

January 8, 2012

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**Re: Comments by, Clarence H. Hixson, attorney
on the Supplemental Draft Environmental Impact Statement- SDEIS**

Supplemental Draft EIS, page 5-114, Environmental Consequences

*“FHWA does not believe it is informative at this point to consider greenhouse gas emissions in an Environmental Impact Statement (EIS). The climate impacts of GHG emissions are **global in nature**. Analyzing how alternatives evaluated in an EIS might vary in their **relatively small contribution** to a global problem will not better inform decisions. Further, due to the interactions between elements of the transportation system as a whole, emissions analyses would be less informative than ones conducted at regional, state, or national levels. Because of these concerns, FHWA concludes that we cannot usefully evaluate GHG emissions in this EIS in the same way that we address other vehicle emissions.”*

Comment 1

National Weather Service records show 2011 was the **wettest year on record** for Louisville since 1872 with 68.02 inches recorded at Standiford Field. It was the rainiest March 1st to May 31st on record with 26.95 inches. April was the single rainiest month in Louisville with 13.97 inches. There were an all time record, 24 tornadoes on the 19th and 20th of April in the area.

“2011 was quite an active year weather-wise across southern Indiana and central Kentucky. Aside from record or near record rainfall, we surveyed 61 tornadoes for the year. This total more than doubled our previous **record number of tornadoes**, which was 30 set in 2008.” April and July 2011, were the 5th and 2nd **warmest average temperature months on record** in Louisville.

Scientific American editor Lee Krump noted on June 29, 2011 in an article, “The Last Great Global Warming” that, “we now pump about nine billion tons of carbon into the atmosphere each year and with the changes coming in rapidly developing countries like China and India the amount could reach 25 billion tons . . . Modern **global warming is the fastest based on the record** with a change of 1-4 degrees C/100 years. The rate of warming will be 40-160 times the rate in the P-E era.” (Paleocene-Eocene era around 55 million years ago).

In a planning period when urban planners should be controlling investment and design of urban transportation infrastructure to install long term sustainable, low carbon emission, mass transportation facilities that will encourage greater public use, the FHWA as lead agency, continues to foist a budget busting, low efficiency, high carbon emission, single occupant vehicle (SOV) project—the modified selected alternative, on the public.

Though the FHWA plan to harness Louisville’s future to expensive single occupant vehicles is a small part relative to China and India of global greenhouse gas emissions, the

responsibility of better informed people is to take local actions to reduce carbon loading to the atmosphere. FHWA sets a terrible example for U.S. citizens when it takes the position that, “no one else is stopping greenhouse gases, so we won’t either.” The local public should make informed decisions on the range of alternatives based on factual analysis of GHG loadings. Our responsible actions could be an example for China and India.

The SDEIS fails to meet the level of analysis required by the NEPA Act. The SDEIS is required by 40CFR 1502.9(c)(1)(i), SDEIS, Page S-1. Subpart (ii) also requires analysis of significant new information by the agencies. In relevant part, 40 CFR 1502.9(c)(1) provides:

(c) Agencies:

(1) Shall prepare supplements to either draft or final environmental impact statements if:

(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or

(ii) **There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.**

Significant new circumstances and information relevant to environmental concerns that have not been integrated into the SDEIS require analysis.

Changing global climate calls for a reassessment of low emissions alternatives for reducing bridge congestion and provide connectivity to give greater weight to longterm sustainability in Louisville’s transportation program. EPA recognizes the changing climate change drivers, but aims too low in only suggesting minor design changes to the inefficient, sprawl inducing highway alternative.

Appendix C.6 Agency Comments June 30 2011 EPA letter to Ms. Janice Osadcuk Team Leader, Environmental Services U.S. Department of Transportation Federal Highway Administration from Heinz J. Mueller, Chief NEPA Program Office, page 5

“Due to potential increased severity and intensity of precipitation events due to climate change, the SDEIS should identify and evaluate impacts to the proposal and any proposed design measures that could be undertaken to reduce impacts. This might include, but is not limited to, identifying how proposed tunnels, bridges and stormwater treatment areas might be designed to accommodate increased floodwaters and treat stormwater runoff and/or inadvertent hazardous materials spills during such events. This assessment should also include impacts to proposed smaller bridges and/or culverts associated with the project’s smaller stream crossings (e.g., Harrods Creek, Beargrass Creek, on the Kentucky side and other streams on the Indiana side, including intermittent and headwater streams).”

Where recognition of new circumstances in rapid climate change must be applied is selecting between a plan to provide bridge capacity for 226,000 vehicles or more, many that are single occupant commuters, or to build an urban mass transportation project to reduce bridge congestion by using fewer, higher capacity vehicles with lower overall emissions for commuters. The elimination of the mass transportation alternative in conjunction with park and ride multi-modal centers, is arbitrary, not based on substantial facts, and an abuse of discretion.

Substantial numbers of daily trips can be eliminated from current bridges, and congestion and bridge capacity increased by removing single occupant vehicle - SOV traffic, by selecting immediate bus transportation incentives with short term impact, combined with long range light rail planning in conjunction with other projects such as multi-modal centers.

F.11

KIPDA, which provides staff support for the Louisville MPO, prepares socioeconomic (population and employment) forecasts for the LMPA, which are incorporated into Louisville MPO's travel demand computer model to estimate current and future travel demand within the area. Those regional travel demand conditions help to predict future travel conditions and the needs of the transportation systems; and, ultimately, to evaluate potential solutions to the identified transportation needs.

Supplemental Draft EIS, 2-5 Purpose and Need

Comment 2

New circumstances in regional planning

“Over the next 18 months, a detailed business plan will be developed for a new super-region that will stretch from Louisville to Lexington. Businessman Jim Host, who recently wrapped up work overseeing development of the KFC Yum Center in downtown Louisville, will lead the project.”

August 12, 2011, Beverly Fortune, Lexington Herald Leader, Mayors of Lexington and Louisville team up on initiative to boost jobs.

It is foolish to pre-empt the analysis of transportation projects needed for regional linkage by committing all available resources to the modified alternative 2-bridges project before the goals and objectives of this regional planning have been presented.

KIPDA no longer functions as a transportation planning agency using a range of urban transportation alternatives to form a sustainable future. Instead, it is led by special economic interests that are building ring growth empires at long distances from the Louisville urban core, which KIPDA then adopts new highway capacity projects to serve. The dollar, not KIPDA, is planning the sprawl city of tomorrow.

“The cross-river travel demand is modeled to increase 29 percent from 2010 to 2030. By 2030, a total of 292,000 vehicles per day are expected to cross the three existing roadway bridges, representing a 29 percent increase over 2010 levels (an increase of approximately 1.3 percent per year). By 2030, the Kennedy Bridge, which already is nearly at its design capacity (97 percent of capacity in 2010), will be expected to handle 123 percent of its capacity, resulting in extreme congestion. Other existing Ohio River bridges will experience similar capacity issues.”

Louisville's tax base is being harnessed to pay for the development of a new city clustered around the River Ridge development east of Utica Indiana. The benefits to west Louisville Title VI tax payers are nil, since they cannot timely get to River Ridge to enjoy the employment there. Soon, the Louisville tax base may be harnessed to pay for improvements in Shepherdsville and Shelbyville under similar regional arguments.

After the two bridges Modified Selected Alternative is funded with bonds, tolls and federal grants, the Cochran Hill tunnels will be identified as a bottle neck to regional freight hauling and a project to widen I-64 through Cherokee Park may be required.

See Bluegrass Economic Advancement Movement

<http://www.commercelexington.com/chamber/bluegrass_economic_advancement_movement.aspx>

The 2000 CTPP data indicated that within a 50-mile radius of the LMPA, more than 48,700 people commute from outside communities into the LMPA. Conversely, almost 12,300 workers commuted from the LMPA to outside communities.

Supplemental Draft EIS, Page 4-5, Affected Environment

Comment 3

New circumstances in our understanding of bridge use

Appendix H.3., Wilbur Smith Associates, Phase II Traffic Model Study graphically demonstrates that a large percent of this bridge traffic comes from morning commuters from Indiana, coming to work in Louisville and returning there in the evening. There are clear peaks of traffic volume in the am southbound from Indiana and northbound in the pm. See the graphs below.

The pass through of external to external trucks and cars shown on Page 53 shows this is a relatively smaller component of peak time bridge congestion:

Table 3.37: LSIORB Heavy Vehicle External to External Trips 17,647

Table 3.32: LSIORB Passenger Vehicle External to External Trips 12,493

This pass through traffic is a volume of traffic easily handled by current bridge capacity. The problem causing congestion is the SOV vehicles in large numbers making short commutes. Large numbers of 3,000 to 5,000 pound single occupant vehicles are wasting fuel and loading carbon monoxide in the morning and evening commute.

