



Kentucky Section - Louisville Branch

Indiana Section - Southwest Branch

2009 Report Card

For

Kentuckiana's Infrastructure

Covering Metropolitan Louisville and Southern Indiana

May 11, 2010

2010 Kentuckiana Infrastructure Report Card Committee

Ted Niemann, PE
Chairman KIRC Committee
Elizabeth Niemann & Associates, Inc.
3703 Taylorsville Rd, Suite 102
Louisville, KY 40220

Vicki Coombs, P.E.
Louisville and Jefferson County
MSD
700 West Liberty St.
Louisville, KY 40203-1913

Heather Dodds, E.I.T
University of Louisville
J. B. Speed School of
Engineering
University of Louisville
Louisville, KY 40292

Jennifer Gora, P.E.
HNTB Engineers
401 West Main St.,
Suite. 601
Louisville, KY 40202

Jim Hagerty, P.E.
Gresham Smith and Partners
101 South Fifth St.,
Suite 1400
Louisville, KY 40202

Jeremy Kubac, P.E.
Gresham Smith and Partners
101 South Fifth St.,
Suite 1400
Louisville, KY 40202

Matt Newman, P.E.
HDR Engineers
401 West Main St.,
Suite 500
Louisville, KY
40202-2936

Tom Rockaway, Ph. D., P.E.
University of Louisville
J. B. Speed School of Engineering
University of Louisville
Louisville, KY 40292

Ray Rush, P.E.
Stantec
1901 Nelson Miller Parkway
Louisville, KY 40223-2177

Billy Sexton, P.E.
Engineer
6001 Rodes Court
Louisville, KY 40222

Terry Sullivan, P.E.
U.S. Corp of Engineers
Louisville District (CELRL-PA)
P.O. Box 59
Louisville, KY 40201-0059

Jerry Vandavelde, P.E.
GEM Engineering, Inc.
1762 Watterson Trail
Louisville, KY 40299

Albert Zimmerman,
P.E.
QK4 Engineers
815 West Market St.,
Suite 300
Louisville KY 40202

ACKNOWLEDGEMENTS

The group of volunteers listed on the previous page dedicated many long hours of their time to gather information, analyze the data and write a summary of the condition of infrastructure in the Kentuckiana area. The effort was doubly difficult in that the region is comprised of two states with significantly different structures for managing and regulating the many components of the areas infrastructure. Generally, this was the first time this group had gathered and analyzed this type of data. Efforts were made to mirror the national report card, but those efforts were limited by available data, data formats, and time. Full time jobs and life's schedule took their toll on our schedule. We have persevered, for that I am grateful to our group of committee members and the volunteer reviewers that help point out shortcomings of our report.

The efforts of the Report Card Committee (see previous page for listing) were also supported by numerous individuals and organizations that were not part of the Kentuckiana Infrastructure Report Card Committee. Significant in-kind contributions were provided by: Elizabeth Niemann & Associates, Inc.; G.E.M. Engineering; Louisville and Jefferson County Metropolitan Sewer District

Numerous individuals in these organizations and state government provided valuable reviews and input to the *2010 Louisville Metro - Kentuckiana Infrastructure Report Card*. Some noteworthy contributions from the association leadership include those by Dr. Mark Vanenzuela, PE (U. of Evansville and SW Indiana Branch VP), Mr. Larry Chaney, PE (KIPDA), and Chris Keil, P.E. (Strand Assoc. and Louisville Branch ASCE). Others that provided review and input on various issue briefs were: Barry Barker (Exec. Dir. – TARC); Peggy Hagerty Duffy, P.E. (Hagerty Engineering, Inc.); Steve Durrett, P.E.; Bart Giesler (Exec. Dir. Aviation Assoc. of Indiana); Mark Johnson, P.E. (Louisville MSD); Jeff Pratt, P.E. (KY Div. of Waste Mgmt.); Karen Scott, P.E. (Louisville Regional Airport Authority); Marilyn Thomas, P.E. (KY Div. of Water); Michelle Weddle (IN Dept. of Envir. Mgmt.);

