



KENTUCKY TRANSPORTATION CENTER
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**Kentucky
Transportation Center
Advisory Board Meeting**

Commonwealth Stadium,
Lexington, KY
Woodford Reserve Club
November 9, 2016



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Summary written by: Robin Baskette

The KTC Advisory Board was established by the Kentucky General Assembly in 1984 to assist in policy formation for and provide direction to the Kentucky Transportation Center. The composition and duties of the Board are outlined in KRS 177.375. The Board meets twice each year, typically in May and November.

Meeting Attendees

- **Board Members**

- Patty Dunaway, State Highway Engineer
- Dean Larry Holloway, College of Engineering
- Henry Branham, Board Member
- Stan Holmes, Board Member
- Marwan Rayan, Board Member
- Clint Goodin, Board Member
- Gary Moore, Board Member

- **FHWA**

- Thomas Nelson, Jr.
- Tony Young

- **Other Guests**

- Calvin Grayson, Emeritus Director

- **KTC Staff**

- Joe Crabtree, Director
- Doug Kreis, Associate Director
- Clark Graves, Associate Director
- Jennifer Walton, Program Manager
- Jerry Pigman, Program Manager
- Brad Rister, Program Manager
- Jeff Jasper, Program Manager
- Bryan Gibson, Program Manager
- Deb Bastani, College Business Analyst
- Ted Hopwood, Program Manager
- Gabriel Dadi, Research Professor
- Valerie Pitts, Office Manager
- Andrew Myers, Executive Assistant
- Robin Baskette, Technical Editor



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Kentucky Transportation Center Advisory Board Meeting

AGENDA

November 9, 2016
Commonwealth Stadium, Lexington, KY
Woodford Reserve Club
Lunch at Noon, Meeting starts at 1pm

1:00 - 1:10 pm	Welcome and Opening Remarks	Secretary Greg Thomas
1:10 - 1:25 pm	Opening Remarks <ul style="list-style-type: none">• State Highway Engineer• Federal Highway Administration, KY Division• UK College of Engineering	Patty Dunaway Thomas Nelson, Jr. Dean Larry Holloway
1:25 - 1:30 pm	Self Introductions	All
1:30 - 1:35 pm	Approval of Minutes from 05/10/15 Meeting	Secretary Thomas
1:35 - 1:45 pm	State of the Center	Joe Crabtree
1:45 - 2:25 pm	Overview of Key Activities and Initiatives	Clark Graves Doug Kreis
2:25 - 2:35 pm	Break	
2:35 - 3:45 pm	Developing the Center's Vision for 2022 (Presentation and Facilitated Discussion)	Joe Crabtree
3:45 - 4:00 pm	Other business?	
4:00 pm	Adjourn	



OPENING REMARKS-PATTY DUNAWAY, STATE HIGHWAY ENGINEER

Transportation Secretary Greg Thomas was not present, so Patty Dunaway, State Highway Engineer, provided opening remarks.

Ms. Dunaway is the former chief district engineer from Elizabethtown, and in her first 6 months as State Highway Engineer, she has installed department of highway leadership meetings that involve all division directors and chief district engineers. She is emphasizing teamwork, communication, a safety mindset, efficiency, and innovation. Snow and ice teams have recently been formed, and Ms. Dunaway is eager to make the Cabinet paperless by working with KTC to develop an online Engineering Policy Guide (EPG).

Ms. Dunaway described how the change of administration presents challenges. Governor Bevin has challenged KYTC with prioritizing efficient project delivery. Because there is a shortfall in funding, the Cabinet is looking at surrounding states for guidance and innovation. One efficiency improvement being implemented is pulling contracted work such as snow and ice removal back to state workers. Field staff and maintenance workers were able to get pay raises this year, so keeping more work within the Cabinet and allowing staff qualifications to cross over into multiple responsibilities aids in this call to efficiency. KYTC is looking ahead to the Road Master / Road Scholar program, and the ASHTO online training – all of these programs involve partnering with the Kentucky Transportation Center.