Figure 4-6: I-65 Bridge Hourly Distribution (I-65)

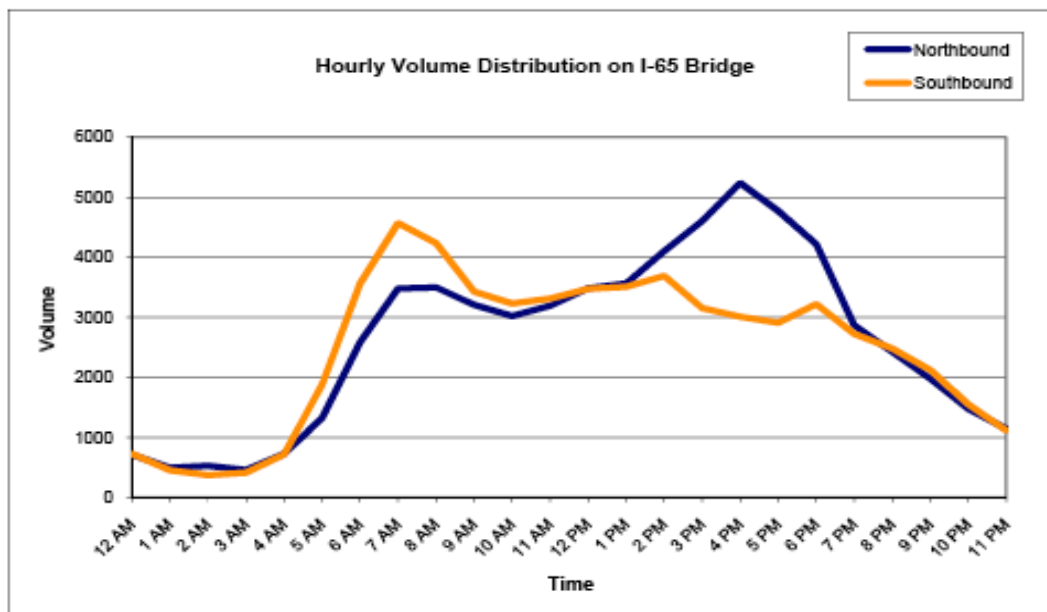
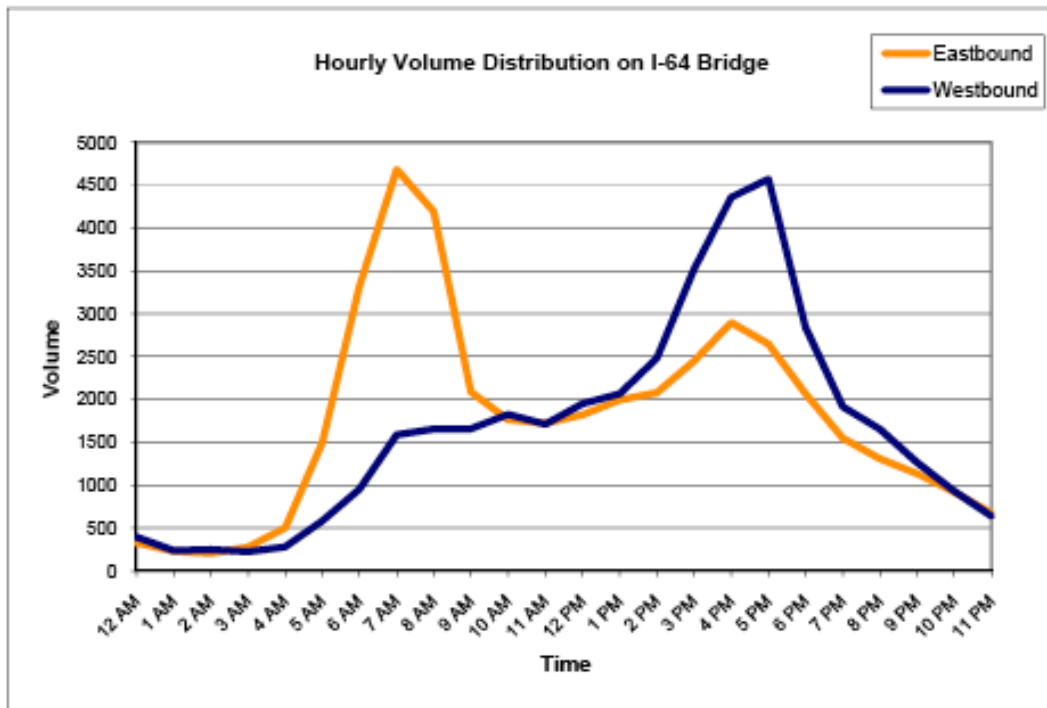


Figure 4-7: I-64 Bridge Hourly Distribution (I-64)



These [mass transit] alternatives would not meet the purpose and need because they would not improve the geometrics of the Kennedy Interchange and Kennedy Bridge to . . . recommended minimum design guidelines to meet the project's identified safety needs, and they would not provide a cross-river connection in the east end to provide the needed system linkage. In addition, while these alternatives may yield some operational benefits, they are highly unlikely to have any significant impact on reducing vehicle hours of delay (VHD) in the Louisville Metropolitan Area (LMA). Consequently, these alternatives do not meet the need to improve inefficient mobility in the LMA.

They would not improve the level of service (LOS) on the Kennedy Bridge to LOS D or better; would not allow cross-river bridge demand to be met on the Kennedy Bridge during peak periods; and would not improve the Kennedy Interchange operating speed during the peak hour to address the need to improve traffic congestion.

For all of these reasons, these alternatives do not meet the purpose and need of the project and are not reasonable alternatives. Therefore, they have been dismissed from further analysis as stand-alone options.

Supplemental Draft EIS 3-3 Alternatives

Comment 4

New circumstances in amendments to the Horizon 2030

C.7

This commuter relationship with Southern Indiana is best addressed by designing a mass transit

project focused on reducing AADT of SOVs. KIPDA appears to recognize—too late(?) that regional sustainability stems from designing urban growth to accumulate around low emission, high efficiency mass transportation corridors that reduce VMT, instead of allowing outer ring sprawl development to create a cluster of urban centers by default as companies seek cheap rural land to develop and escape urban design regulation. **Cross river bus ridership is calculated to make up .142 %** of vehicles crossing the I-64 and 31-W bridges. (31 daily trips, I-64 and, 117 trips on 31-W with a total of 1,772 average daily passengers out of AADT of 82,000 I-64 bridge and 21,000 31-W bridge). SDEIS Purpose and Need 2-4. A robust mass transit program would remove commuter vehicles and improve LOS and reduce VHD.

To commit \$ 2.9 billion dollars now without integrating a light rail plan would preclude future investment in a better plan tailored to our understanding of daily traffic patterns. It controverts the project KIPDA has added in the amended Horizon 2030:

No KIPDA ID : TARC Add project to Plan, Public Transportation Now and In the Future 2013 Open to Public budgeted \$1,125,000.

“Develop a Comprehensive Operational Analysis (COA) for the TARC system/service area and make recommendations for immediate and long-term public transportation improvements. The outcome and recommendations of the CO Analysis should include appropriate measures to:

- *maximize existing bus service efficiency*
- *improve communications and build community partnerships that will support strong public transportation system in the Louisville Metro Region today and in the future*
- ***develop plans for implementing major transportation corridors that will spur development, generate investments and support economic growth at the local and regional level. Major transportation corridors should integrate all modes of transportation with enhanced public transportation service.***”

*Impact on AQ Analysis: **Not regionally significant at this time - results may provide regionally significant amendments.***

In, Appendix F.7. Report on Comments on range of alternatives – TARC Comments:

*“TARC is pleased that the document states that a range of alternatives including mass transit from the 2003 FEIS will be reevaluated to determine if they warrant detailed study as viable alternatives. **The potential for enhanced bus service and mass transit to help address the project's purpose and need as part of any selected alternative deserves careful consideration especially in light of plans to scale back the project and to rely on tolls to help cover the costs....** Planning, design, construction and funding for enhanced bus service should be incorporated in the project's development/traffic maintenance plan and should be part of the completed project. Specifics to be addressed include:*

- *...ensuring that turning radii, lane widths and other project features meet design criteria to accommodate buses;*
- *...establishment of permanent **park-and-ride facilities** in final construction contracts...*
- *...express and shuttle bus service during construction...*
- *...improved and/or new bus stops, shelters, benches, sidewalk access and pull-off areas for buses...*
- *...an aggressive public information campaign and...use of emerging technology to communicate with the public about public transportation service and arrival times of buses.”*

In the same document, EPA Comments page 8 - 9

*"We agree that the Travel Demand Management (TDM), Transportation System Management (TSM), and **Mass Transit Alternatives have some potential to improve the transportation system**... The DSEIS should clarify the extent that the currently proposed modification to the Selected Alternative will include these elements..."*

The \$ 1 million dollar KIPDA study could provide regionally significant increases in ridership while supporting economic growth and investment along major transportation corridors. This KIPDA Plan amendment funded at just .038 % of the modified alternative deserves consideration against the range of alternatives **before** billions are irretrievably committed to the modified alternative.

Daily trips, daily miles traveled, daily hours of delay and toxic emissions are all lowered when mass transportation alternatives replace single passenger automobile cross river commuter traffic. The dismissal of mass transportation alternative by FWH was arbitrary, and an abuse of discretion, when the Horizon 2030 plan includes a project to evaluate the potential for mass transit to increase ridership in a regionally significant amount.