EXECUTIVE SUMMARY

KENTUCKIANA INFRASTRUCTURE REPORT CARD FOR THE LOUISVILLE METROPOLITAN AREA

Every day Kentuckiana infrastructure directly affects your life – from the roads you drive on to the trash you discard. Civil engineers are responsible for planning, designing, constructing and maintaining these infrastructure networks. Civil engineers have the task of ensuring that the lights will turn on; roads will carry us safely to our destination; and clean water is available when we turn on our faucets.

Founded in 1852, the American Society of Civil Engineers (ASCE) represents more than 146,000 members of the civil engineering profession worldwide. ASCE released its 2009 *Report Card for America's Infrastructure* in January 2009. The *Report Card* assigned the nation's infrastructure a cumulative grade of D and estimated a five-year investment need of \$2.2 trillion. The *Report Card* evaluated 15 infrastructure categories, including aviation, bridges, dams, drinking water, energy, hazardous waste, inland waterways, levees, public parks and recreation, rail, roads, schools, solid waste, transit and wastewater. It assigned grades to the different areas of infrastructure similar to a school report card that assigns grades by subject.

The Louisville Branch of the Kentucky Section of ASCE and the Southwest Indiana Branch of ASCE took on the task of preparing a similar report for infrastructure in the Louisville metro area. Twelve civil engineers served on the Kentuckiana (Louisville Metro) Infrastructure Report Card (KIRC) Committee.

It is not the intention of this Report Card to assign blame to any group for any infrastructure area that has earned a low grade. The purpose of this report is to document the findings and evaluations of the condition of the region's infrastructure systems and bring public attention to the need for investing in our infrastructure.

The following Report Card and issue briefs for each category were prepared by the KIRC Committee using existing public documents for the various categories. Information was reviewed for counties on both sides of the Ohio River that comprise the Kentuckiana region.

Each category was evaluated on the basis of condition and performance, capacity versus need, and funding versus need. Whether or not future funding was expected to increase or decrease affected the grades. The grades indicate that the region as a whole is performing marginally better than the nation. However, all areas of Kentuckiana public infrastructure are in need of immediate and continued investment.

The category flood protection/flood plain management was added to the KIRC, which is slightly different in scope than the levees category from ASCE's 2009 *Report Card for America's Infrastructure*. The flood protection/ flood plain management category for Kentuckiana included discussion of how the area behind the levees are managed to protect life and property.

The 11 categories of infrastructure reviewed and their grades are summarized on the following pages. The effort required the Committee to gather information from two states and develop a method to compare the data. Data is not gathered or recorded in the same way for both states. It became obvious that data gathered to report to national agencies was similar, however, data gathered for state or local use was tailored to the receiving agency's use.

It is evident that much more needs to be done to ensure that Kentuckiana's infrastructure can support current and future public demands. There are many steps that you, as an individual, can do to help improve our infrastructure. As outlined in the ASCE *Renewing America's Infrastructure: A Citizens Guide*

Be an informed citizen. Learn about your community's infrastructure needs. Get to know your legislative representatives and discuss your concerns with them.

Demand continuous maintenance. If roads, bridges and other infrastructure systems are not maintained, they cannot support the level of service they were originally designed to handle. Regular maintenance prolongs life and minimizes the need for costly repairs.

Think long-term. Renewing the region's infrastructure is an ambitious goal and cannot be accomplished overnight. Furthermore, the facilities built today must last for decades to come.

Comprehensive planning and long-term investments are keys to sound decision making. It is imperative that we realize that infrastructure is a public asset and we all have a stake in its upkeep and operation. We all share in the cost of capital investments and maintenance. We need to treat infrastructure as an investment and demand the best returns.

