Session 3b/4b: Emerging Contaminants
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Towards An Understanding of Water Quality in a Mixed Agricultural and Urban Watershed: Eagle Creek Watershed, Indiana

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As watersheds continue to undergo transformation to mixed agricultural and urban land use, new challenges face water resource managers working to improve water quality and quantity. Improving water resources in the glaciated Midwest region hinges on integrated approaches addressing not only water quality, but water use, wastewater treatment, and the physical environment. The Central Indiana Water Resources Partnership (CIWRP), a research and development partnership between IUPUI researchers and Veolia Water Indianapolis, LLC. – the managers of the Indianapolis Water Company, has been conducting extensive research on water quality trends and contaminant export processes throughout the Eagle Creek Watershed. Eagle Creek watershed drains to a drinking water reservoir for the City of Indianapolis. In addition to CIWRP research, water resources research in the Eagle Creek Watershed also includes water quality monitoring associated with an IDEM 319 watershed BMP Implementation Grant and assessment of BMP performance through a USDA-CSREES CEAP project.

This paper will present the results of research and monitoring of the Eagle Creek watershed especially as it relates to nutrient, pesticide and wastewater compound transport during both base and event flow. Preliminary results of a watershed-scale screening for pharmaceuticals will also be presented. Special focus will be on atrazine as atrazine remains an important contaminant in the watershed with spring event flow concentrations exceeding 35 ppb. This is despite the fact that a significant percentage of watershed streams are buffered suggesting that either there is a need for targeted BMP implementation or that agricultural tile drainage systems are bypassing buffers.

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