In a paper supported by TARC and National City Bank (now PNC) titled:

Transportation Financing Issues in Louisville and Jefferson County

by Paul Coomes, Ph.D. (Professor of Economics and National City Research Fellow) Barry Kornstein (senior research analyst) University of Louisville, dated April 2003, the authors observed:

"Five of Louisville's competitors have a light rail system underway, and two have plans under review.

"Louisville also is a net loser in the competition for mass transit dollars nationally. TARC typically receives around \$8 to \$10 million in federal money annually, all for bus-related expenses. However, the Louisville area has received none of the \$8.2 billion in 'new starts' money allocated by Congress since 1998 for light rail, commuter rail, and other fresh mass transit projects. These dollars, partially collected from Louisville area commuters and taxpayers, are being spent on projects around the US, including several of Louisville's prime competitors."

... Over \$6 billion has been allocated to light rail and commuter rail projects in urbanized areas around the United States, including Louisville competitors Charlotte, Cincinnati, Kansas City, Memphis, Nashville, and Raleigh."

Delay the modified alternative, and do the KIPDA study and integrate a regional light rail plan to shape urban growth toward increased use of low emission, high efficiency mass transportation.

The SDEIS states on S-16 that "Future options for enhanced bus service will be coordinated with TARC." The time to develop such enhancements is before spending \$ 2.9 billion on unnecessary bridge capacity. The potential for a program to increase TARC or other mass transportation ridership has not been analyzed.

C.2

In this manner, it was calculated that the monthly cost for tolls would be \$60.00 per month and approximately \$720.00 annually. This would equate to approximately 9% of a low-income person's annual income, based on an average annual income of \$8,794 for the 2000 HHS poverty threshold and \$8,959 from the 2000 Census.

*The calculations demonstrate that in general, low-income populations actually using the bridges would **have 7% more of their annual income used for tolls** than non low-income populations using the bridges.*

As a point of comparison, public transit fares are similar in magnitude to the cost of tolls. Based on information obtained from TARC, which provides public transportation to the greater LMPA, a one-way bus fare for cross-river travel costs \$2.50, equaling \$5.00 per day round trip.

Supplemental Draft, EIS 5-34 Environmental Consequences

Data from the 2000 Census was collected for each block group in the LMPA. Race data was available from the 2010 Census, but income data was not. For consistency in evaluation, the 2000 U.S. Census data was used for both race and income thresholds. This included: (1) the total population, (2) the total minority population and (3) the total population living below the poverty level. From this raw data, the percentage of persons classified as a minority and the percentage of persons below the poverty level were calculated.

Supplemental Draft EIS 5-24 Environmental Consequences

Comment 5

New circumstances in worsening economic conditions and Title VI disparate impacts

Modified Selected Alternative does not adequately address social justice needs of connecting Title VI area with jobs. Title VI as codified 42 USC § 2000d prohibits discrimination in programs that use federal funds. A less discriminatory alternative would include designing a light rail track on any new bridge and supporting projects to make it a preferable alternative for cross river travel usable by protected minorities and other users alike.

The Modified Selected Alternative does not, “*meet the requirements adopted by Kentucky in 603 KAR 7:060. Urbanized area transportation planning, nor the applicable requirements in 23 CFR Part 450, nor Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d, nor DOT Order 5680.1.*”

The analysis of impacts is too narrowly focused on the impact of tolling instead of a broad re-evaluation of the purpose and need and alternatives based on new poverty data and race housing data. Louisville is experiencing a catastrophic foreclosure rate in the west end with high quality data available from Louisville Public Works and other agencies demonstrating a disparate economic impact. The SDEIS ignores the crisis in unemployment and housing as it exists today and relies on 12 year old census data. The results of the analysis on bad data fail to meet the requirements of avoiding discrimination in this project and the resulting disparate impact is a knowing action by FHWA.

IN Appendix C.6, Agency Comments June 30 2011 EPA letter to Ms. Janice Osadczuk

D.12

D.13
D.23

'We appreciate your consideration of EJ issues in your analysis methodology. The EJ assessment should identify EJ communities in the project area, determine whether these communities would bear disproportionate impacts from the project, give details regarding plans for meaningful involvement by EJ communities, and list the benefits and burdens of the project on residents and EJ communities in the impact area. Community cohesion issues should also be taken into consideration during the scoping period. If project impacts will be disproportionate, mitigation measures should be evaluated, and the affected communities should have meaningful involvement in the mitigation discussion.'

IN Appendix B.8.2. The IQS Research Telephone Ohio River Bridge Users Study, a telephone based research study showed:

This survey was administered as a telephone study to 500 households. These telephone calls were conducted from Thursday October 6 through Monday October 10. This sample size generates a margin of error of 4.37% at the 95% confidence level.

This study was only designed to provide a statistically valid assessment of the usage patterns of the Ohio River bridges. A total of 38% of those who own or lease a vehicle are considered heavy users of the bridges, meaning that they cross one or more bridges either several times per week (24%) or every weekday (14%). Additionally, slightly more than a third (37%) of the population indicated that they rarely or never cross the bridges. When we consider the percentage of the population who use TARC to cross the bridge we find that approximately 15% of the respondents indicated that they do use TARC when they cross the bridge.

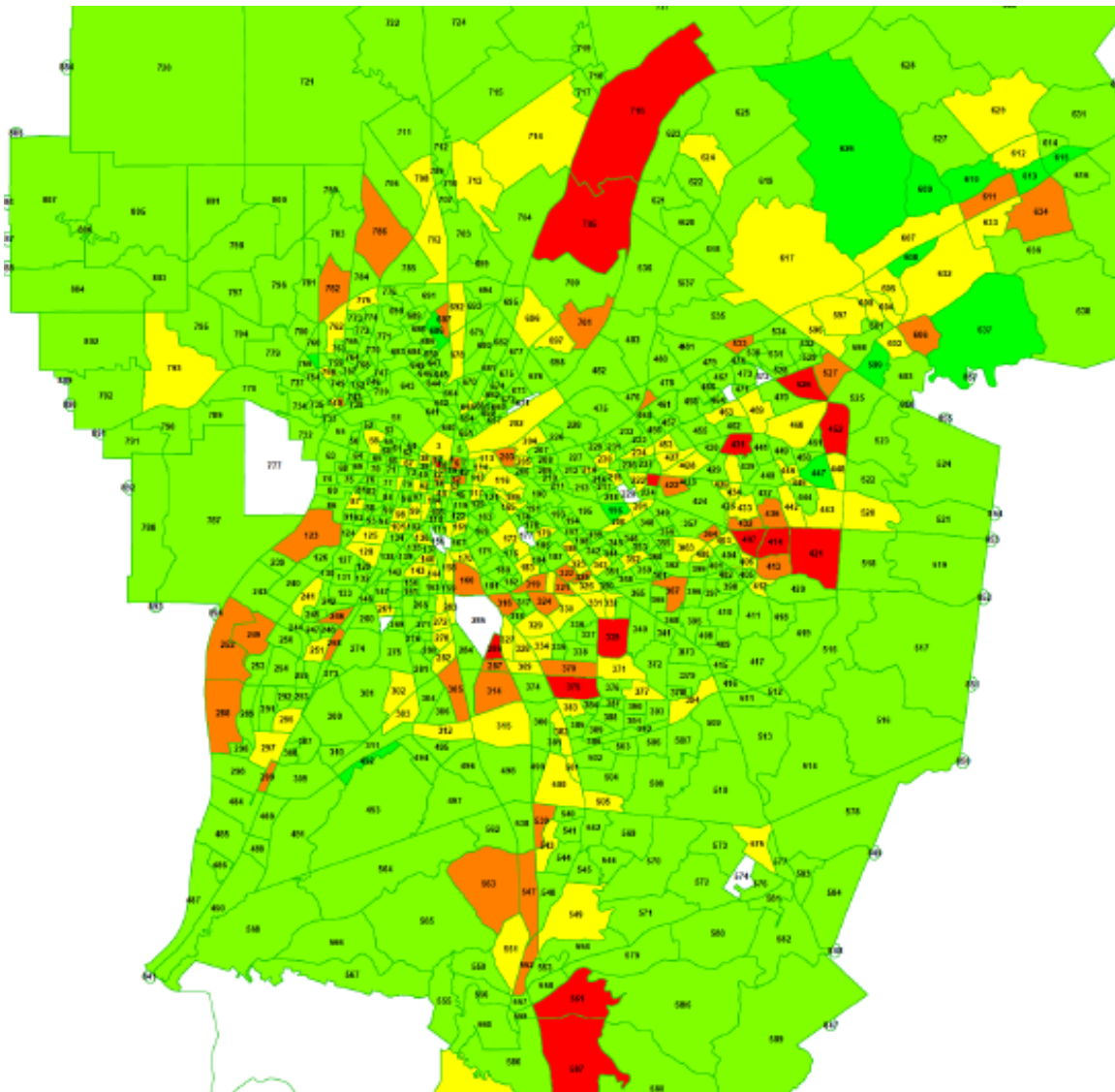
Comparing the travel patterns of the TARC users versus the drivers we find that those who do use TARC to cross the bridges cross the bridges more regularly than the drivers. Specifically, we find that 53% of the TARC users cross the bridges several times a week or every weekday.