THOMAS NELSON, JR., FEDERAL HIGHWAY ADMINISTRATION

Next to speak was Thomas Nelson, Jr., from the Federal Highway Administration, KY Division. He attended the Everyday Counts summit in Baltimore where he looked at eleven cost savings initiatives the state would like to implement. With the upcoming change in Federal transportation leadership – starting today through inauguration – he will examine the USDOT Federal Highway program. Infrastructure will be the priority. The Fastlane program has begun, and the call for funding is out. There is \$850M available, although there is no date for when projects will be selected. The projects are chosen by the Secretary and given to Congress for review. Mr. Nelson described an asset management webinar that will take place with other state DOTs and stakeholders. The webinar teaches states to manage pavement and how to prioritize projects. The training covers a period of 10 years. A pilot program called LEAP is underway where federal aid is delivered directly to selected local public agencies.

LARRY HOLLOWAY, UK COLLEGE OF ENGINEERING INTERIM DEAN

Larry Holloway spoke next about the state of the college. He has been at UK since 1991, and was the chair of Electrical Engineering for 9 years. Enrollment is growing, with a total of 3900 graduate and undergraduates this year. 833 of those are Freshmen, including the Paducah campus. That enrollment number has doubled over the past 8 years. Dr. Holloway described models that put enrollment at 6000 students over the next 8 years, requiring investment in faculty, staff, and space. His goals for the college are to improve retention, rethink what the college is doing, and plan for growth. The center for student success opens next fall, along with a living-learning program where engineering students live in the same dorm and are mentored by upperclassmen and community engineers. Dr. Holloway would like to improve graduate enrollment by installing professional Masters programs that prepare for industry and government, not just academia. The Engineering Scholarship Program will continue.

SELF-INTRODUCTIONS

During introductions, Mr. Grayson suggested the development of a Transportation Safety Professional degree at UK. Jerry Pigman added to that by describing how other Civil Engineering graduate programs could lead into a Safety Program. Patty Dunaway sent thanks from Jason Siwula, who couldn't be present – he appreciates KTC's many timely deliverables. Thanks were also given by Dr. Noelle Hunter, who looks forward to future partnerships.

APPROVAL OF MINUTES FROM MAY ADVISORY BOARD MEETING

Patty Dunaway called attention to the minutes from the May 10, 2016 meeting and asked if there were any revisions. There was a motion to approve the minutes. The motion was seconded and passed with no dissenting votes.

THE STATE OF THE KENTUCKY TRANSPORTATION CENTER

KTC Director Joe Crabtree updated the board on the state of the Center, which included a staffing update and a 24-year financial history. He showed the latest organizational chart that represents the 115 employees and 7 faculty members. Expenditures for FY 2016 projects and sources of funding were provided. In 2016, KTC ranked 9th in project awards at UK.

Several key events have taken place since the last board meeting:

- Connected and Autonomous Vehicles conference in June
- Dean John Walz resigned and Larry Holloway was appointed in July
- Kickoff in July for SPR projects
- AASHTO Research Advisory Committee meeting—Joe Crabtree and Jason Siwula attended
- Transportation Research Board visit to KTC
- Kentucky hosted the Annual Meeting of ITS Midwest
- Every Day Counts Summit
- KTC is working with Jason Siwula to develop a research project tracking system

Dr. Crabtree gave an update on the re-application process to the federal University Transportation Centers (UTC) competition program. KTC participated in 7 proposals, serving as the lead applicant for two. KTC has never led a UTC but has participated in several over the years. Originally, the announcement was expected to be made in October, but there was a supplemental information request for all proposals, and December 4th is now the anticipated date for the announcement.

OVERVIEW OF KTC'S KEY ACTIVITIES AND INITIATIVES

CLARK GRAVES, ASSOCIATE DIRECTOR OF KTC

Clark Graves presented an update on the following research areas: Pavements, Materials, and Geotech; Construction Management; Bridge Preservation; and Structures.

1. Pavement Materials and Geotech—Brad Rister, Program Manager

- LIDAR is being used to measure bridge clearance heights. An interactive map shows the bridges, color coded by clearance heights.
- Forensic evaluations of pavement find moisture that can cause cracks. Moisture is detected with infrared or ground penetrating radar.



2. Construction Engineering Management–Tim Taylor, Program Manager

- The KYTC project closeout process was analyzed with the aim of closeout within 240 days. The team evaluated 3103 projects and found that acceptance to critical final release was the slowest part of the process. The best practices at other state DOTs were analyzed to find ways to streamline the process.
- A job safety analysis tool was developed to improve the safety performance of KYTC projects– this involved safety concepts for workers from an OSHA perspective and did not consider workzone safety. The team evaluated policy in other states and analyzed 3800 incidents. For each work task, the JSA provides information on the number and severity of incidents and mitigation/control techniques.

