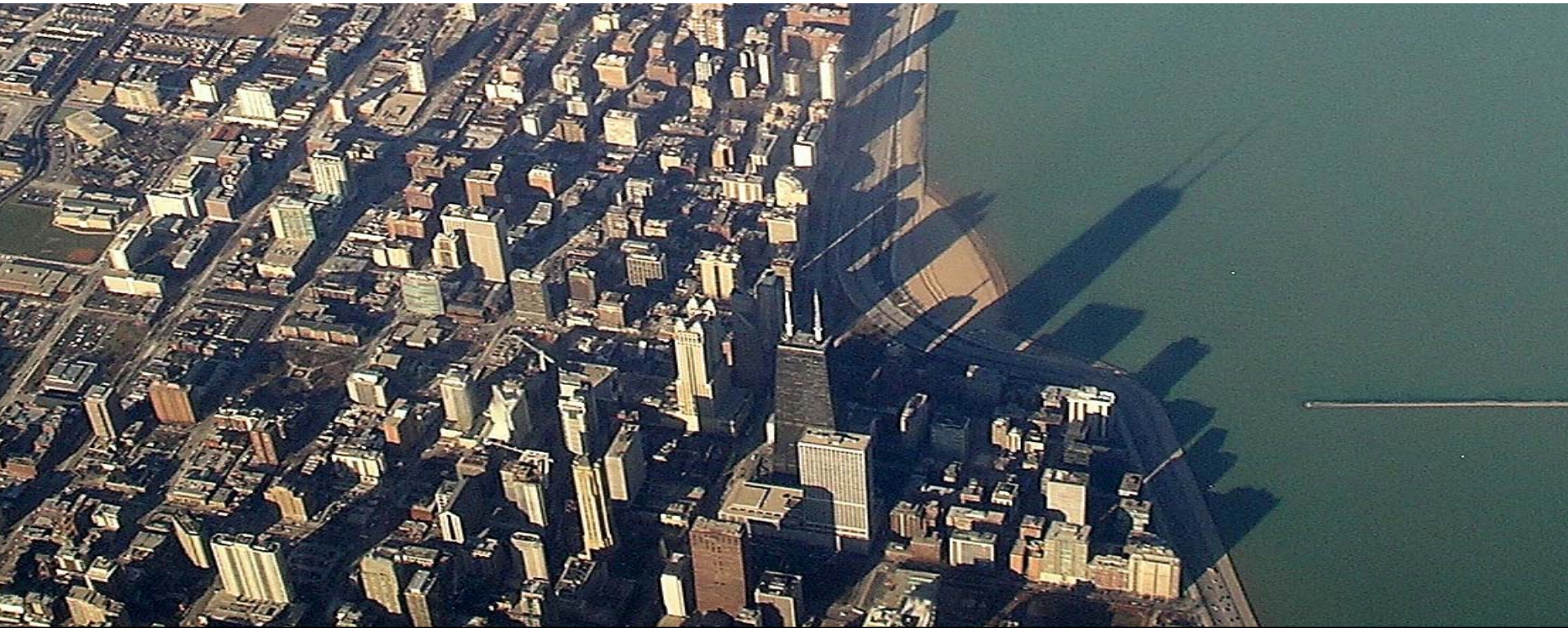


City Models, Metrics, and Future Scenarios: Basis for an *Urban Genome Project*?




