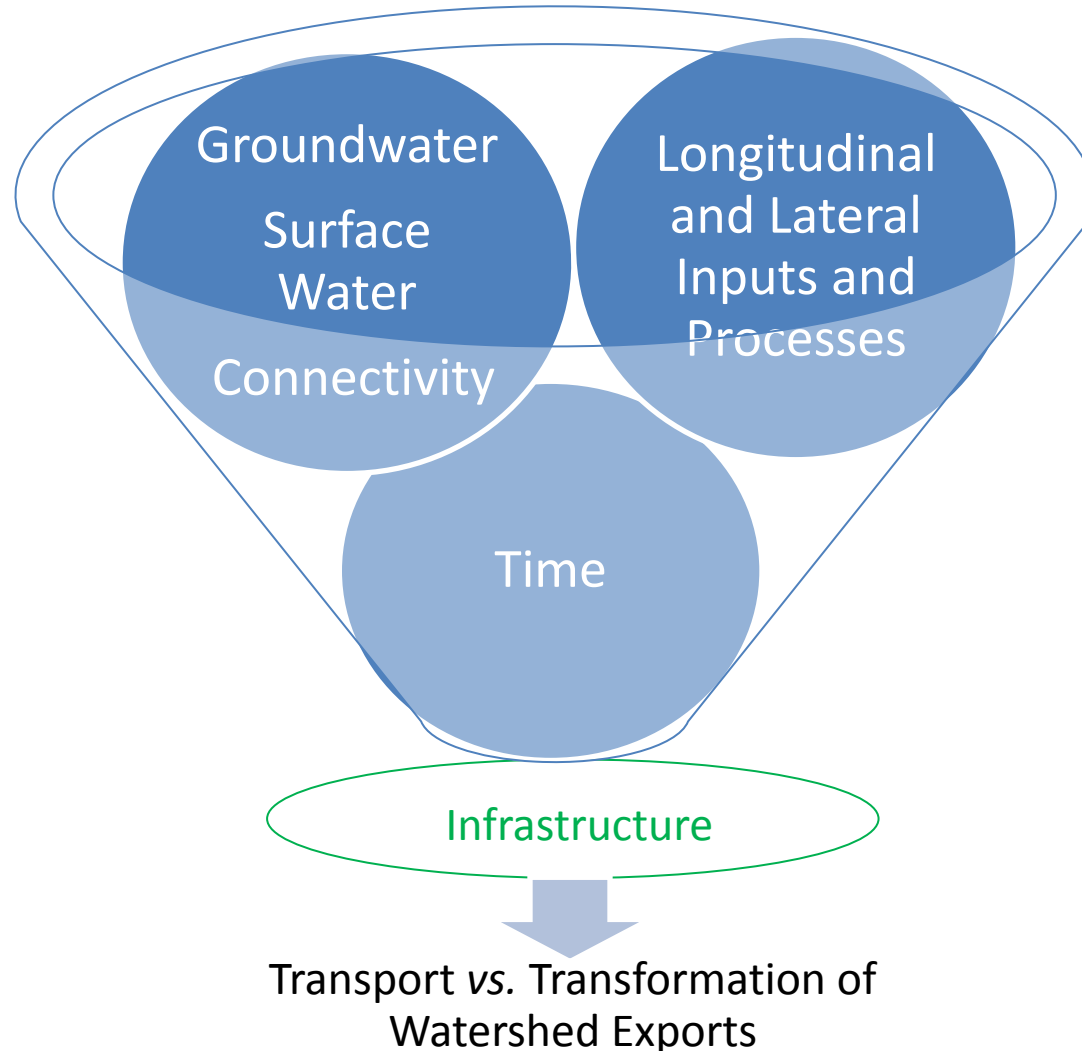

The Urban Watershed Continuum: Infrastructure and Ecosystem Function

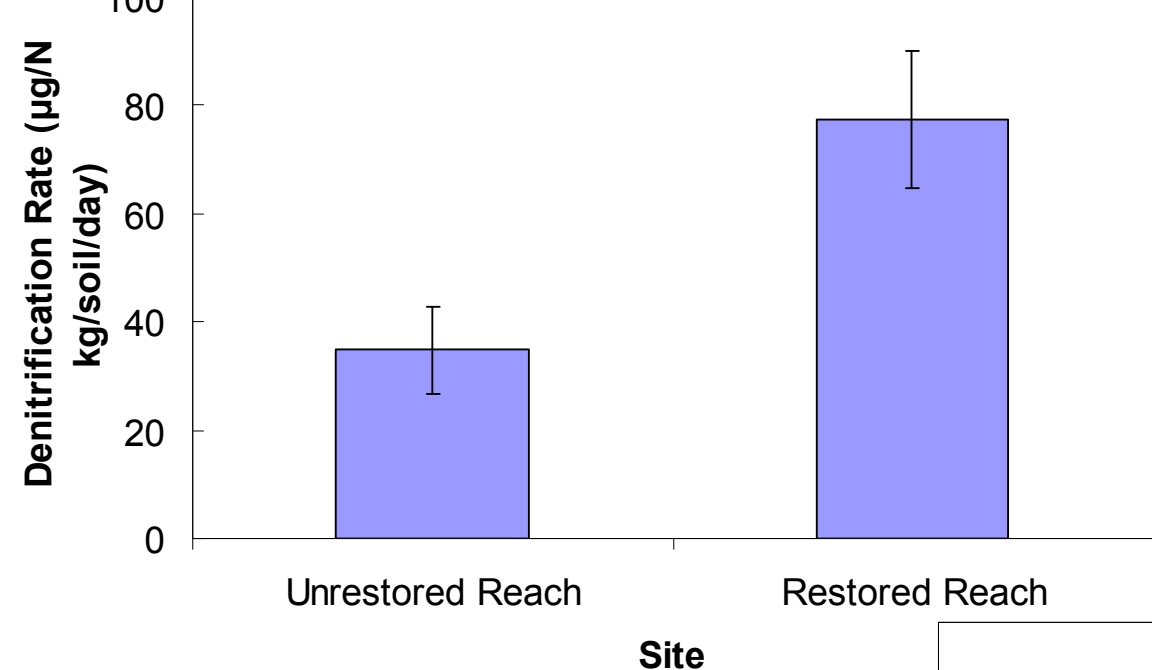
Dr. Sujay Kaushal and Kenneth Belt