*When we consider the different race groups we find that 71% of the EJ Race respondents indicated that they owned or leased a vehicle compared with 89% of the non EJ Race respondents. When we compared the bridge usage behavior of the EJ Race respondents to the non EJ Race respondents we find there are statistically significant differences ($p < .05$) in the patterns. When comparing the various usage frequencies between the portion of the population in the EJ Race category and those who are not, we find statistically significant differences for all usage frequencies. **In this case we find that the EJ Race members are crossing the bridge more frequently than those not in the EJ Race category.***

According to the survey there is a greater need for cross river mass transit by the EJ community. The west end has as much as 22% unemployment. The forecast in employment growth from 2007 to 203 graphically depicted in the Appendix H.3. Phase II Final Report 10-27-11 Version, page 94, shows that enormous job growth is predicted for the far east outer ring Prospect and Utica area as enabled by the bridge. Low income Title VI residents have no way to get to those jobs on time, now or in the future, with a long commute in older vehicles, spending a larger proportion of income for fuel, insurance and maintenance. The Modified Selected Alternative continues a racial discriminatory pattern of transportation investment favoring white, high income auto commuters. Mitigation projects spending \$ 1 million to "study" future mass transportation projects in the form of increased bus usage are not adequate to reverse historic trends disinvestment in the Title VI area, and the intentional ruining of the TARC system until it is reduced to a fraction of the transportation system running older 1985 Gillig buses. See attached TARC fleet inventory obtained by Open Records request.

D.14

The Modified Selected Alternative is supported by unfocused traffic volume models that mask disparate impact transportation planning behind a fog of model methodology and a mountain of apparently unassailable scientific results. But the bottom line result is that the ghetto our political leaders actively maintain in the Title VI area will continue to exist as all the transportation money and economic investment that could address EJ issues is spent to build a high income, predominantly white community in the east end. At the same time, we choose to ignore the air and water pollution impacts of auto-centric infrastructure.



From page 94 Figure 6.2, Changes in Employment , 2007 to 2030 Appendix H.3. Phase II Final Report 10-27-11 Version. See also the Maps at 2-11 and 2-12 in the Purpose and Need Section. The dark red areas in the map above, show where changes in adding more than 2000 jobs will occur in an outer ring of sprawl development based on the auto-centric, heavy emissions Modified Selected Alternative. This growth is a result of expanded auto dependence designing urban growth instead of sustainable low emissions planning. The green areas of the Title VI west

end indicate “less than zero” job growth.

Crash rates were calculated for these corridors based on the number of crashes per 100 million vehicle-miles (100 MVM). The crash analysis for the Kennedy Interchange corridors found that the total crash rate (230.8 per 100 MVM) was 138% higher than the statewide average rate of 97 crashes per 100 MVM for similar roadway classifications (see Table 2.2-6). When comparing the fatal and injury crash rates, the Kennedy Interchange Corridor crash rates were 23% and 113% higher than the statewide averages (0.49 vs. 0.40; and 40.4 vs. 19.0 crashes per 100 MVM, respectively).

Supplemental Draft EIS, 2-22 Purpose and Need

Comment 6

The C-1 alternative with new Downtown Bridge and limited ramp reconstruction adds congestion, delay and pollution. Crashes and accidents on ramps and merging areas occur every week if not every day on the Kennedy Interchange **not solely as a function of traffic volume and ramp configuration**, but as a result of driver error for various reasons— texting while driving, driving under the influence, mental distress, road rage, malfunctioning clunkers that break down, animals in the roadway, spilled cargo in the roadway, vehicle fires, sudden onset illness. These people caused incidents function independent of ramp width and in the volumes of traffic through the bridges means the mistakes of just one among thousands of people can and do cause congestion and stalled traffic lanes. Because lanes are narrow and designed for high throughput any such incident that shuts them down interrupts a large number of vehicles.

B.4

The modified alternative **assumes erroneously that adding additional bridge capacity with new ramps and merge areas will significantly address the frequency of daily incidents** because it attributes them to roadway capacity limitations. The actual need is to stop one person from causing several thousand to be interrupted in their trip. Mass transportation addresses this root cause by reducing the number of cars.

B.11

Based on the analysis, it was determined that the project will not cause or contribute to a new violation of the PM2.5, 5.4.4 Mobile Source Air Toxics NAAQS, or increase the frequency or severity of a violation, or delay timely attainment of the PM2.5 NAAQS. The qualitative study is presented in Appendix B1.1, thereby making it available for agency and public review and comment prior to the publication of the SFEIS. An FHWA project level PM2.5 hot-spot conformity determination will also be made prior to the publication of the SFEIS.

Supplemental Draft EIS 5-109 Environmental Consequences

The Louisville – Southern Indiana Ohio River Bridges (LSIORB) project is within the Louisville KY-IN PM2.5 non-attainment area; and, therefore, the project is required to meet Transportation Conformity requirements for a PM2.5 hot-spot analysis found in 40 CFR 93.123(b)(1). This includes a PM2.5 “hot-spot” analysis for the LSIORB project.

Supplemental Draft EIS 5-108 Environmental Consequences

Comment 7

The Clean Air Act requires this transportation project funded with federal dollars to "conform" to state plans designed to cause the area to attain air quality that meets NAAQS standards--national ambient air quality standards. The Final PM 2.5 Analysis and the conclusions it makes are objected to.

The Appendix B.1.1. presents the:

Final PM2.5 Project-Level Conformity Analysis for the Ohio River Bridges Project in Louisville, Kentucky, Division of Planning, Kentucky Transportation Cabinet, January 8, 2007, Updated by: Community Transportation Solutions, Inc., November 6, 2011.

The qualitative hot-spot analysis was based on two types of comparisons. First, a build versus no-action comparison was made. Second, a surrogate analysis was used. A "surrogate" (or substitute) site is a site for which the current levels of Annual Average Daily Traffic (AADT) and truck traffic are comparable to or greater than those of the future worst-case build scenario.

Supplemental Draft EIS 5-108 Environmental Consequences

In 2005 the Louisville area was declared non-attainment for fine particulate and given 3 years to plan and achieve attainment. The Air Pollution Control Board **closed the Barret Avenue monitoring station closest to the C-1 alternative**, in 2008 after one year of data that was giving high particulate readings and opened Cannons Lane monitoring station out in the middle of the golf course and Bowman Field open areas. The readings or design standards for the Cannons Lane station subsequently dropped.

KYDAQ the state Division of Air Quality has submitted three years of annual averaged mean particulate readings from 2008 to 2010, including one year from Barret Avenue and two years from Cannons Lane, in a pending application to EPA for re-designation to attainment status. A hearing on the application is set for February 2012. Nothing has been presented to the public in the LSIORB NEPA process about the consequences of a re-attainment ruling on the required PM 2.5 "hot spot analysis." Thus the public is largely unaware that their comments may be futile, and a critical step in the NEPA analysis is about to be dispensed with, based on discredited methodology.

The modeling based on distantly located PM 2.5 monitors that do not measure 'hot spot' pollution, coupled with erroneous and misleading comparison of other PM 2.5 'surrogate intersections' cannot meet the NEPA requirements for high quality analysis. New science shows PM 2.5 gravimetric analysis is insensitive to increasing concentrations approaching high volume traffic arteries. It is of no use to take three year annual averaged 'design standard' results to describe 'hot spot' air pollution health risks.

Karner, A.A., Eisinger, D.S., and Niemeier, D.A.,
Near Roadway Air Quality: Synthesizing the Findings from Real World Data,
Environmental Science & Technology, Vol. 44, 5334-5344 (2010).

5338

The curves indicate (ignoring ozone) that concentrations of certain pollutants are elevated near roadways and decrease as the distance increases, while other pollutants show no roadway influence. These background normalized results suggest that a range of approximately 160-400 m is sufficient to reach background concentrations for the majority of pollutants.

F.4
part

Figure 3 shows CO, benzene, EC, NO, NOX, NO2, PM2.5, and UF1 particle number, UF2 particle number, and VOC1 all decreased as distance from road increased. PM10, fine particle number, and VOC2 showed ambiguous or little to no trend with distance.