***Jonathan Fink, Director
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Models, Metrics, and Future Scenarios

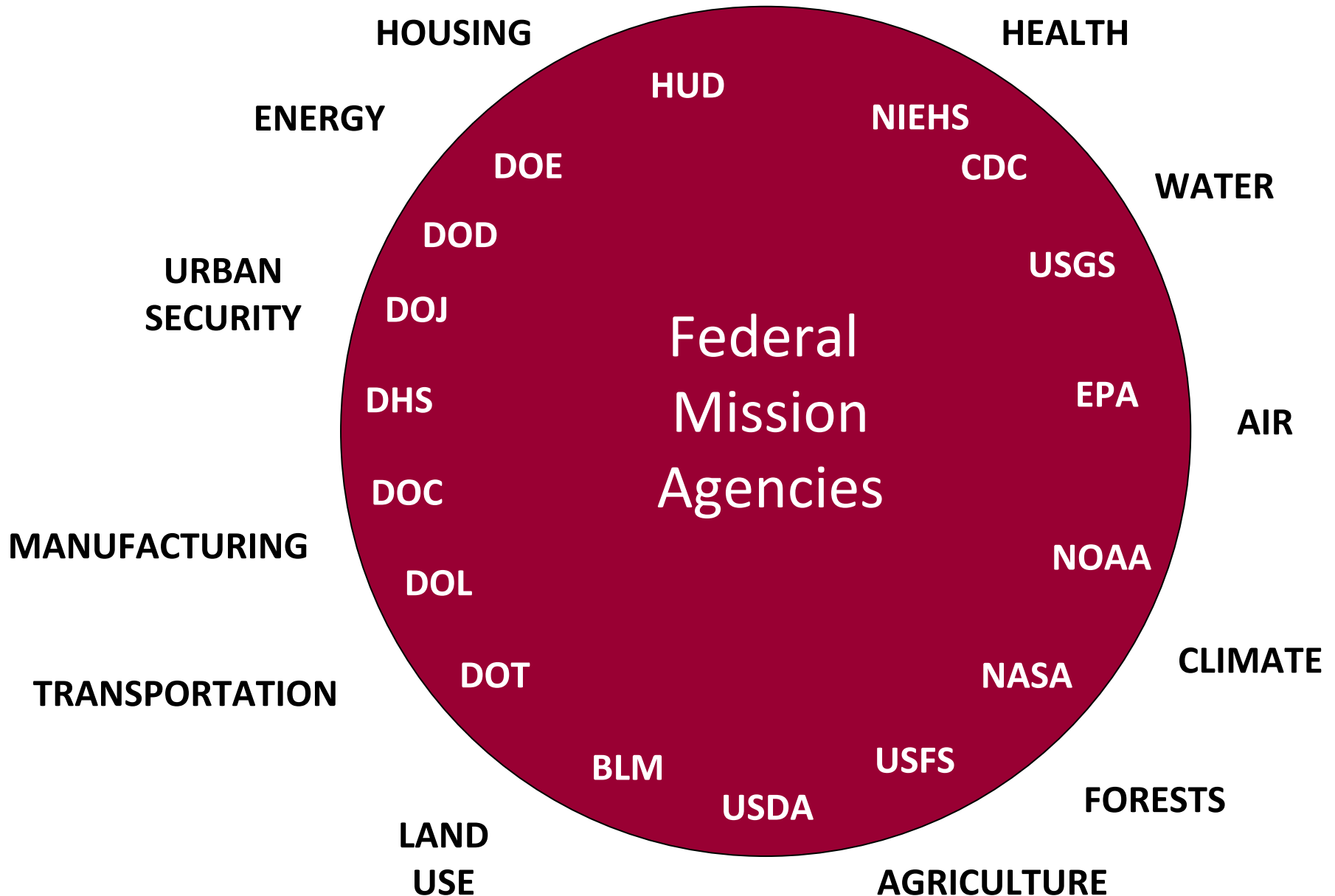
- 1) Cities are at an ideal scale to address global sustainability**
- 2) Goal of urban measurements is to improve sustainability**
- 3) Metrics -> models -> scenarios -> decisions -> actions**
- 4) Urban *systems* research is Balkanized in Federal government**
- 5) Most academic urban studies only focus on one or two cities**
