



Adaptive Governance of Urban Social-Ecological Systems

Ahjond Garmestani

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Green Infrastructure (GI)

- Parks, green roofs, wetlands and trees
- Engineered plant-soil systems
 - * **Rain gardens**



Soil surveys



- Adaptive Management (AM) Framework
 - AM = Iterative process
 - incorporates citizen and stakeholder input
 - AM: critical aspect of Adaptive Governance

Green Infrastructure (GI)

Direct GI benefits:

- Reduction in runoff volume
- Increased detention capacity
- Restoration of natural hydrologic cycle

Green Infrastructure (GI)

Co-benefits from GI:

- Aesthetics
- Recreation
- Pollination

Resilience

- For our purposes, urban watershed is in a degraded regime
- Resilience isn't a "good" thing here
- Must erode the resilience of the degraded regime
 - transform watershed to a more desirable regime that mimics the natural system

Adaptive Management

- Integration of resilience theory into natural resources management
- Alter management in response to monitoring



Adaptive Governance

1) Legislation and Accountability

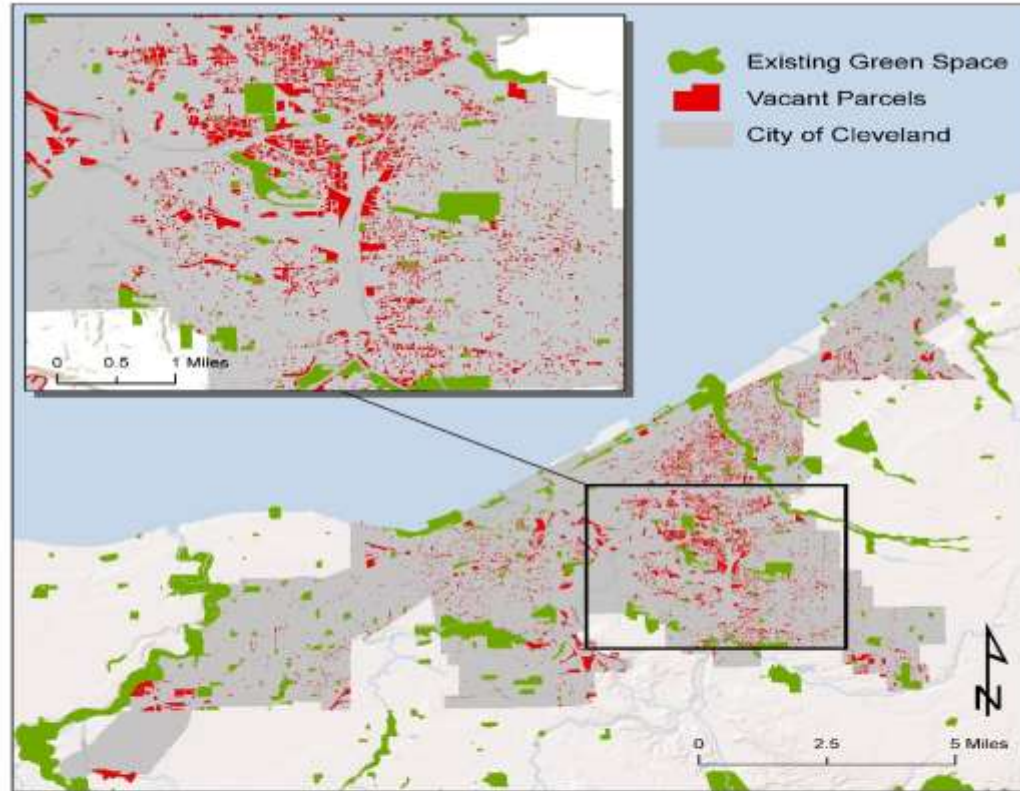
***Adaptive Management**

2) “Intermediaries”

***Bridging organizations (SVDC) and networks**

3) Matching organizations to the appropriate scale

***Panarchy**









Cleveland: Slavic Village Project

- Phase 1: Collected baseline data
 - Gathered data on soils, hydrological and pollinators
- Phase 2: Control sites and treatment sites (i.e., implement GI in vacant lots)