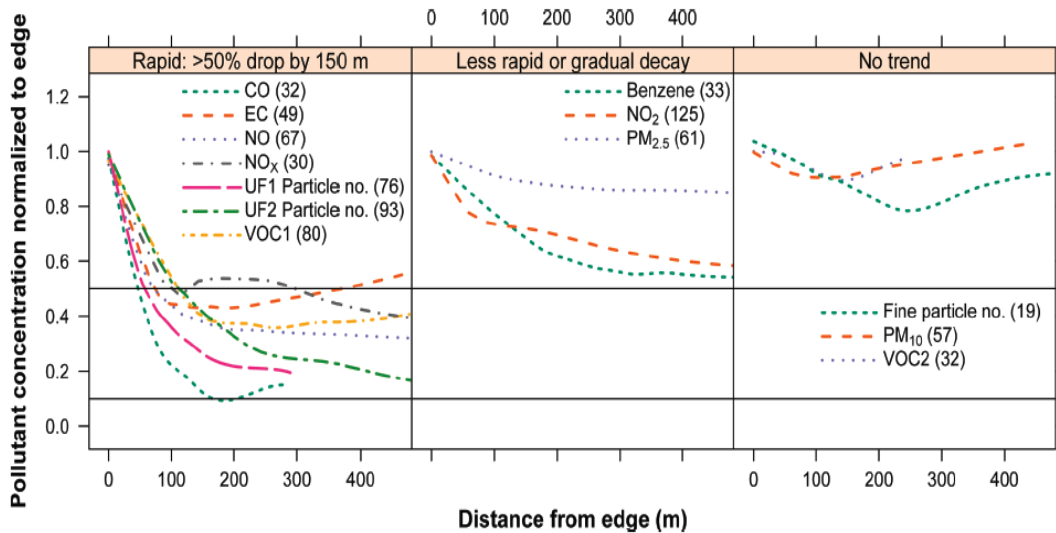


FIGURE 3. Local regression of edge normalized concentrations on distance. The horizontal black lines show a reduction from the edge-of-road concentration of 90% (at 0.1) and 50% (at 0.5). A loess smoother (alpha = 0.70, degree = 1) was fitted to pollutant data which was placed in one of three groups. The regression sample size, n, is given in parentheses after each pollutant. The n includes an estimated (not in the literature) edge-of-road value to facilitate normalization.

This article and numerous others show that regional level PM 2.5 data misrepresents population exposure and health risks caused by chronic exposure to near highway levels of pollutants. The FHWA gives a false ‘green light’ by using regional design standards to support its particulate conclusions.

*Attainment of the standard (CAA Section 107(d)(3)(E)(i)). There are two components involved in making this demonstration. The first component relies on ambient air quality data. The data that are used to demonstrate attainment should be the product of ambient monitoring **that is representative of the area of highest concentration**. The data should be collected and quality-assured in accordance with 40 CFR 58 and recorded in the Air Quality System (AQS) in order for it to be available to the public for review.*

Northern Kentucky Surrogate Site

A surrogate analysis reasons that—

“If the surrogate site has a monitor in the vicinity with current PM 2.5 design values less than the standards, then one can logically conclude that the worst case build scenario will not cause or add to an existing PM 2.5 violation or delay timely attainment of the NAAQS.”

The PM 2.5 surrogate site analysis relies on the Kenton County, Covington, Kentucky Monitoring site No. 21-117-0007, to claim conformity with a design standard of 12.4 g/m³

The 1401 Dixie Highway, Covington monitor AIRS-ID number 211170007 is the only monitor within reasonable proximity (about six miles away) of this interchange.

F.4
part

Page 26, Final PM 2.5 Analysis.

The site is located too far away from the I-71/75 and I-275 interchange selected as the surrogate site and thus its data results cannot be considered representative of any highest concentration or ‘hot spot’ conditions at a distant location. This site is now listed as closed. It did not use FRM PM 2.5 monitoring method that was regional validated. See, Kentucky Annual Ambient Air Monitoring Network Plan, 2010 Page 14 Summary of Network Changes.

Kennedy Interchange Site

The second selected surrogate site was the Kennedy Interchange using the Barret Avenue and Cannons Lane PM 2.5 monitors as the regional monitoring to claim conformity.

The Barret Avenue monitor (AIRS-ID number 211110048) and the Jeffersonville, Indiana monitor (180190006) are the only monitors in reasonably close proximity to the LSIORB project; both monitors are about 1.3 miles from the center of the Downtown project site.

Page 16, Final PM 2.5 Analysis

The APCD notes that the prevailing winds are from the southwest which would blow annual average concentrations away from both the Barret and Cannons Lane monitoring stations.

With the prevailing winds in the area from the southwest, the Jeffersonville monitor may be picking up river barge traffic emissions, industrial park emissions, and Downtown Louisville area mobile source emissions leading to the high design value

Page 25, Final PM 2.5 Analysis.

Thus distance and prevailing winds prevent the monitor readings from registering ‘highest concentrations.’

For the East End analysis it was determined that the worst-case AADT for the Downtown area is considerably lower than both surrogate sites 1 and 2. Both surrogate sites 1 and 2 had monitor design values that were less than the 24-hour standard for PM2.5.

Supplemental Draft EIS 5-109 Environmental Consequences

Reliance on distant PM 2.5 site monitoring and faulty surrogate site methodology renders the Final PM 2.5 Analysis erroneous. The FHWA determination that the LSIORB project will not cause or contribute to a new violation of the PM2.5 NAAQS, or increase the frequency or severity of a violation, or delay the timely attainment of the PM2.5 NAAQS, is not based on substantial facts, is arbitrary and abuses agency discretion.

The methodology is unsound, and the surrogate site selection with distant monitor results is full of errors, insensitive to ‘hot spot’ conditions, fails to protect human health and includes suspect data.

Design Standards show increasing concentrations of PM 2.5

Table 1 Monitoring Data on page 10 of the KYDAQ re-designation application actually shows an up trend in the ambient three year annual mean concentration of PM 2.5 design standards for the years 2009 to 2010:

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APCD reported PM 2.5 Monitoring Stations Annual Average Design Standards

	2009	2010	
Southern	12.21 up to 13.47	up by 1.26	
Wyandotte	12.45 to 13.74	up by 1.29	
Watson	11.59 to 14.83	up by 3.24	near Mill Creek EGU
Cannons	11.67 to 13.27	up by 1.6	only two years data
Walnut IN	13.01 to 14.67	up by 1.66	
New Albany	11.91 to 13.80	up by 1.89	
Charlestown	10.84 to 12.45	up by 1.61	
Shepherdsville	11.81 to 13.43	up by 1.62	

Louisville's 2 year trend is upward including a 3 point leap at Watson Lane that is nearly violating the **15µg/m3 NAAQS standard**.

The data that are used to demonstrate NAAQS attainment should be the product of ambient monitoring that is representative of the **area of highest concentration**. CAA Section 107(d)(3)(E)(i). But, the monitoring sites are not positioned to monitor the areas of highest concentration and are uniformly located away from busy intersections and more than 150 meters away from highways where peer reviewed journal articles demonstrate that lower level background concentrations are detected.

See the Louisville air pollution monitoring sites [HERE](#)

The language in the CAA should be complied with in monitoring location to be the "area of highest concentration" which would require placement of monitors at the C-1 alternative location, not a mile and a half away, and at the A-15 alternative location.

The use of inaccurate, three times averaged, results from distantly placed PM 2.5 monitoring stations for the "hot spot" analysis is false and misleading in its findings of no effect.

New understandings of road edge pollution concentrations and affected area were not used

This PM 2.5 hot spot study fails to integrate new scientific understanding in air pollution health risks into the NEPA analysis of project effects.

Since 2001, the peer reviewed literature has shown that the most toxic and cancer causing particulate comes from smaller than 2.5 microns into the nano-particulate levels. These ultrafine particulates do not show up in PM 2.5 gravimetric analysis and are counted as numbers of particles per cubic centimeter. Dense clouds of ultrafine particles surround and flow downwind of major traffic arteries. See,

Prashant, K., Gurjar, B., Nagpure, A., and Harrison, R., Preliminary Estimates of Nanoparticle Number Emissions from Road Vehicles in Megacity Delhi and Associated Health Impacts, Environmental Science & Technology, Vol. 45, 5514-5521 (2011).

F.7

Exposure to high total number particle, ToN concentrations may aggravate existing pulmonary and cardiovascular diseases due to efficient alveolar deposition of tiny particles and their potential to enter the pulmonary vascular space. Fresh vehicular exhaust contains many nanosized particles that take a few seconds of traveling time to reach to the roadside where people living, walking, or traveling by motor vehicles, bicycles and 2Ws are exposed. Concentration levels of exposure can vary up to 2 orders of magnitude or more depending on the exposed location.

For instance, concentration levels for exposure can be to $\sim 10^6 \text{ cm}^{-3}$ while traveling in car in urban or tunnel routes, $41 \sim 10^5 \text{ cm}^{-3}$ during cycling, walking or traveling in buses in heavily trafficked area, and $\sim 10^4 \text{ cm}^{-3}$ in typical street canyon conditions. Our estimated roadside concentrations in 2005 were $6.95(4.43-16.08) \times 10^5 \text{ cm}^{-3}$; these are about 6-10 times larger than those measured by Kaur et al. at a heavily trafficked route in London during their exposure assessment study for the people walking ($0.68 \times 10^5 \text{ cm}^{-3}$), cycling ($0.94 \times 10^5 \text{ cm}^{-3}$), traveling in buses ($1.01 \times 10^5 \text{ cm}^{-3}$), cars ($0.99 \times 10^5 \text{ cm}^{-3}$) and taxis ($0.88 \times 10^5 \text{ cm}^{-3}$). For Delhi inhabitants, current exposure to ambient and road side concentrations are of the order of $\sim 10^4$ and $\sim 10^5 \text{ cm}^{-3}$, respectively (Table 3).