- 6) A general urban framework could speed sustainable outcomes**
- 7) New confluence of urban advances warrants large investment**
- 8) Is a coordinated synthesis like *Human Genome Project* needed?**



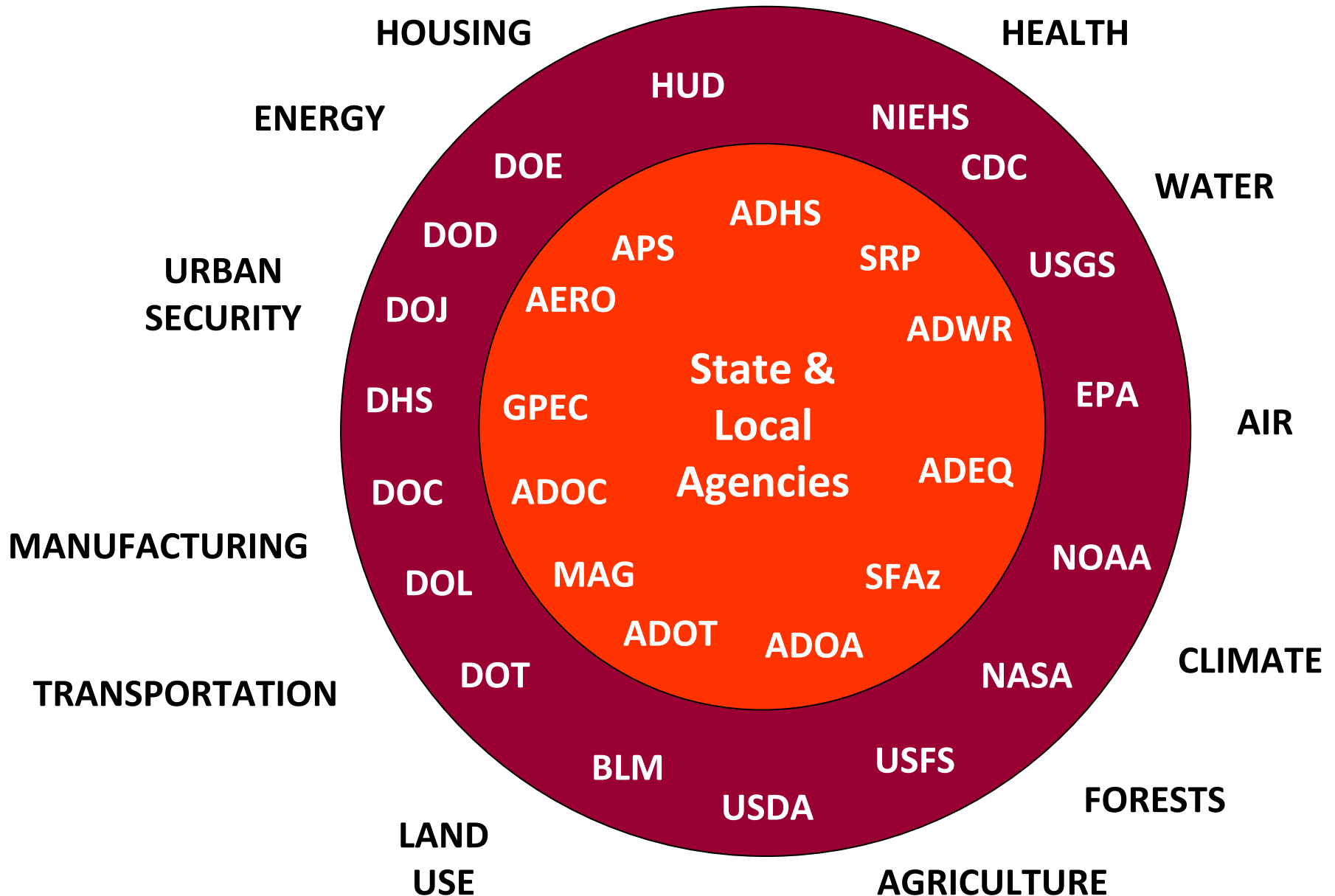
An aerial photograph of a dense urban landscape, likely New York City, showing a grid of buildings and streets. A large body of water is visible on the right side, and a bridge structure is partially visible. The image is used as a background for a text overlay.