In issuing grades, the KIRC Committee used a grading system based on percentages since much of infrastructure data is reported in percentages. Grades have been assessed based on the percentages of infrastructure in good condition or better using the following scale:

- A = 90 – 100% (Exceptional)
- B = 80 – 89% (Good)
- C = 70 – 79% (Fair)
- D = 41 – 69% (Poor)
- F = 40% or lower (Inadequate)

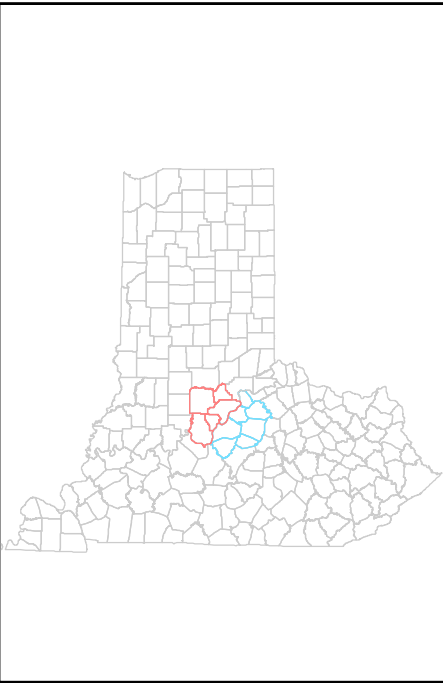
If more than one category is considered in an issue brief, then the percentages are weighted based on relative importance to one another in the opinion of the committee. For instance, in the Roads issue brief pavement condition and congestion are used as metrics for grading our areas roads. The grades are then evaluated against a subjective assessment based on funding that has been budgeted to address the problem and whether the budget is expected to increase or decrease in the near future.

The issue briefs and grades have been developed based on a regional assessment.



This report card is a high level view of Kentuckiana infrastructure. Evaluation of the infrastructure at a community level was not performed. An evaluation of a community's infrastructure would require an "infrastructure audit" which is a more in-depth analysis to determine if it meets current and future community needs.

Lastly, the KIRC Committee hopes you will use this information to encourage and support the maintenance and upgrading of Kentuckiana's infrastructure.

