



Tentative Agenda

- 8:00 a.m. Sign In starts
- 8:30 a.m. Class begins and Introductions
- 8:45 a.m. Drainage law and Drainage areas
- 9:30 a.m. Runoff & other factors affecting culvert sizing
- 10:00 a.m. Break
- 10:15 a.m. Common sense sizing of culvert replacements and when you need an engineer

- 10:45 a.m. Culvert types and materials
- 11:45 p.m. Lunch (provided)
- 12:30 p.m. Installation, bedding, and backfill
- 1:15 p.m. Causes of culvert failures
- 2:00 p.m. Culvert rehabilitation and lining
- 2:30 p.m. Break
- 2:45 p.m. Environmental issues and permits
- 3:30 p.m. Culvert management and inspection options
- 3:45 p.m. Wrap up-Questions and Answers
- 4:00 p.m. Workshop Concludes

Instructor: Norman Bowers, P.E., L.S. Local Road Engineer

Norm has spent almost his entire career in county road work. He worked for Marion County from 1972 to 1976. He was Coffey County Engineer from 1982 to 1987. He worked for Johnson County from 1987 to 2006, and was County Engineer in Johnson County for 10 years and retired in September 2006. Norm is a Registered Land Surveyor and Professional Engineer. He was President of the Kansas Society of Land Surveyors in 1981 and President of the Kansas County Highway Association in 2000 and 2002. Norm is currently working part time with the Kansas Association of Counties as Local Road Engineer.

University of Kansas
Transportation Center
1530 West 15th Street, #2160
Lawrence, Kansas 66045

Culverts & Drainage

Kansas LTAP
Spring 2012

A program of the KU Transportation Center • www.ksltap.org

**A Kansas Road Scholar
Level I Technical Skills Program required course.**

**March 6, 2012
Dodge City**

**March 7, 2012
Newton**

**March 8, 2012
Manhattan**

**March 9, 2012
Olathe**

Registration Deadline: February 28, 2012

This training is presented through the Kansas Local Technical Assistance Program (LTAP) at the KU Transportation Center. Funding provided by the Kansas Department of Transportation, the Federal Highway Administration and the University of Kansas.






Course Description: This one day workshop includes the basics on drainage and selecting, sizing, and installing culverts. Items covered will include drainage law in Kansas as it relates to back water and changing the natural drainage pattern, Factors that affect the amount of runoff and the sizing of culverts, and using common sense in culvert sizing. Information will be provided on the types of culvert products available, including pros and cons of the various products, and proper installation techniques. Common causes of culvert failures will be discussed as well as culvert rehabilitation and lining. Work around streams is regulated by environmental agencies so environmental issues and permitting will also be discussed.

Intended Audience: This workshop is designed for maintenance crews, foremen and supervisors who have responsibility for providing and maintaining smaller drainage facilities along rural roads and city streets. This includes county and city engineers and road supervisors, technicians and road crew members, township trustees and State staff who have drainage responsibilities. Elected officials are also welcome to attend.

Registration: The registration fee is \$65, (if registration is received by deadline); \$75 (after registration deadline), and includes lunch, breaks, and workshop materials. To register, complete the registration form, attach the required fee (payable to the KU Transportation Center). You may mail in your registration to 1530 West 15th St, 2160 Learned Hall, Lawrence, KS 66045 , fax your registration to 785-864-3199, attention: Kristin, or register online at <http://www.ksltap.org> - go to the training calendar, click on the workshop you wish to attend. Only the registration needs to be submitted by the deadline to avoid the higher registration fee, payment can be sent in later.

 For more information contact Kristin Kelly at the KU Transportation Center, 1-800-248-0350 or 785-864-2594. Email: kbkelly@ku.edu

Dates and Locations. Once you have registered, you will be sent a confirmation approximately 2 weeks prior to the workshop date.

March 6 • Dodge City
Sheridan Center
240 San Jose

March 7 • Newton
Meridian Center
1420 E. Broadway Ct.

March 8 • Manhattan
Riley County Public Works
6215 Tuttlecreek Blvd.

March 9 • Olathe
Ball Conference Center
21350 W. 153rd Street

Overnight Accommodations.

Hotel reservations must be made by the participant. If you have any accommodation questions call the Transportation Center at 1-800-248-0350 or 785-864-2594.

Assistance for Participants with Disabilities/Special Dietary Requirements.

The KU Transportation Center is committed to accommodating persons with disabilities and those with special dietary needs. Please call our office or mark the registration form. To assure assistance, please register at least 10 days before the workshop you plan to attend.

Refund Policy: The registration fee is refundable if notice of cancellation is received 48 hours prior to the start of the program. Registrants who are unable to attend and do not cancel in advance are subject to the registration fee. Substitutions may be made at any time. Please notify us of changes.

2012 Culvert & Drainage Registration Form

Name _____

Title _____

Agency _____

Address _____

City _____ Zip _____

Phone _____ Fax _____

Email: _____

Please indicate the workshop you wish to attend.

- March 6, Dodge City March 7, Newton
- March 8, Manhattan March, 9, Olathe

Registration Fee: Please submit registration by the deadline. The payment can be sent later.

Early: \$65/per person (by February 28, 2012)
Regular: \$75/per person (after February 28, 2012)

Please make check payable to the KU Transportation Center.
 Enclosed To Follow Bill My Agency

Mail to:
Kristin Kelly, KU Transportation Center
1530 West 15th Street, #2160 Learned, Lawrence, KS 66045
Or fax to: 785-864-3199, attn: Kristin;
or register on the web at <http://www.ksltap.org>

Registration Deadline: February 28, 2011

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