Department of Geology and
Earth System Science Interdisciplinary Center
University of Maryland-College Park

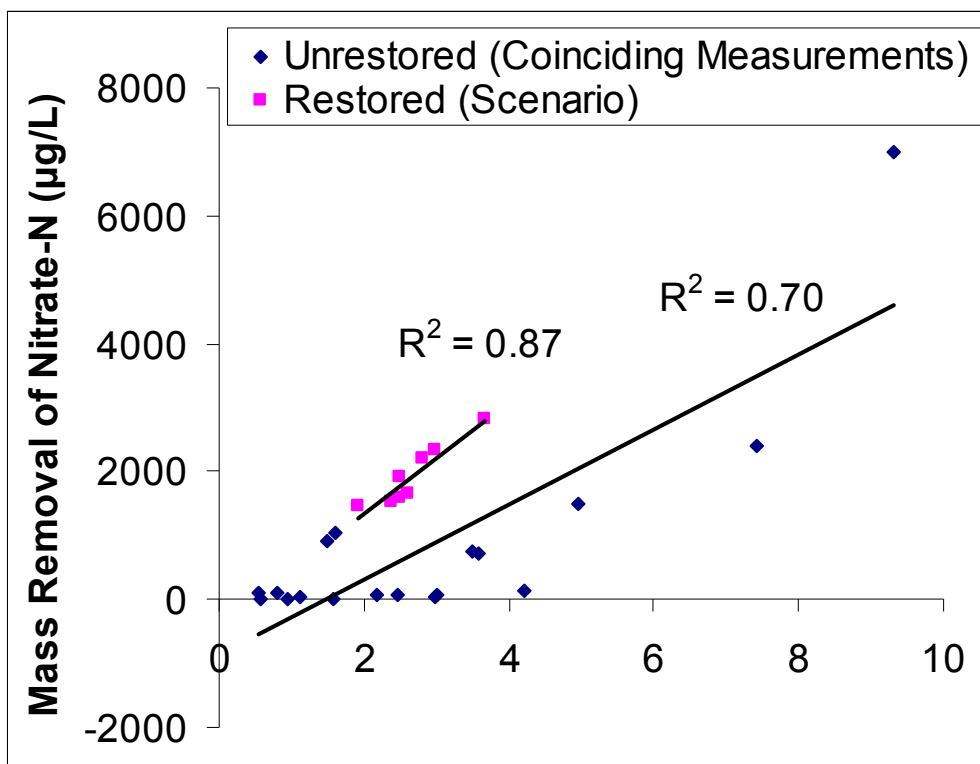
U.S. Forest Service
Northern Research Station