Louisville Metro Study Area for 2009 Kentuckiana Infrastructure Report Card



Legend

-  Indiana
-  Kentucky

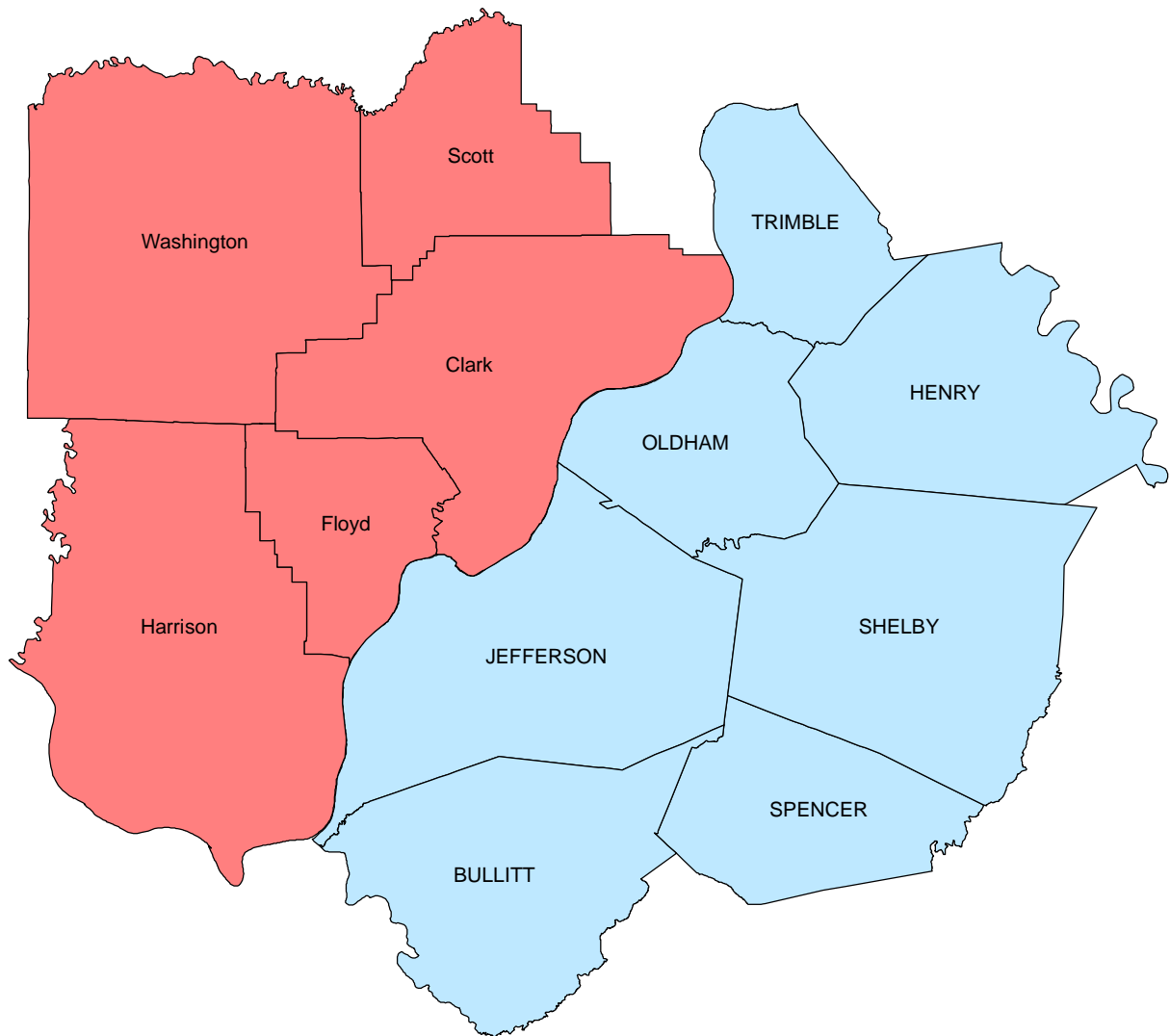


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Subject	2009 US Grade	2010 Kentuckiana Grade	Comments
Aviation	D	B-	There are 46 land based airports in the 12 county study area. Only one provides both air carrier service and general aviation services. Federal funds account for the largest portion of funding, state and local funding lag behind needs.
Bridges	C	D	In the study area there are a total of 2020 bridges. Of those bridges the Indiana counties have 154 that are either structurally deficient or functionally obsolete. The Kentucky counties have 571 bridges that are either structurally deficient or functionally obsolete. Most Indiana counties fund bridge repair and replacement through a cumulative bridge fund. Kentucky funding comes from the county bridge replacement program and is less than adequate with only 10 bridges replaced each year – statewide.
Dams	D	D	None of the dams in this regional Report Card evaluation were considered unsafe or in imminent danger of failing. However, a significant increase in the number of High Hazard Potential dams has occurred due to downstream development. Nearly \$100 million in needs have been estimated to remediate High Hazard Potential and deficient dams. Reduced funding from multi-year budget cuts has resulted in a significant need for more staff and resources to conduct training and perform inspections on a timely basis. To meet the recommendations included in this report, annual funding increases totaling \$500,000 per year are required.
Drinking Water	D-	C+	Kentuckiana is served by 51 water utilities in the 12 county study area. With the Ohio Rivers McAlpine pool the area raw water supply is abundant. Only 2.2 percent of the residents in the study area are without access to a community potable water supply. Investment needs for our area are just under \$230 million. Getting water to those without and improving service to those who do not have adequate service will protect the health of our community over the long term.
Energy	D+	B-	The Kentuckiana region is served by eleven electric utilities and 5 gas utilities. Rates are just under the national average in most categories. Investment in additional base load capacity and education on conservation and energy efficient building and renovation practices. With easy access to coal the regions utilities can produce adequate supplies of inexpensive energy. As the energy landscape changes the areas power utilities should seek out ways to take advantage of clean technologies.
Flood Protection / Flood Plan Management		C+	Much of the development of the area may be credited to the Ohio River and the Falls of the Ohio. Area communities have used the river as a tool to build our economy and battled it to protect the property and people the development required. Protecting the area from flooding and backwater damage began in 1948 and the most recent project being completed in 2008. Subsequent to Hurricane Katrina in 2005 the Corp of Engineers revised their process for levee and floodwall inspections. All levees and walls in the Kentuckiana area are classified as “minimally acceptable” with the exception of the newest project that has yet to be inspected. Despite major funding challenges local sponsors are paying attention to the needed maintenance and rehabilitating the older pump stations and walls and levees.
Inland Waterways	D-	B	The McAlpine Lock and Dam provides the path around the only navigational barrier that exists along the Ohio Rivers length. The Ohio river is the only navigable waterway within our 12 county study area. In 2005 57 million tons of commodities ship through McAlpine with a value