*How can the study of
urban systems be
better coordinated?*

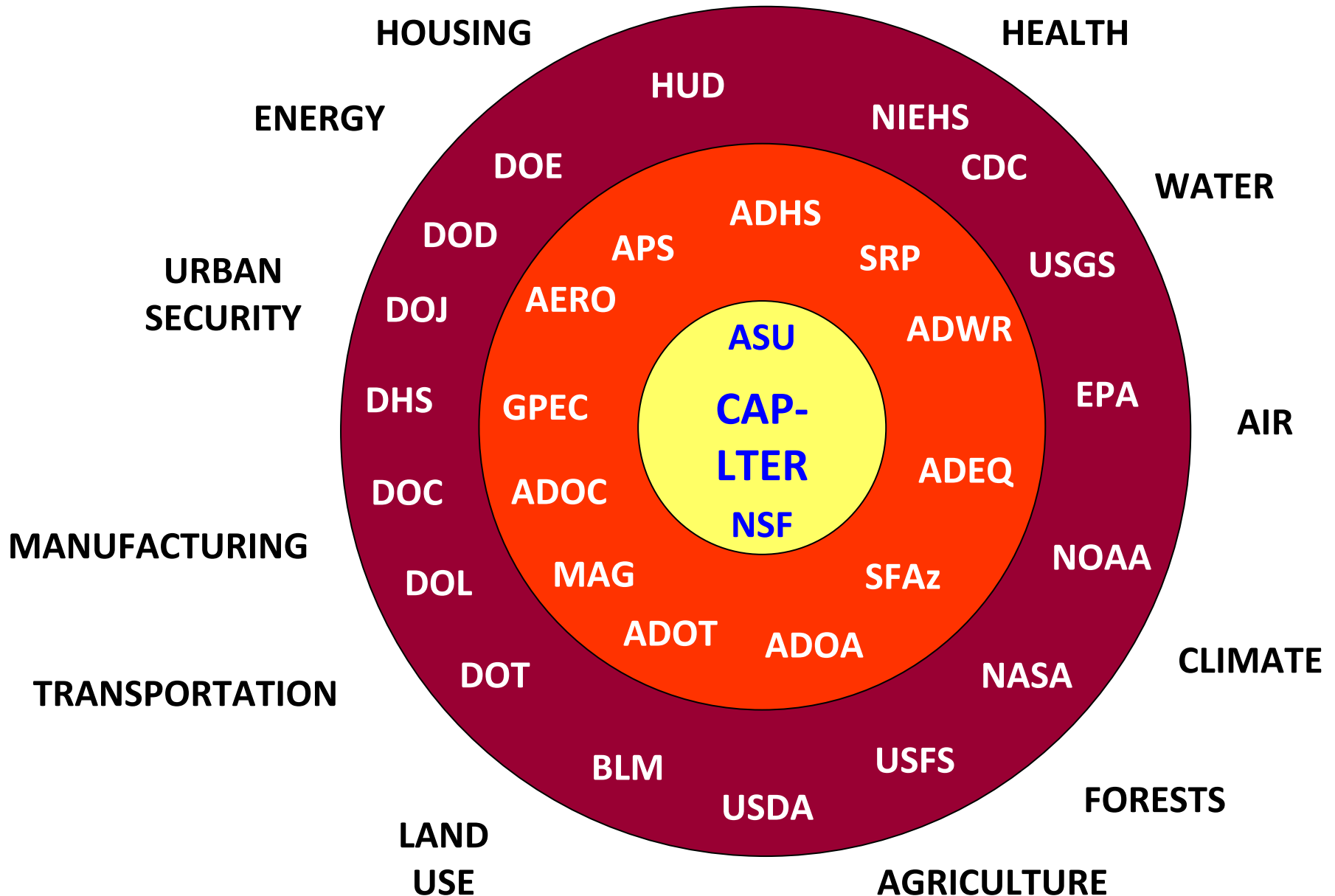