*We calculated mortality estimates for 2005 levels for comparison with other air pollutants in Delhi as 7943 (i.e., 473 mortality per million people) based on corrected ambient ToN concentrations in 2005. Normalization of the above mortality figures provides an approximately 0.69 and **48 times relative mortality impact** by vehicle-derived nanoparticles in Delhi than those from TSP and NO₂ exposure from all sources, respectively. These figures clearly indicate that exposure to nanoparticles is a major contributor to air pollution-related deaths in Delhi.*

Zhu, Y., Hinds, W., Kim, S., Shen, S., and Sioutas, C.,
Study of ultrafine particles near a major highway with heavy-duty diesel traffic,
 Atmospheric Environment, Vol. 36, 4323-4335 (2002).
 4324

Recent toxicological studies have concluded that ultrafine particles (diameter < 100 nm) are more toxic than larger particles with the same chemical composition and at the same mass concentration (Ferin et al., 1990; Oberdorster, 1996, 2001; Donaldson et al., 1998, 2001; Churg et al., 1999; Brown et al., 2000). Currently, however, only the mass concentration of PM < 10 μm in aerodynamic diameter (PM₁₀) and < 2.5 μm (PM_{2.5}) are regulated. Information about ultrafine particles is usually not available. In fact, even though ultrafine particles represent over 80% of particles in terms of number concentration in an urban environment (Morawska et al., 1998a, b), the less numerous but much heavier particles of the accumulation (0.1-2 μm) and coarse (2.5-10 μm) modes dominate mass concentration measurements.

Emission inventories suggest that motor vehicles are the primary direct emission sources of fine and ultrafine particles to the atmosphere in urban areas (Schauer et al., 1996; Shi et al., 1999; Hitchins et al., 2000).

Ning Li, Constantinos Sioutas, Arthur Cho, Debra Schmitz, Chandan Misra, Joan Sempf,
 Meiying Wang, Terry Oberley, John Froines, and Andre Nell,
Ultrafine Particulate Pollutants Induce Oxidative Stress and Mitochondrial Damage
 Environmental Health Perspectives • Volume 111 No 4 April 2003

We demonstrate that UFPs are more potent than fine (< 2.5 μm) or coarse (2.5–10 μm) particles toward inducing oxidative stress. This effect may be explained by adsorbed chemicals

(organics and metals) capable of generating ROS and the ability of UFPs to localize in mitochondria.

How exactly UFPs gain access to and induce mitochondrial damage is unknown.

*Our data show that UFPs **are more potent than PM2.5 and PM10** that contribute the majority of mass in the HO-1 and DTT assays. It may be necessary to consider standards based on particle number instead of mass if further studies confirm the differential toxicity of UFPs.*

Karner, A.A., Eisinger, D.S., and Niemeier, D.A.,

Near Roadway Air Quality: Synthesizing the Findings from Real World Data,

Environmental Science & Technology, Vol. 44, 5334-5344 (2010).

Synthesizing monitoring results near highways from 41 monitoring studies published in the peer reviewed literature from 1978 to 2008. Generally, new scientific studies show that a cloud of ultra-fine particulate increases from background level concentrations at points distant, to elevated concentrations at the roadway edge. While regional design standards PM 2.5 readings based on gravimetric analysis, the federal standard method, show little to no increase from background levels as one approaches the edge of the road, both Carbon Monoxide and ultrafine particulate show dramatic increases.

Hu, S., S. Fruin, et al. (2009). "A wide area of air pollutant impact downwind of a freeway during pre-sunrise hours." Atmospheric Environment, vol. 43(16): 2541-2549.

"In this study, real-time air pollutant concentrations were measured along a 3600 m transect normal to an elevated freeway 1–2 h before sunrise using an electric vehicle mobile platform equipped with fast-response instruments. In winter pre-sunrise hours, the peak ultrafine particle (UFP) concentration ($\sim 95\,000\text{ cm}^{-3}$) occurred immediately downwind of the freeway. However, downwind UFP concentrations as high as $\sim 40\,000\text{ cm}^{-3}$ extended at least 1200 m from the freeway, and did not reach background levels ($\sim 15\,000\text{ cm}^{-3}$) until a distance of about 2600 m. UFP concentrations were also elevated over background levels up to 600 m upwind of the freeway. Other pollutants, such as NO and particle-bound polycyclic aromatic hydrocarbons, exhibited similar long-distance downwind concentration gradients."

CO readings at the edge of the highway were 20 times the concentrations of 150 meters distant. Ultrafine particulates were six times or more concentrated at the highway than background levels. **Ultrafine particulate are more toxic than PM 2.5 particulate and properties and residents adjacent to highway affected areas risk health impacts not discussed in the SDEIS. Regional level PM 2.5 analysis as metered by distant located federal method PM 2.5 gravimetric analysis is discredited as an indicator of health risk from proximate location to high volume highways where human exposure is highest.**

Localized construction emissions can be considered separately and temporary as construction-related emissions at each individual construction site is anticipated to be less than 5 years. Per 40 CFR 93.123(c)(5), temporary construction-related emissions are not required to be included in the hot-spot analysis.

40 CFR 93.123(c)(5) states "CO, PM10, and PM2.5 hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using

established “Guideline” methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site.”

Page 14, Final PM 2.5 Analysis

*The conformity rule requires PM2.5 hot-spot analyses to include road dust emissions only if such emissions have been found significant by EPA or the state air agency prior to the PM2.5 SIP or as part of an adequate PM2.5 SIP motor vehicle emissions budget (40 CFR §93.102(b)(3)). EPA has not approved a PM2.5 SIP for the Louisville KY-IN PM2.5 nonattainment area, nor has EPA or the state air agency made any significance findings related to re-entrained road dust for the PM2.5 nonattainment area. Therefore **re-entrained road dust is not considered in the analysis**, per the conformity rule.*

Page 14, Final PM 2.5 Analysis

Comment 8

Construction and road dust

Re-entrained road dust should be part of any PM 2.5 analysis because of road salt applications in winter and because road dust makes up a significant portion of particulate in highway corridor ambient concentrations. Recently EPA required vehicle emissions inventories to be added to the non-attainment application of KYDAQ. This is a finding of significance.

FWHA wants to exploit sub project local impacts to avoid having to include road dust emissions and emissions from construction dust. When it is advantageous to claim local emissions do not effect the region, FHWA relies on that to say construction dust from one sub project does not last longer than five years and thus is temporary. The adjacent sub project then successively claims a new five year temporary exemption.

But when it is advantageous to claim regional PM2.5 results monitored one and a half miles or more away are representative of local ‘hot spot’ conditions, then local sub projects are suddenly regional effectors. The construction emissions particulate should be deemed to have the same long range reach and impact as is credited to the regional PM 2.5 design standards results, that are considered valid across miles.

F.8

The localized increases in MSAT concentrations would likely be most pronounced at locations near the areas that will be constructed on new alignment. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Action Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

Supplemental Draft EIS, page 5-112, Environmental Consequences

Comment 9

Appendix D.5 – D.8 for the impacts to the Drumanard Estate does not indicate the locations of air vents for the tunnel and incorrectly eliminates air pollution impacts as having NE no effect based on erroneous regional PM 2.5 and CO ‘hot spot’ modeling. The air pollution impacts assessment reaches an erroneous, misleading and dangerous conclusion:

F.9

Appendix D.4.2.3 Effects Recommendations for November 2011 meeting:

*“Air Quality impacts were evaluated according to US Environmental Protection Agency (EPA) guidelines for modeling. All sites studied fell below the National Ambient Air Quality Standards for carbon monoxide. Particulate Matter (PM_{2.5}) was also evaluated qualitatively in the FEIS; the project meets conformity requirements for PM_{2.5}. Mobile Source Air Toxics (MSATs) and Ozone were dismissed from analysis based on the fact that on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will cause substantial reductions over time that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. Substantial construction-related MSAT emissions are not anticipated for this project as construction is not planned to occur over an extended building period in any one localized area. In addition the LSIORB Project is included in KIPDA's Horizon 2030: The Metropolitan Transportation Plan for the Louisville (KY-IN) Metropolitan Planning Area long-range plan (p. 427), and in the FY 2011–FY 2015 Transportation Improvement Program (p. 162). The conformity analyses demonstrated conformity with the eight hour ozone standard. **Therefore, it was determined that air quality impacts from construction of any alternative would not affect any historic property.**”*

Air Quality: The Louisville Metro Air Pollution Control District identified 24 intersections for hot spot analyses for an updated carbon monoxide (CO) assessment. The analysis utilized the CAL3QHC model developed by the US EPA. New hot spot analysis techniques predict lower CO levels than the original model due to reductions in projected traffic and refinements to modeling technology. None of the 860 receptors analyzed around the 24 hot spot intersections exceeded the one hour or eight hour National Ambient Air Quality Standards for CO. PM_{2.5}, Ozone, and MSATs were likewise determined to meet air quality conformity standards.”

These sophisticated modeling ruses obscure the fact that people in the traffic corridor adjacent areas will every day be exposed to higher concentrations of toxic pollutants than background regional levels for larger areas adjacent to the highways than presented in the analysis. The FHWA is well aware that concentrations of pollutants are multiples higher along the roadway corridors and residents proximate to the roads, as well as drivers along the highways are constantly exposed to higher concentrations than are indicated by averages of regional monitoring results. This highway project will affect the health of many people as opposed to a no action alternative or a mass transportation sustainable plan, but FHWA uses an irrelevant comparison between local and regional impacts to avoid quantifying major local impacts.