The Urban Watershed Continuum

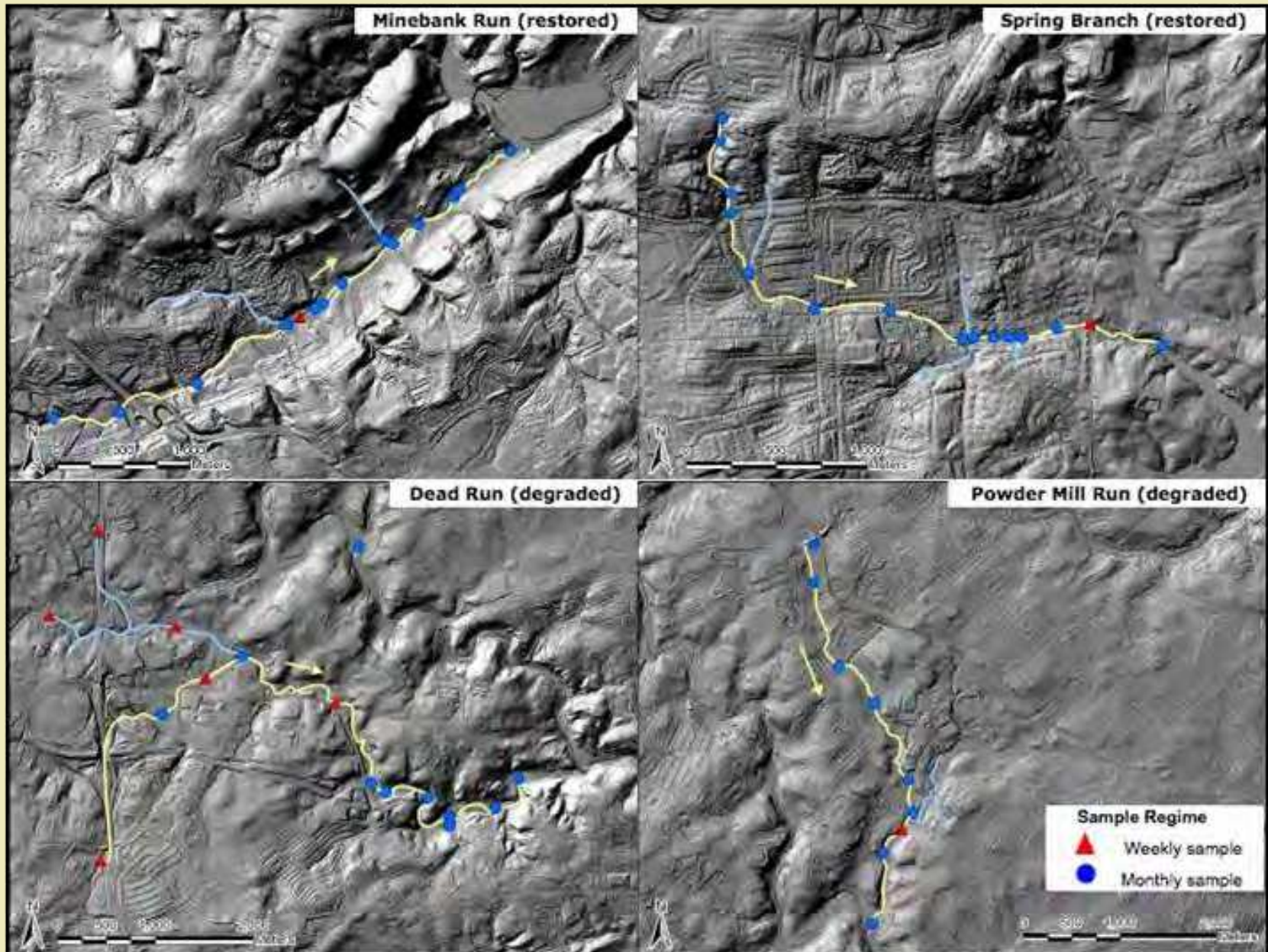




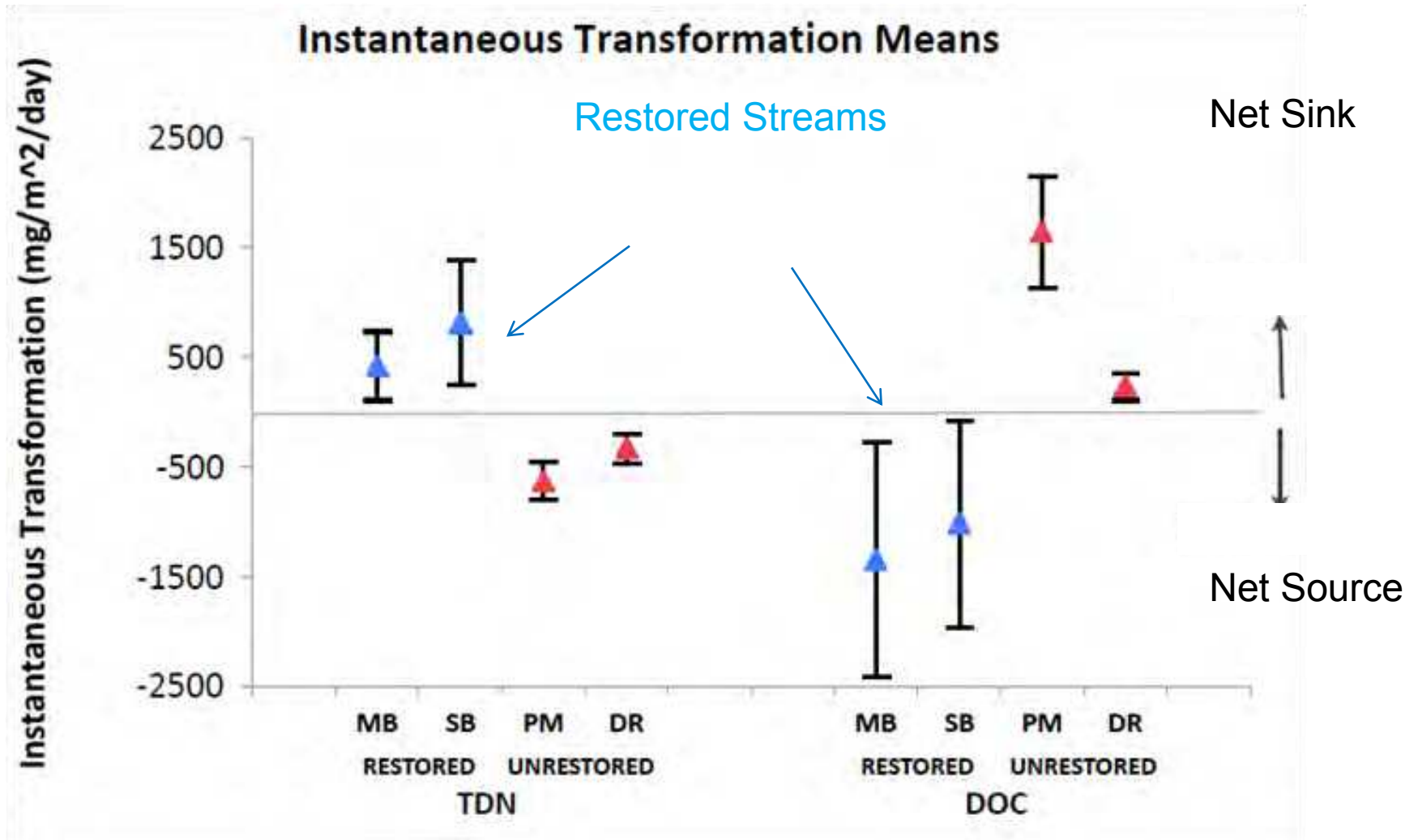
Managing Groundwater-Surface Water Connectivity



There is longitudinal performance variability across stream reaches



Managing N Sinks Along the Urban Watershed Continuum



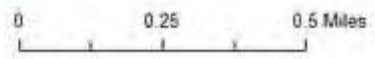
Stream Restoration and Stormwater Retrofit

Stormwater Retrofit

Phase 1
Early
Restoration

Phase 2
Later
Restoration

- Stream Restoration**
- SPRING BRANCH - PHASE I
- SPRING BRANCH - PHASE II
- Wet Pond Retrofit
- Roads



BALTIMORE COUNTY
MARYLAND

Prepared By: Watershed Management and Monitoring
Baltimore County Department of Environmental Protection
And Resource Management