			of \$11.7 billion. The recent completion of a major renovation of the McAlpine locks provides hundreds of millions in transportation benefit. Maintenance of the older lock, the dam and continued dredging of the channel will routinely be required to maintain river traffic flow through our area.
Roads	D-	D	Growth of congestions and delays in Kentuckiana has outpaced similar growth in metro areas of similar size. Dedicated funding and prioritization of projects will help ease congestion and promote economic development. Another metric of our areas roads is pavement condition. Poor pavement conditions in our area results in motorists paying an additional \$391 in vehicle operating costs per year. Both Indiana and Kentucky are underfunded for projects identified within our study area. Individual counties are in similar, if not worse condition. The area will face huge challenges meeting required levels of service if funding levels are not improved.
Solid Waste	C+	C+	In 2007 the area produced 1.9 tons of solid wastes per person. The amount of waste is increasing although recycling is on the rise. Recycling accounts for nearly one third of the total waste stream for the area. These programs are funded by fees assessed on tons of waste disposed at landfills. Historic landfills, illegal dumps and litter continue to tax the communities in our study area. Increased education and reduction of waste through recycling should be stepped up in order to maximize the life of existing landfills in the area.
Transit	D	D+	Public transit has been available in the urban portions of our study area since the mid 1800's. With the advent of the automobile the utilization has fallen and has made only a minor comeback with the recent increase in gas prices. Light rail had been studied in the past but dropped from long range planning due to the areas inability to demonstrate financial support. TARC, the area's largest public transit provided is in need of \$83 million to replace its aging fleet of buses. The Kentucky counties in our study area should look for a method to provide dedicated funding to mass transit much as Indian currently does. Public education and awareness should be raised to encourage cost effective use of public transit as an alternative to the automobile.
Wastewater	D-	C-	There are 69 wastewater facilities that serve the Kentuckiana region. More stringent rules are being implemented annually taxing the utilities ability to fund required maintenance and operation costs. Kentuckiana has identified over \$8 billion in improvements related to collection, treatment, I & I and CSO elimination. In the Indiana counties 91 percent of the funding needs are earmarked for CSO elimination. In Kentucky, 11 plants are nearing their hydraulic capacity and are restricted from making further connections to their system. Expansion of service into less urban areas of Kentuckian will require more federal and state funding to service the current and future population. Many of the wastewater utilities in the area do not have funding sources for maintenance of existing infrastructure and improvements necessary to meet current and future water quality regulations.
Infrastructure G.P.A.	D	C	
A=Exceptional; B=Good; C=Fair; D=Poor; F=Inadequate			
Each category has been evaluated on the basis of condition and performance, capacity versus need, and funding versus need.			