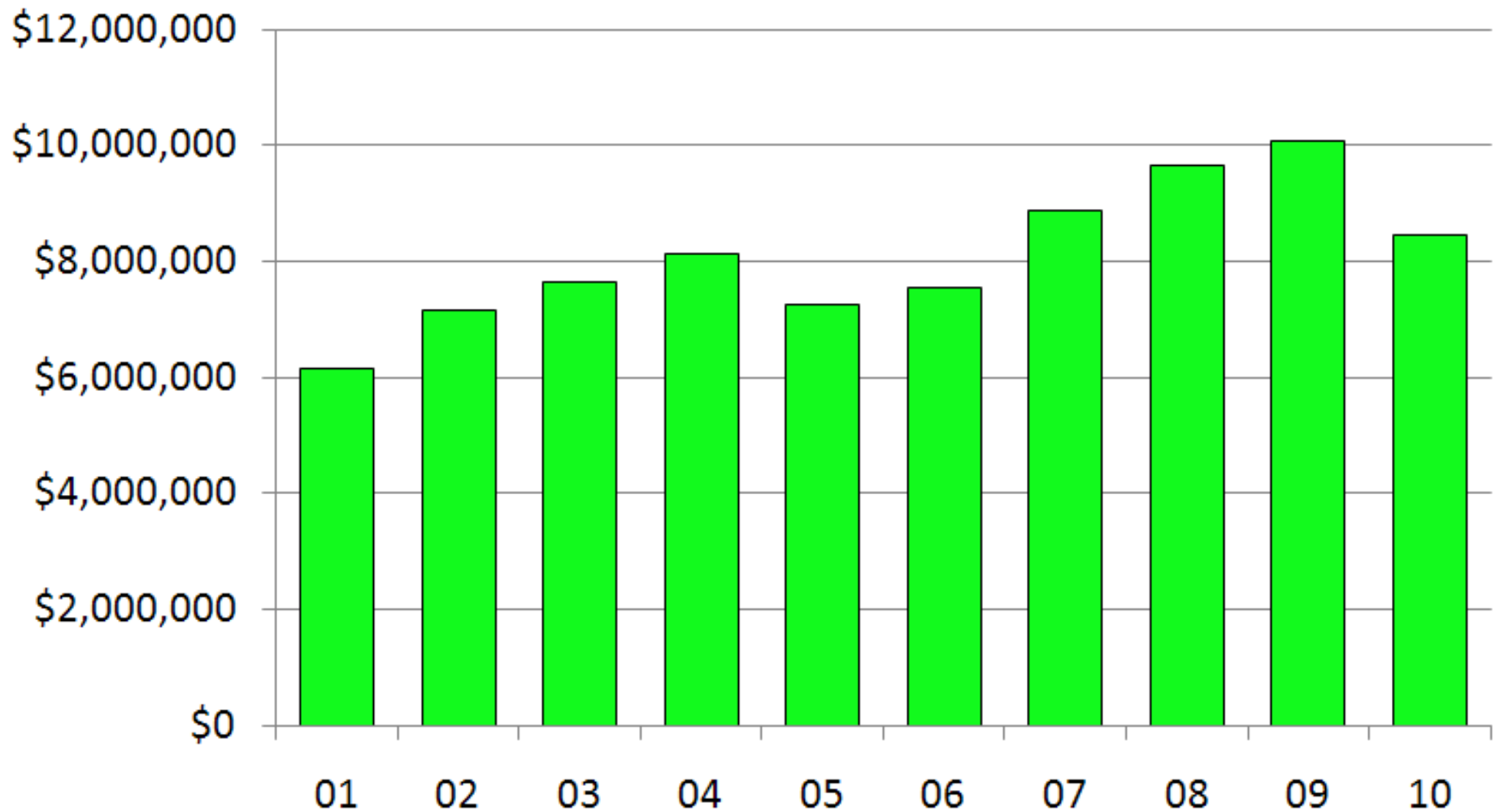
Current Staffing Levels

- } 44 Permanent, Full-Time Employees
- } 24 Temporary Employees
- } 30 Student Employees
- } Total 98 Employees
- } Plus 7 Civil Engineering Faculty who regularly conduct KTC research