3. Bridge Preservation–Ted Hopwood, Program Manager

- Because bridge decks are high maintenance items for KYTC, the Center is investigating waterproofing membranes to protect and make the deck surface renewable. The team is analyzing cost, best locations for use, and application requirements.
- KTC is investigating methods to identify unknown steels that occur in about 200 bridges in Kentucky. The goal is to find a minimally invasive field test to identify the steel and the strength, making bridges easier to rehab and repair.

4. Structures– Issam Harik, Program Manager

- Carbon fiber fabric can be used to repair and retrofit deteriorated beams and pier caps on bridges. The team is testing the fabric on a bridge in Oldham County. They wrap the concrete and steel with the fabric to create strength. Since bridge repairs range from \$75,000 to \$80,000 repair, the carbon fiber method may be more cost effective. Another advantage: the bridge was open to vehicle travel during repair work.
- There were several comments about this project. JC Young and Patty Dunaway mentioned that with the decline of motor fuel receipts, there is less money for repair, so carbon fiber is a cost-effective option. Judge Moore asked the Center to present this info to cities and counties as a repair option for the Bridge Repair program. It was suggested that the KLC conference and Technology Transfer group can get this information out to the other counties.

DOUG KREIS, ASSOCIATE DIRECTOR OF KTC

Doug Kreis presented an update on the following research areas: Economics, Finance, and Multimodal; Technology Transfer; Project Development; Intelligent Transportation Systems;

1. Economics, Finance, and Multimodal–Bryan Gibson, Program Manager

- KYTC has 32 technical manuals, and finding the right information can be challenging. The team is working on proof of concept for an online Engineering Policy Guide. .
- Autonomous vehicles are being tested in certain cities, and the benefits will eventually bring them to Kentucky. Policy will be analyzed for conflicts that may occur during legislation and regulation of autonomous vehicles.

2. Technology Transfer–Martha Horseman, Program Manager

The Technology Transfer group presents many training sessions all over Kentucky. In 2015, over 8000 employees were trained, as KTC provided 1829 hours of training and over 300 training sessions during the year.

Programs highlighted were:

- Traffic Incident Management Program–4601 participants throughout the state
- Chainsaw Hands-on, FHWA Pilot for Maintaining Safer Roads, APWA State Conference, Pilot ADA Course, Horizontal Curve Alignment, Sign and Post Installation
- Safety Circuit Rider, Roads Scholar, and Road Master programs

3. Project Development–Jeff Jasper, Program Manager

- The Performance Based Flexible Solutions program goal is to “right size” projects and work with minimal highway funds.
- Project Management Bootcamp is an 8-day training designed for preconstruction engineers that teaches how to deliver projects efficiently and on time. 75 people were trained this year. KTC will conduct a 2-day version (Bootcamp Express) for consultants throughout the state. Ms. Dunaway added that PM Bootcamp Express will be a requirement for any consultants working with the Cabinet.

4. Planning Education–Reginald Souleyrette, Program Manager

- A process is being developed to inventory sidewalks and curb ramps across the state. This is part of KYTC’s ADA transition plan, where facilities that are not ADA compliant must be identified.

5. Intelligent Transportation Systems–Jennifer Walton, Program Manager

- The Kentucky Automated Truck Screening (KATS) system electronically identifies a commercial vehicle by its license plate and USDOT number. Use of the system has dramatically increased identification of unsafe and illegal trucks and drivers. To illustrate, the Driver Out of Service rate at 14 locations in Kentucky is 42%, compared to a national average of 5%. The KATS system also increases collection of revenue by making it more difficult for truckers to evade taxes and fees. Revenue collections have increased by 300% to 600% at KATS sites.

6. Traffic and Safety–Jerry Pigman, Program Manager

- The Highway Safety Improvement Program (HSIP) has been a core FHWA program to reduce fatalities and injuries. KTC provides data that supports measures such as cable barriers and rumble strips. HSIP is funded through FY2018.
- A statewide roundabout survey provided understanding of two-lane roundabouts with the goal to improve operation and safety of all roundabouts in Kentucky.

7. Special Programs and Initiatives

- Fedtrak is a risk management system for Tier 1 Highway Security Sensitive Materials, developed to meet the 9/11 mandate for TSA. Current research is complete and was presented to TSA in Lexington.
- KTC led the development of a Tier 1 Inland Waterway Transportation proposal for a UTC competition. The recipients of the UTC award are expected to be announced any day.