The document in Appendix B.1.2 1. Mobile Source Air Toxics, completely finesses the new scientific understandings of the health consequences of persons exposed to high volume traffic corridor pollution.

It is obvious that:

“As indicated in Table 1, the VMT for the 2030 No-Action Alternative is lower than any of the 2030 Build Alternatives; therefore, higher levels of regional MSATs are expected compared to the 2030 No-Action Alternative.”

And,

“Because of the specific characteristics of the project alternatives (new roadway segments and redistribution of traffic patterns), under each alternative there may be localized areas where VMT would increase and other areas where VMT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in

F.2
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*MSAT emissions would likely be most pronounced along the new roadway sections that would be built in the east end in the vicinity of Prospect, Kentucky, and Utica and Sellersburg, Indiana. **If these increases do occur, they too will be substantially reduced in the future** due to implementation of EPA's vehicle and fuel regulations."*

The Modified Selected Alternative would result in some 52,000 new East End Bridge and approach A-15 corridor vehicles per day, where the level of MSAT will go from rural background levels to high roadway area concentrations. The lethality of MSAT is acknowledged: Page 3: *"Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma."*

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts, with each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

While available tools do allow a reasonable prediction of relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. Therefore, the relevance of the unavailable or incomplete information is that a determination of whether any of the alternatives would have "significant adverse impacts on the human environment" is not possible.

The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

Appendix C.6 Agency Comments June 30 2011 EPA letter to Ms. Janice Osadczuk
Team Leader, Environmental Services U.S. Department of Transportation Federal Highway
Administration from Heinz J. Mueller, Chief NEPA Program Office, page 4

We note that the Far East Bridge, roadway, and tunnel will be reduced (as compared to earlier plans identified in the ROD) from six lanes to four lanes. The vehicle emissions could become concentrated in the tunnel. The FHWA will need to analyze how the toll booth locations may affect vehicle queuing and hot-spot emissions, including air quality in the tunnel area.

We recommend the DSEIS discuss the likelihood that FHWA will be able to demonstrate conformity for each DSEIS alternative. In addition, the DSEIS should identify how exhaust in the proposed tunnels would be vented and the locations of those vents. The DSEIS should provide an evaluation of the potential for localized adverse air quality impacts, including mobile source air

toxics (see **Mobile Source Air Toxics (MSATs)** discussion below), to the people living in the neighborhoods and communities in the **vicinity of emissions vents and/or proposed toll booths or other areas that may be prone to congestion**. Potential mitigation measures to avoid, reduce and compensate for any potential adverse impacts should be identified in the DSEIS.

There seem to be plenty of models available to predict emissions and impacts, but the FHWA does not even attempt to:

See the EPA MSAT website at [<http://www.epa.gov/oms/toxics.htm#epamsat>](http://www.epa.gov/oms/toxics.htm#epamsat)

Modeling and Analysis Tools

- [NMIM](#) National Mobile Inventory Model
- [MOBILE6.2](#) Toxics Module for MOBILE6 Highway Vehicle Emission Factor Model
- [Example Application of Modeling Toxics Air Pollutants in Urban Areas \(PDF\)](#) (111 pp, 5.7MB, EPA454-R-02-003, June 2002). This report presents a case study of dispersion modeling in Houston for selected HAPs, using an approach which **estimates highway vehicle toxic emissions along specific roadways**.
- [Support Center for Regulatory Air Models](#) is EPA's source of information on air quality models for air toxics and criteria pollutants.
- [Fate, Exposure, and Risk Analysis](#) provides modeling tools for **evaluation of health risks** from air toxics and criteria pollutants. The HAPEM6 exposure model, which was used to support assessments in the final Mobile Source Air Toxics Rule, signed February 9, 2007, is available on this site.
- [Consolidated Human Activities Database](#) contains human activity data for use in inhalation exposure assessment.
- [Human Exposure Database System](#) is an integrated database system that contains chemical measurements, questionnaire responses, documents, and other information related to EPA research studies of the exposure of people to Environmental contaminants.

Federal Register: 72 FR 8428 **Control of Hazardous Air Pollutants From Mobile Sources**

“Benzene is a known human carcinogen, and mobile sources are responsible for the majority of benzene emissions. The other mobile source air toxics are known or suspected to cause cancer or other serious health effects. We are limiting the benzene content of gasoline to an annual refinery average of 0.62% by volume, beginning in 2011.”

From the federal register:

*These data collectively show that while levels of air toxics are decreasing, potential public health risks remain a concern, and ambient levels and personal exposure vary significantly. These data indicate that **concentrations of benzene and other air toxics can be higher near high-traffic roads, inside vehicles, and in homes with attached garages.***

*“According to NATA, the average national cancer risk in 1999 from all outdoor sources of air toxics was estimated to be **42 in a million**. That is, 42 out of one million people would be expected to contract cancer from a lifetime of breathing air toxics at 1999 levels. **Mobile sources were responsible for 44% of outdoor toxic emissions and almost 50% of the cancer risk.** Benzene is the largest contributor to cancer risk of all 133 pollutants quantitatively assessed in the 1999 NATA, and mobile sources are the single largest source of ambient benzene.”*

The FWHFA fails to comply with 40 C.F.R. § 1502.22 Incomplete or unavailable information, and abuses its discretion when it completely fails to predict MSAT concentrations using available methodology and use the results to inform alternative selection. The presumption of no-effect is unsupported and in fact contradicted by peer reviewed studies. The insufficiency of the current models does not eliminate their utility to give relevant information to the public. That concentration information can be compared with peer reviewed studies of MSAT contributions to disease rates and used to advise the public on the consequences of living near a major highway as a necessary part of public consultation. The analysis of Appendix B.1.2 1. Mobile Source Air Toxics is incomplete, false and misleading, fails to describe the environment of the area affected, is not commensurate with the importance of the impact and therefore fails to meet the NEPA requirements for analysis.

40 C.F.R. § 1502.15 Affected environment.

The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses in a statement shall be commensurate with the importance of the impact . . .

§ 1502.22 Incomplete or unavailable information.

(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

§ 1502.24 Methodology and scientific accuracy.

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.

“In an effort to prevent roadway pollutants from entering the WHPA, a drainage system has been designed to contain all runoff into a storm system leading to vaults prior to releasing the runoff into Harrods Creek. A meeting was held with LWC and KDOW on March 5, 2009 to discuss the proposed design of the storm water drainage system in the Wellhead Protection Area. The concept was considered reasonable and acceptable.”

“The drainage system and containment vaults described in “Wellhead Protection Program Areas,” above, would prevent storm water runoff from impacting the Riverbank Filtration tunnel and collector wells.”

Supplemental Draft EIS, page 5-182 -184 Environmental Consequences

Comment 10

Slugs of road salt contaminated water will flow into Harrods Creek from the treatment vault overflows, joining local area chloride pollution from Prospect shopping areas and roads.

New understandings of water pollution impacts

The Modified Selected Alternative will add 3.5 miles of 4 lane plus shoulder approach and bridge deck impervious surfaces that runoff mobile source polluted storm water. These road surfaces

will be treated with deicing chemicals in winter, including chlorides and toxic anti caking toxic. The road surfaces will contribute dissolved solids and road deposited chemicals spilled from truck cargo into precipitation flows.

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The EPA commented on the need to reassess this impact:

Appendix C.6 Agency Comments June 30 2011 EPA letter to Ms. Janice Osadczuk
Team Leader, Environmental Services U.S. Department of Transportation Federal Highway
Administration from Heinz J. Mueller, Chief NEPA Program Office, page 4

Page 5

Due to potential increased severity and intensity of precipitation events due to climate change, the DSEIS should identify and evaluate impacts to the proposal and any proposed design measures that could be undertaken to reduce impacts. This might include, but is not limited to, identifying how proposed tunnels, bridges and stormwater treatment areas might be designed (typelsize) to accommodate increased floodwaters and treat stormwater runoff and/or inadvertent hazardous materials spills during such events. This assessment should also include impacts to proposed smaller bridges and/or culverts associated with the project's smaller stream crossings (e.g., Harrods Creek, Beargrass Creek, on the Kentucky side and other streams on the Indiana side, including intermittent and headwater streams).

