

## Illinois Innovation Network Research Conference on Sustainability

### ***Critical Environmental Interfacing, Ecosystem Service Resourcing, and Community Design Practices:*** **Comparative Cases and Operative Methodologies in Natural System Re-Development**

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#### **ABSTRACT:**

***“Every such organism is reflected and refracted in the changes it wreaks in its ‘milieu’ or ‘environment – in other words, in its space.” Henri Lefebvre***

This research collaborates interdisciplinary efforts to develop multi-dimensional strategies for resilient redevelopment for urban and community settings within Heartland floodplain regions. It compares case studies and methodologies, particularly in light of current crises and changes in practices toward land re-allocations, riparian setbacks, and eco-system resource interfaces within floodplains and conservation areas, which have shown positive effects in counteracting flood damages and fostering more productive living relations within natural environmental systems. However, scarce follow-thru research or large-scale project proposals have been performed to reevaluate multi-level, long-term outcomes and in developing formal design strategies as to how to best repair, revitalize, and re-form productively (and in new ways) in conjunction with natural systems, particularly at urban and community development scales that are most co-effectual. Multi-disciplinary university and stakeholder teams have been engaging varying complex challenges and documenting various ways to inform potential strategies. In alignment with multifaceted UN Sustainable Development goals, the research extends basic criteria in each key category addressing socio-cultural and economical concerns (e.g. equity and marginalized communities) with environmental concerns (e.g. degradation) as synonymous conditions to engage and address productively to mutual benefit. The research distills multi-dimensional performance indicators with inter-service resource capacities established between varying urban design approaches, green building guidelines, social impact studies, neighborhood and community quality indexes, environmental impact studies, ecosystem resource guidelines, conservation practices, etc. in order to seek synthesizing and co-substantial metrics that can be co-incorporated in establishing performance standards to inform design applications. The research, rooted in Critical Environmentalist approaches, reorganizes key facets within these varied approaches into cross-referencing guidelines (multi-dimensional score-card/ Brunswick lens) to re-inform the framework of proximal development, albeit at co-informing system scales, via varying levels of agential stakeholder engagements, community dialogics, and eco-system resources to supply useful frameworks that community organizers, designers, and planners can further cultivate.

**Keywords:** *Critical Environmentalism, Urban/ Regional Design, Architecture, Critical Theory, Embedded Case-study, Resilient Development Strategies, Socio-Environmental Design, Multidimensional wellbeing metrics, Eco-system and Environmental Resource Management.*