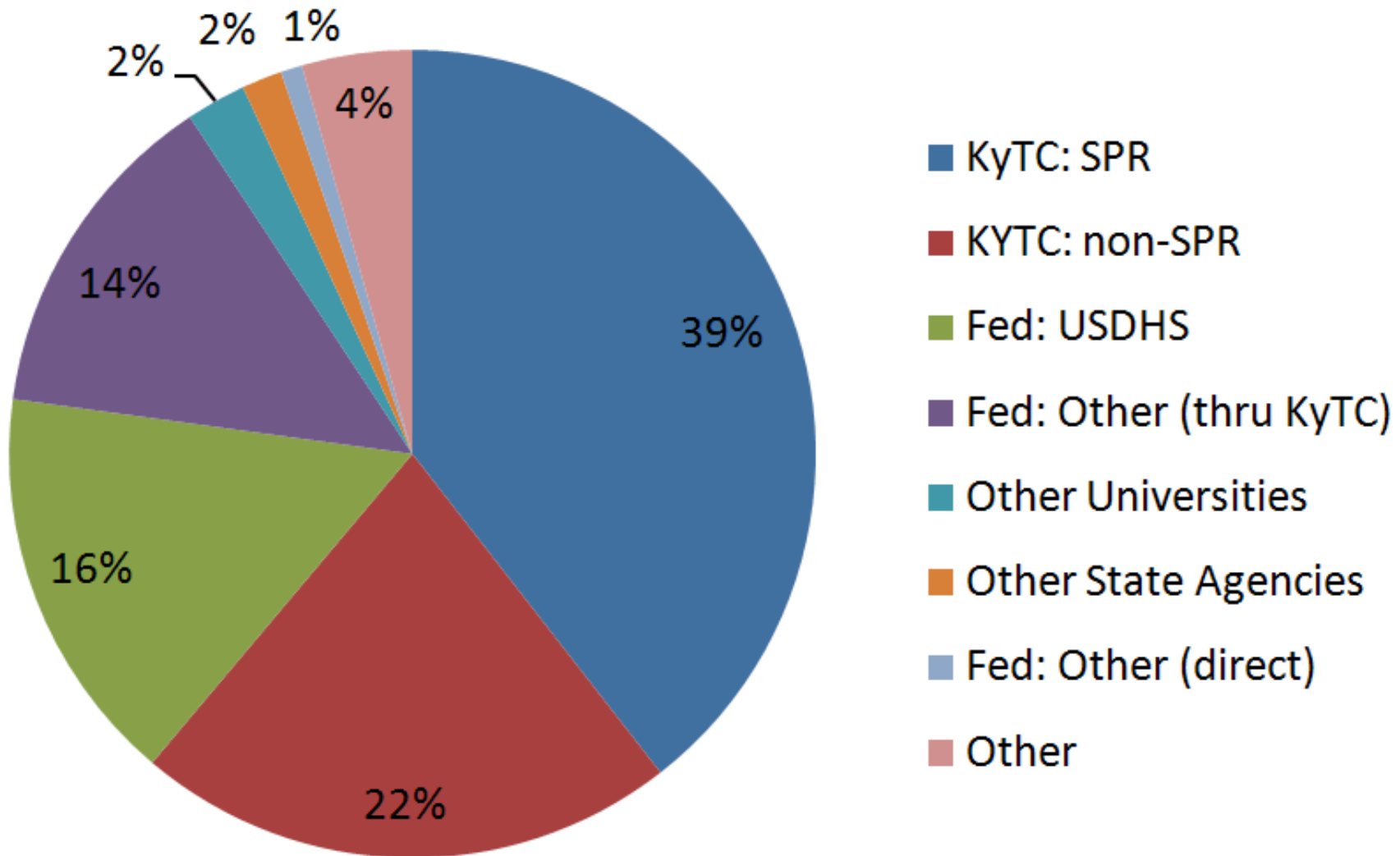
Funding History

KY TRANSPORTATION CENTER Total Expenditures by Fiscal Year



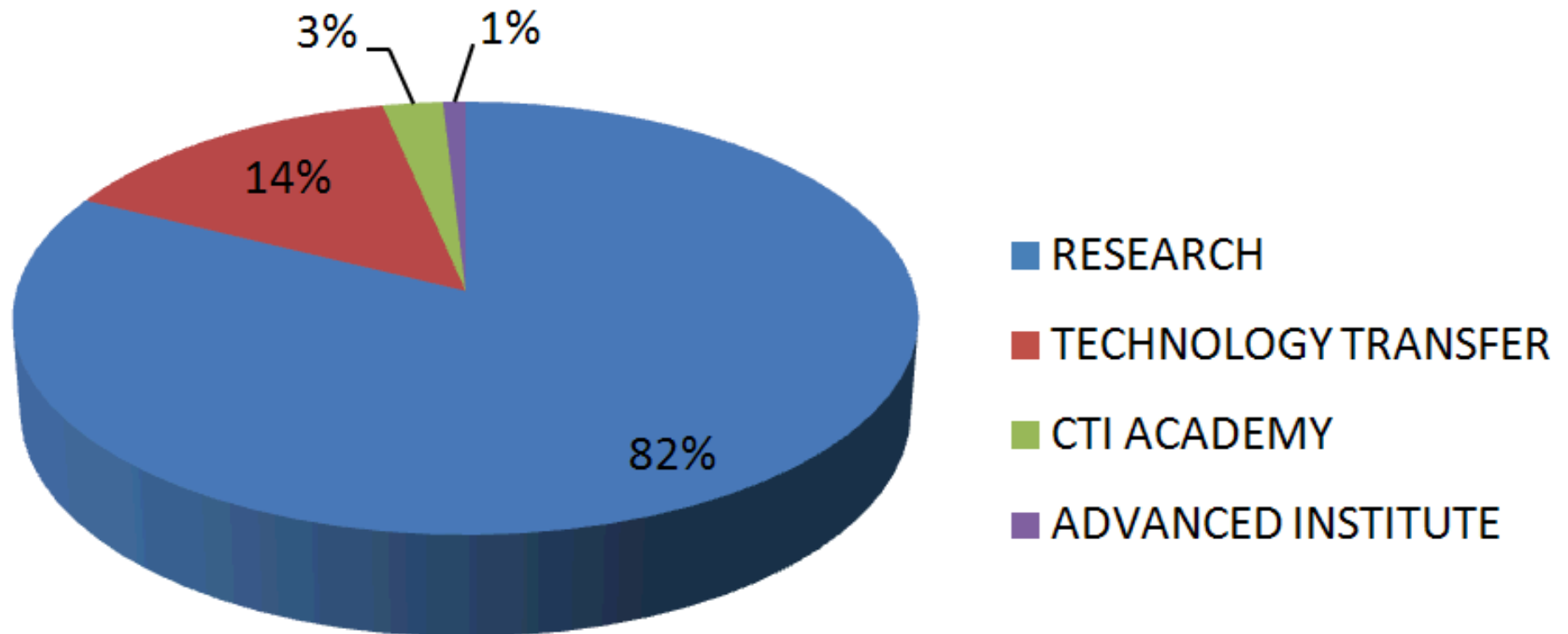
Breakdown of Funding Sources

Expenditures by Funding Source: FY 2010



Breakdown of Expenditures

KTC Expenditures by Program Area: FY 2010



Research in Waterways Transportation

- } Our goal at KTC is to develop a strong research emphasis in waterways transportation. This makes sense, in light of...
 - The importance of river transportation to Kentucky; and
 - Kentucky's strategic location with regard to the nation's inland waterways system.
- } We want to become recognized nationally as a "center of excellence" for research related to waterways transportation.

Questions/Comments?



Inland Waterways Project



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The Beginning of the Waterways Project