DEVELOPING THE CENTER'S VISION FOR 2022

After a break, Joe Crabtree gave a presentation on the Center's Vision for 2022. Dr. Crabtree plans to retire in 2022. Looking ahead, what should KTC preserve, and what should change by the time the transition to a new director occurs? He presented the results of facilitated sessions with KTC and Cabinet staff where 6 questions were asked:

1. What are the Strengths,
2. What are the Weaknesses,
3. How do we measure success,
4. What does KTC mean when people see it,
5. What's good about working at KTC, and
6. How does KTC provide value to the cabinet?

After compiling the results, Dr. Crabtree developed a draft vision statement before taking a visioning retreat in May 2016. He recorded his thoughts and created the vision statement that he presented at the meeting. Many of KTC's strengths emerged during this process.

1. Excellent research, testing, and analysis;
2. Outstanding training and technical assistance that attracts top students and develops leaders;
3. Flexibility when responding and adapting to clients' needs;
4. Emphasis on collaboration and partnerships, particularly with the Cabinet;
5. Excellent working relationships and work environment;
6. Motivated to solve problems;
7. Skilled at facilitating meetings;
8. Ability to tackle a diverse set of complex, large problems;
9. Knowledgeable and nationally recognized professionals, and
10. A resource for vetting new ideas.

However, several opportunities for improvement emerged:

1. Better internal communications,
2. Project management effectiveness varies,
3. Take on more work than can be done,
4. Marketing and visibility of our research program,
5. Administrative cost structure is a burden,
6. Employee incentives needed in the workplace environment,
7. Better internal I.T. capabilities,
8. Being at the University means space constraints and bureaucracy,
9. More focus on environmental research,
10. Expand client base outside of KY, and
11. Align KTC's research organization with KYTC's.

THE PROPOSED VISION

After synthesizing the results of facilitated sessions and the visioning retreat, the proposed KTC Vision 2022 would stress:

1. Integrity
2. Transparency
3. Excellence
4. Consistency
5. Accountability
6. Collaboration-



7. A one-stop shop for customers

8. A wonderful place to work

Dr. Crabtree then asked for comments about the vision statement.

MORE SPECIFIC QUESTIONS ON KTC'S VISION AND POTENTIAL GROWTH

Dr. Crabtree asked if it was good for KTC to continue to grow. How should the Center grow and how big is enough? There are space constraints and issues with covering administrative and support costs. It was mentioned that we should continue to improve the marketing effort if we hope to grow. Several attendees asked how this vision will include measurable goals for growth. The thinking is to develop these attributes—over time— into measurable goals.

The discussion led into developing a long term strategy on dealing with space. To grow, does KTC move off campus? Building a Transportation Research Building on or off campus allows the College of Engineering to grow. Looking at the administrative costs at UK and comparing to costs at other locations could allow the Cabinet to provide space. Emphasizing collaboration can reduce the need to hire full time staff. Currently, collaboration with engineering faculty helps with budgeting.

What should be the long-term strategy to cover KTC's administrative and program support costs? This topic generated excellent discussion.

OPEN DISCUSSION

Patty Dunaway opened the floor for a time of open discussion.

Mr. Rayan and Mr. Holmes discussed the planning of areas surrounding the road being built. Will KTC get involved in future planning of the built environment around the road? Are there plans to collaborate with other engineering areas or think outside the box on other aspects of project development? One important point: the future of commerce is online. Building infrastructure focused on transitioning modes – from air to surface to rail – will be important for the purpose of just-in-time delivery of goods.

There was a question on what financial support KTC receives from UK and from the Cabinet. Dr. Crabtree described where the Center's administrative funding comes from. Because UK is risk averse, branching out for customers must be handled carefully. Some practices are difficult as a standalone agency; for example: hiring and subcontracting.

The Kentucky National Guard was mentioned as a potential client for research. That brought more discussion about opportunities for KTC to partner with private companies, i.e. Ford, Toyota. Dr. Crabtree has reached out to Toyota regarding autonomous vehicles, but their focus in Kentucky is on manufacturing. He has gone through local contacts but would need to reach out to headquarters. He would like to explore the opportunity for private funding.

This brought up the aspect of KTC's identity: should the focus be on doing a few things well or on covering all facets of transportation?

At the end of this discussion, the meeting was adjourned.

APPENDIX A: STATE OF THE CENTER