Slavic Village Project

- Cleveland Botanical Garden is a key player in project
 - * 12 rain gardens into vacant lots
- Plants were selected for provisioning of ecosystem services (e.g., pollination)
- Ohio State University planted 30 vacant lots (“minimalist” GI)

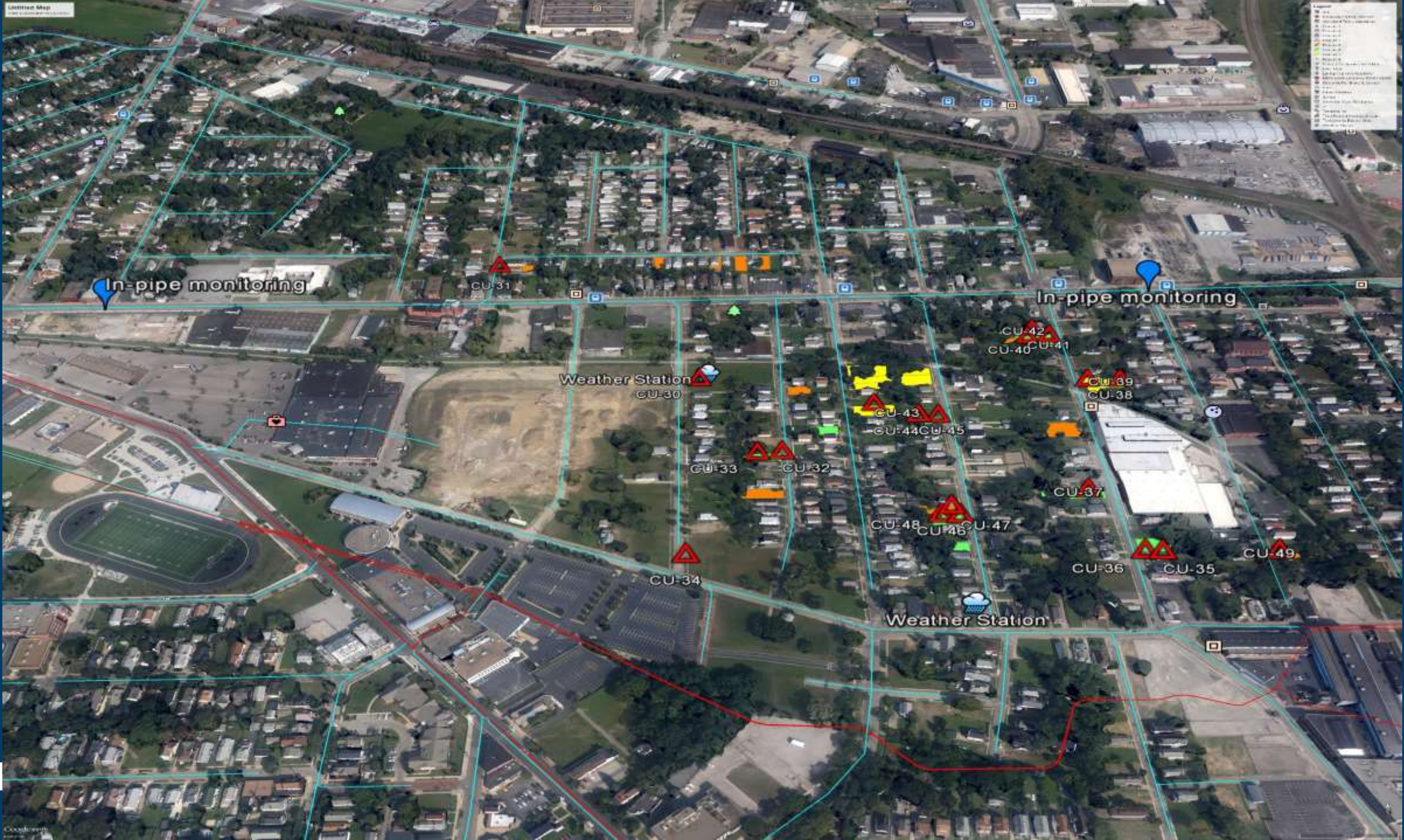
Pollinators

- Trade-off between citizen preferences and best plants for pollinators
- Why? If citizens don't like what they see they will be less likely to stay engaged in work
- Worse.....might chop plants down