Meeting with River Industry Executives
June 16, 2010 in Paducah, KY



Paducah, KY
800 Dry Barges



Paducah, KY
1,000 Dry Barges



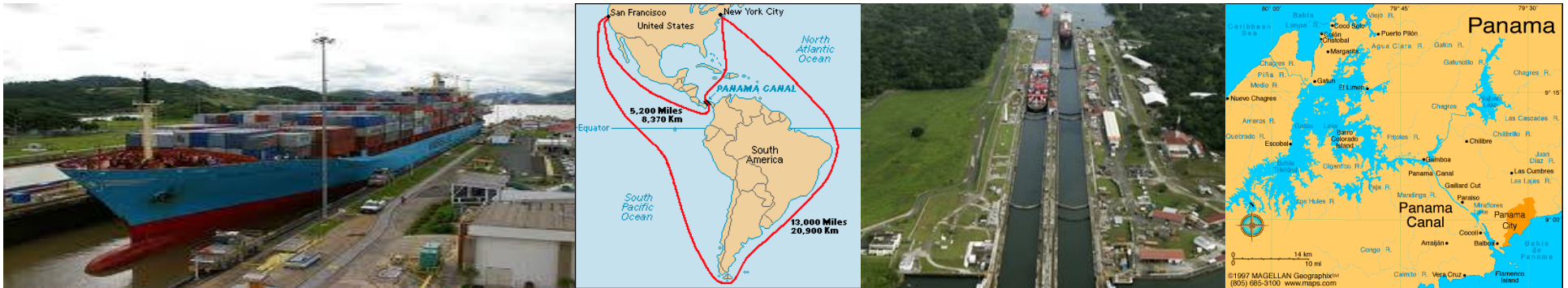
Nashville, TN
4,000 Barges



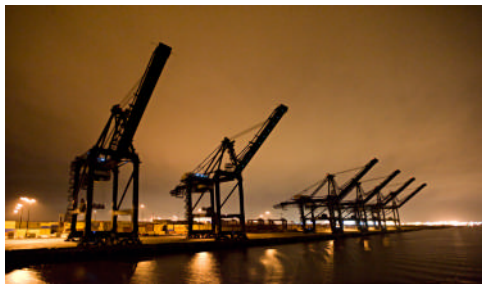
St. Louis, MO
3,100 Barges



Increased Interest in Inland Waterways is Emerging



Expansion of the [Panama Canal](#) and the potential for increased waterways traffic in the Commonwealth.



The US Maritime Administration's creation and promotion of the [Marine Highway Program](#).

KTC - Building a Research Program

We have started contacting additional stakeholders in an effort to build a comprehensive research agenda, that encompasses all the challenges and opportunities facing the inland waterways industry.



Waterways Council Inc.



Kentucky Association of Riverports



Inland Rivers Ports and Terminals



The Tenn-Tom Waterway Association



Ohio River Basin Alliance



USACE

KTC Inland Waterways Project Future Research Goals

To better understand the impact of Panama Canal expansion project on Kentucky's waterways.

Continue to work to build a strong working relationship with waterways stakeholders, both within the commonwealth and nationally.

Design and execute a research agenda that will support the research needs of America's growing waterways industry and provide Kentucky with a first class waterways research center.



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Research Topics:

Modal Interactions and Impacts

- 1) Explore the impact of modal substitution for Kentucky ports and their hinterlands. What are the implications of shipping more (or less) goods via waterways in Kentucky? This could include accounting for aspects of: economic impacts, environmental impacts, roadway congestion impacts, and carbon footprint issues. This implies improving our data about waterway commodities and flows along and through the ports in Kentucky.
- 2) Estimating the impact of individual riverports on the community and the transportation system. Estimate the impact on KY highway system if traffic currently moving through a riverport were diverted to highway/rail. Estimate impact if this volume increases (i.e. more moves to waterways from highways).



Research Topics:

Infrastructure and Investment

- 3) Determine the capacity and reliability of Kentucky's waterways. What might the capacity of the inland waterways be? Currently, how close are we to that capacity? Where are the bottlenecks/choke-points? What are the costs associated with bottlenecks or unanticipated closings? How can infrastructural delays be mitigated?
- 4) How can Public Riverport Authorities help increase access and use of the waterways, beyond building ports? Are there ways they can coordinate/collaborate with Economic Development on industrial parks, and/or private ports to expand access and use?



Research Topics:

Changing Transportation Conditions

- 5) What will the impact of the Panama Canal expansion be on both container and bulk commodities movement? What is the potential for bulk shipping growth along inland waterways after the Panama Canal expansion? What infrastructure requirements are there?
- 6) Forecasting the impact of energy market fluctuations and the demand for inland waterways shipping. What is price of shipping goods via roadway/waterways/rail as fuel prices fluctuate and how much modal substitution would there be? Also included could be the price of coal, as it is a major Kentucky commodity, and how that impacts waterways shipping.



Research Topics:

Data / Information Needs / Systems

- 7) Economic impact of increased security needs for waterways transport. Increased shipping (potentially container on barge) will require increased security. We can examine the economic impact of the requisite security industry that will emerge from the growth of inland waterways transport industry.
- 8) Assess the potential for, and possible design of, an inland river shipping information system. A system that would allow potential shippers to identify alternative carriers and their rates. A sort of 'digital freight forwarding' system.