Source Location: S:\WMM\Watershed Management\
Watershed Plans\Loch Raven\Spring Branch Plan
03.04.2008

Managing
Longitudinal
and Lateral
Transformations

Stormwater
Retrofit

Courtesy: Newcom

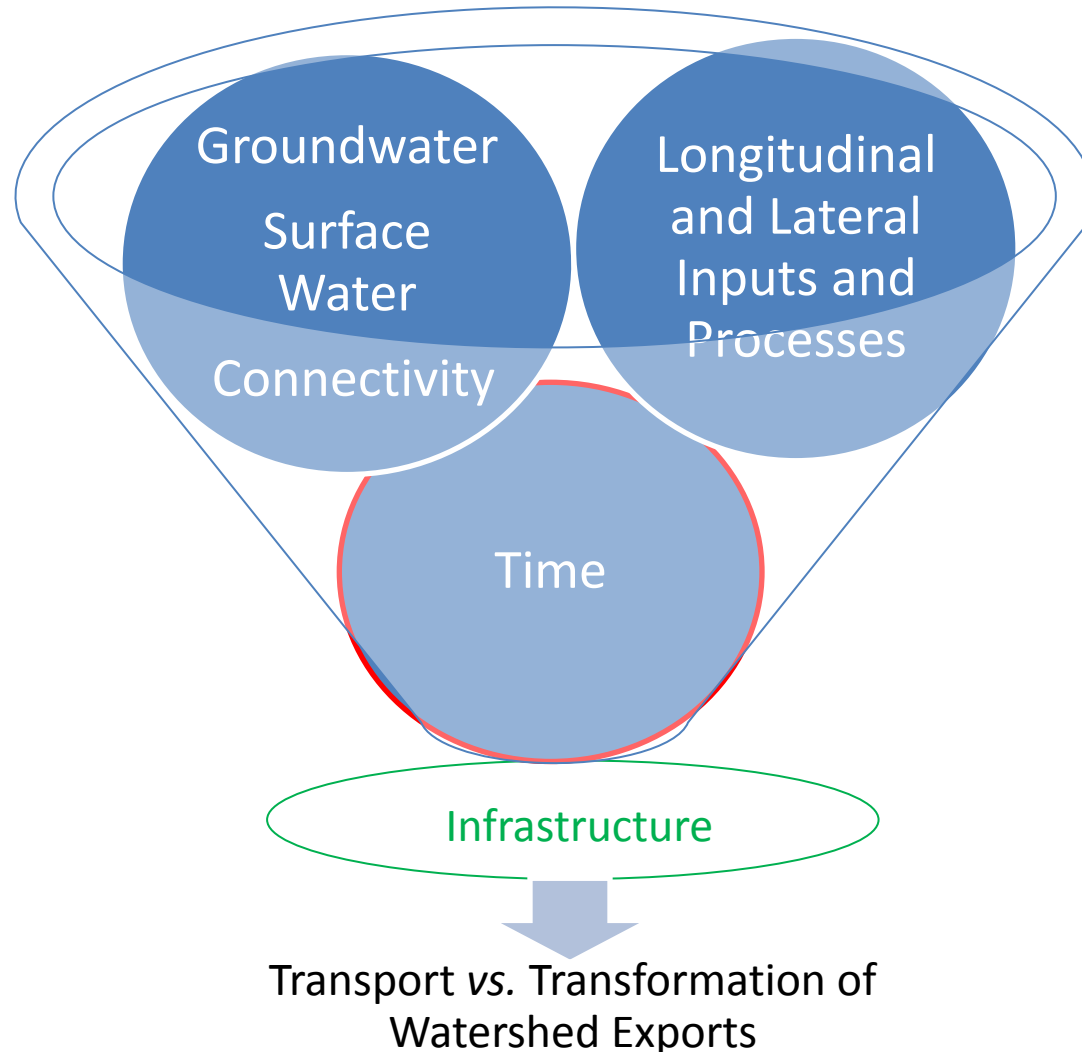


The Urban Watershed Continuum: Evolution of Ecosystem Function Over Time



Kaushal and Belt (2012)
Urban Ecosystems

The Urban Watershed Continuum: *Infrastructure & Ecosystem Function*



CONCLUSIONS:

- Relationship between infrastructure and ecosystem function across space and time
- Need to consider urban groundwater matrix and longitudinal/lateral inputs to understand variability
- The urban watershed continuum is a “transporter” or “transformer” of pollutants based on infrastructure