Barriers

AM and Urban GI

- **High uncertainty**
- **High controllability**

Barriers to GI

Problems with AM

1. Control – NEORSD
*MOU not binding
2. Distance



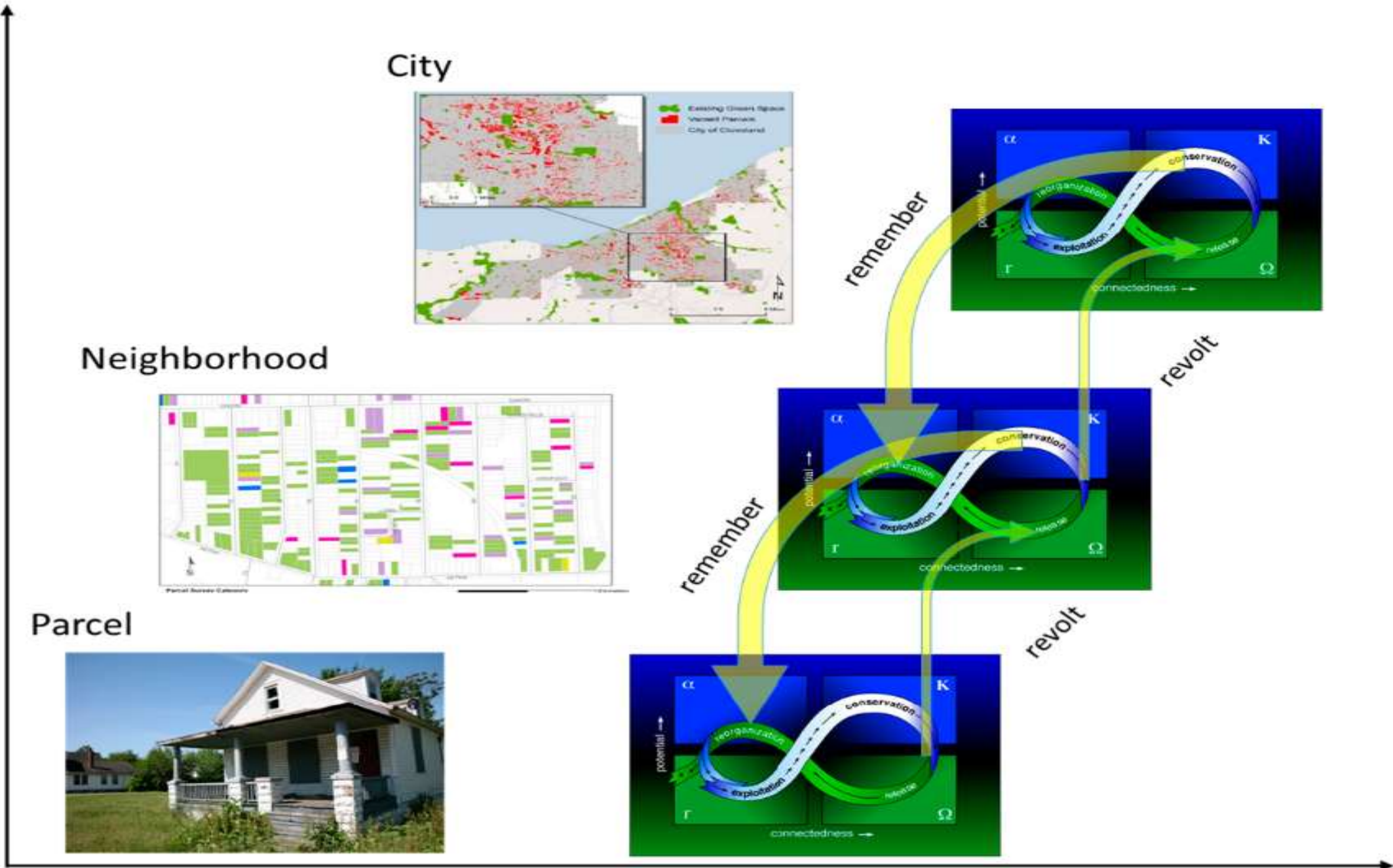
Bridges for GI

- **Adaptive element**
- **Monitoring = capacity
for adaptation**





Temporal scale



Spatial scale