The East End bridge approach passes through and above the 70 million gallon per day drinking water intake of the LWC Riverbank Filtration Project as installed. The soil conditions are porous sand down to limestone. 10 meters of silt and clay overlie 20 meters sand and gravel. Beneath the alluvial deposits the bedrock is stratified limestone, shale and dolomite of Ordovician age. An analysis of possible impacts by sinking roadway support piers near the collection tunnel of the RBF identified potential threats to the drinking water facility:

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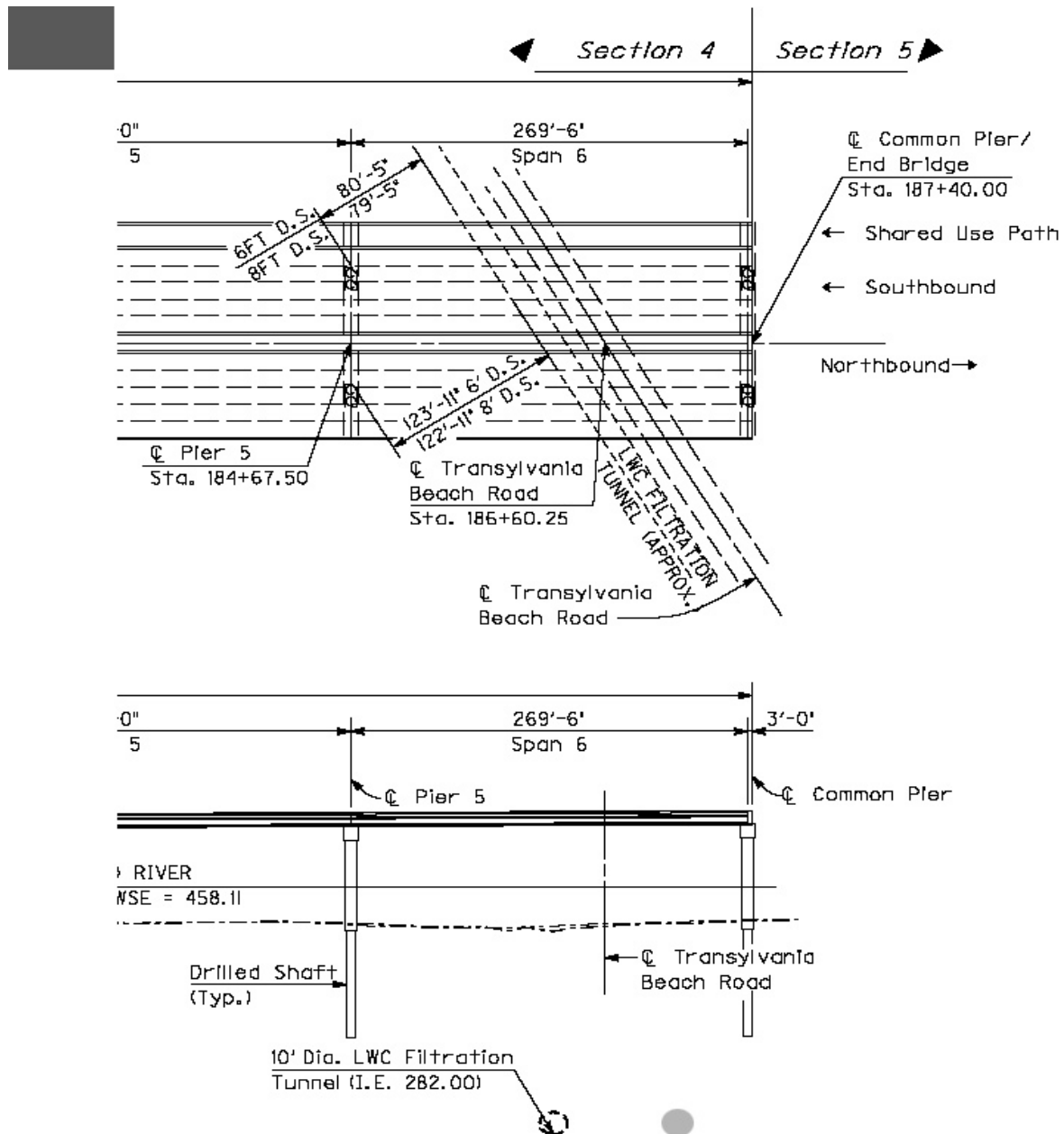
Appendix B.4.1. Date: May 26, 2009 Prepared For: Kay Ball, Louisville Water Company
Prepared By: Wojciech Klecan, P.E., Tao Jiang, P.E. Ph.D.
Subject: Evaluation of the Impact of Bridge Piers on RBF Tunnel
Project: LWC Riverbank Filtration Tunnel and Pump Station (02223.007)

“The results indicate that the impact on the RBF tunnel from the bridge pier foundation appears to be minor for the three options proposed by H.W. Lochner Inc., based on the estimated rock properties and the derived equivalent stripe load. However, given the level of accuracy using this simplified analytical method and possible variations in geotechnical properties of the bedrock, we recommend that the bridge piers be located at least 40 feet away from the tunnel in the horizontal direction, as shown on the attached sketch.”

“If drilling fluids were used in the pier shaft construction, it is probable that no deleterious effects would accrue. However, the possibility of loss of massive quantities of drilling fluid to the formation cannot be ruled out. If that occurred, use of bentonite could risk flooding the well and clogging the screens and adjacent formation pores, while use of polymers could trigger chemical reactions resulting in undesirable reducing conditions in the affected portion of the aquifer. It would be prudent to eliminate these risks by avoiding the use of drilling fluids in the bridge pier construction.

If construction proceeds without the incorporation of drilling fluids, there should be no deleterious side effects that would compromise the integrity of the existing collector well. To ensure the integrity of the CW-3 well screens, the use of drilling fluids should be prohibited for any pier shaft that is constructed within 400 to 500 feet for bentonite and 1,000 feet for

polymer fluids (or prohibit the use of polymers altogether).”



One of the three drawings showing the pier placement relative to the water tunnel. The section of the tunnel is actually closer to the pier on the right as seen in the overhead view. (indicated by gray dot)

As shown in the drawing by H.W. Lochner , Item No. 5-731.00 attached to the Louisville Water Company approval of the bridge pier placement, the north bridge pier is closer than 40 feet to the LWC tunnel in conflict with the engineering recommendations.

The drawing in the Appendix do not indicate that the nearest pier will be 40 feet distant

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horizontally from the underground water tunnel. Post construction testing of the vertical pier mechanical force on the tunnel should be required. An alternative route could avoid this significant threat.

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The same alternative route could avoid the \$ 39 million added cost of the high angle Harrod's Creek bridges. While a plan for collecting and conveying bridge runoff to a treatment tank is shown on the north side of the Harrods Creek, no similar collection is shown for the down sloping 2000 foot tunnel runoff on the south side. Stormwater from the concentrated emissions in the tunnel will convey high 'first flush' concentrations of chemicals and chloride into the creek at the bridge portals. A treatment facility should be included there as well since the runoff from both directions will flow in Harrods Creek into the wellhead protection area of the RBF right over wellhead five intake zone. Thus if we believe the creek crossing is out of the well head protection area, it nevertheless conveys flows back into the WPA.

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"While salts from roadway de-icing are not removable with the treatment vault, the salts would, instead of draining into the well-head protection area, be diluted by storm discharge, emptied directly into Harrods Creek, being diluted and flowing into the Ohio River. . ."

Feb. 8, 2011, letter, John Stacksteder, P.E. Project Manager Community Transportation Solutions

3. Site Hydraulic Characteristics

The site hydraulics characteristics were initially estimated by evaluating historical data of pumping activities in the area. These values were refined after the demonstration well was constructed through a series of controlled pumping tests performed in October 1999, March 2000, October 2000, April 2001, and September 2001.

Prior to the construction of the 0.88-m³/s collector well, the transmissivity of the 21.3-m thick sand and gravel aquifer in this area was estimated at 2,485 m²/d, based upon previous data collected during the construction of the treatment plant. This corresponds to an average aquifer hydraulic conductivity of approximately 116 m/d.

After the 0.88-m³/s collector well was completed, the horizontal hydraulic conductivity was measured at 119 m/d and the vertical conductivity was measured at 39.6 m/d at a flow of 0.88 m³/s. The leakance (a measure of the ease of flow between the river/aquifer interface) was measured at 2.4 1/day in the October 1999 pumping test. Subsequent pumping tests showed that the leakance decreased to:

- 0.72 1/day in March 2000.
- 0.25 1/day in October 2000.
- 0.20 1/day in April 2001.
- 0.15 1/day in September 2001.

The decrease in leakance indicates that clogging of the river/aquifer interface is a function of time.

Altogether, these data indicated that the design-limiting factor in the demonstration well at Louisville was the movement of water between the river/aquifer interface. The decrease in leakance with time indicates that particles are blocking the flow path and are extending the area of recharge out into the river bottom. Piezometric measurements taken in August 2000 and August 2001 indicated the cone of influence for the well had extended as far as 305 m out into the 610-m width of the river.

- *Second, road salt usage in the United States has increased steadily beginning in the 1940s through the current decade . . .*
- *Third, urban development is increasing each year (10), which increases the amount of impervious area on which winter deicing operations are conducted . . .*
- *Fourth, chloride, and to a large degree sodium, the two primary ions in road salt, remain in solution, making it difficult with present-day technology to design effective management practices for reduction of road-salt loadings to receiving waters after application.*

Currently, reduction in usage appears to be the only effective road-salt-runoff management strategy.”

Despite this established scientific understanding of increasing groundwater contamination, there is no plan to remove high concentrations of road salt chlorides from the A-15 runoff. The analysis fails to discuss or model expected chloride concentrations in receiving streams and compare them to total maximum daily load chloride concentrations including background levels and a margin of safety for the protection of aquatic life. There is no discussion of affected fish species already reduced to survivor species in the highly impacted Harrods Creek.

Thank you for the opportunity to comment on the SDEIS for the Modified Selected Alternative.

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