Federal approach to urban systems is Balkanized



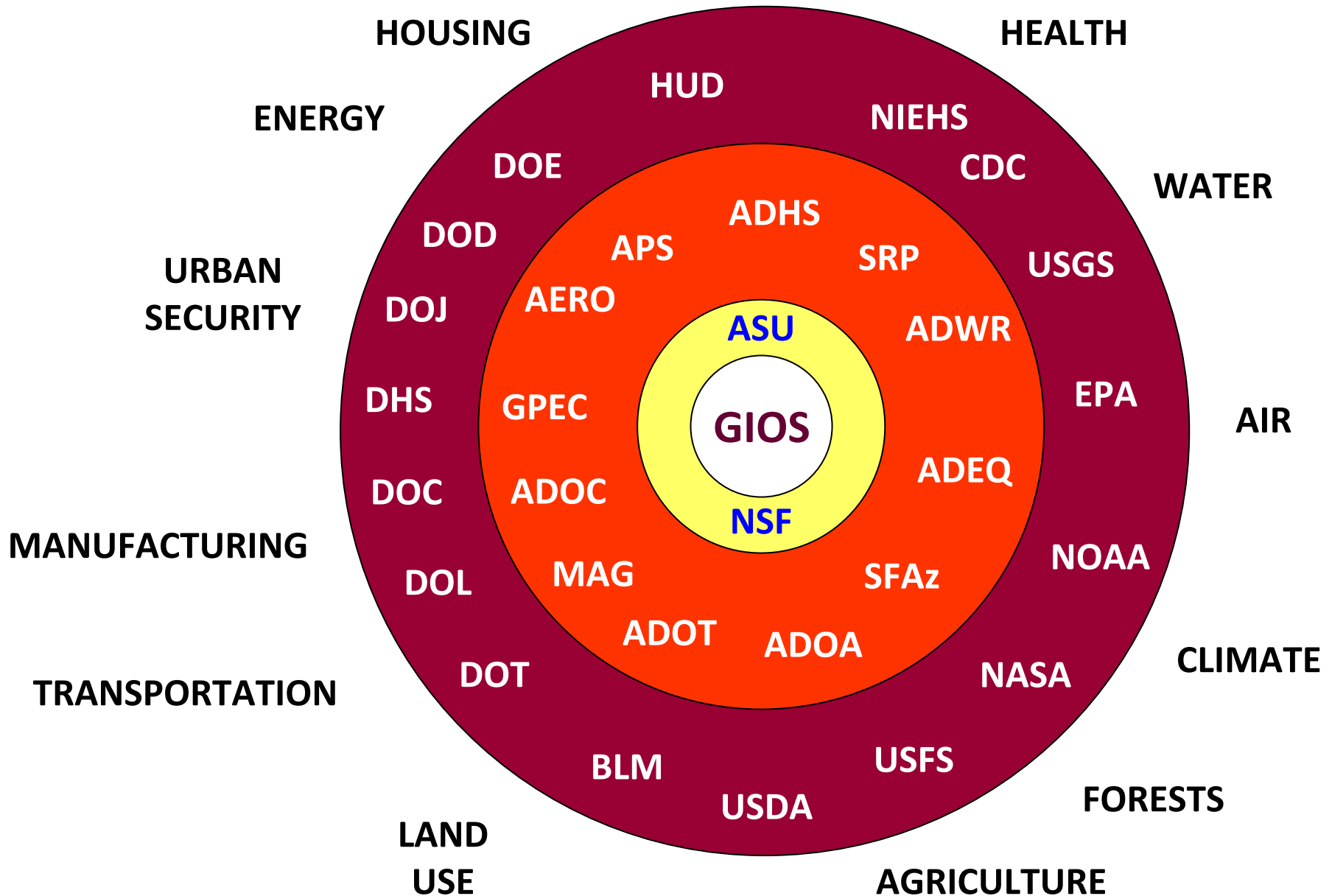
State and local agencies have same problem



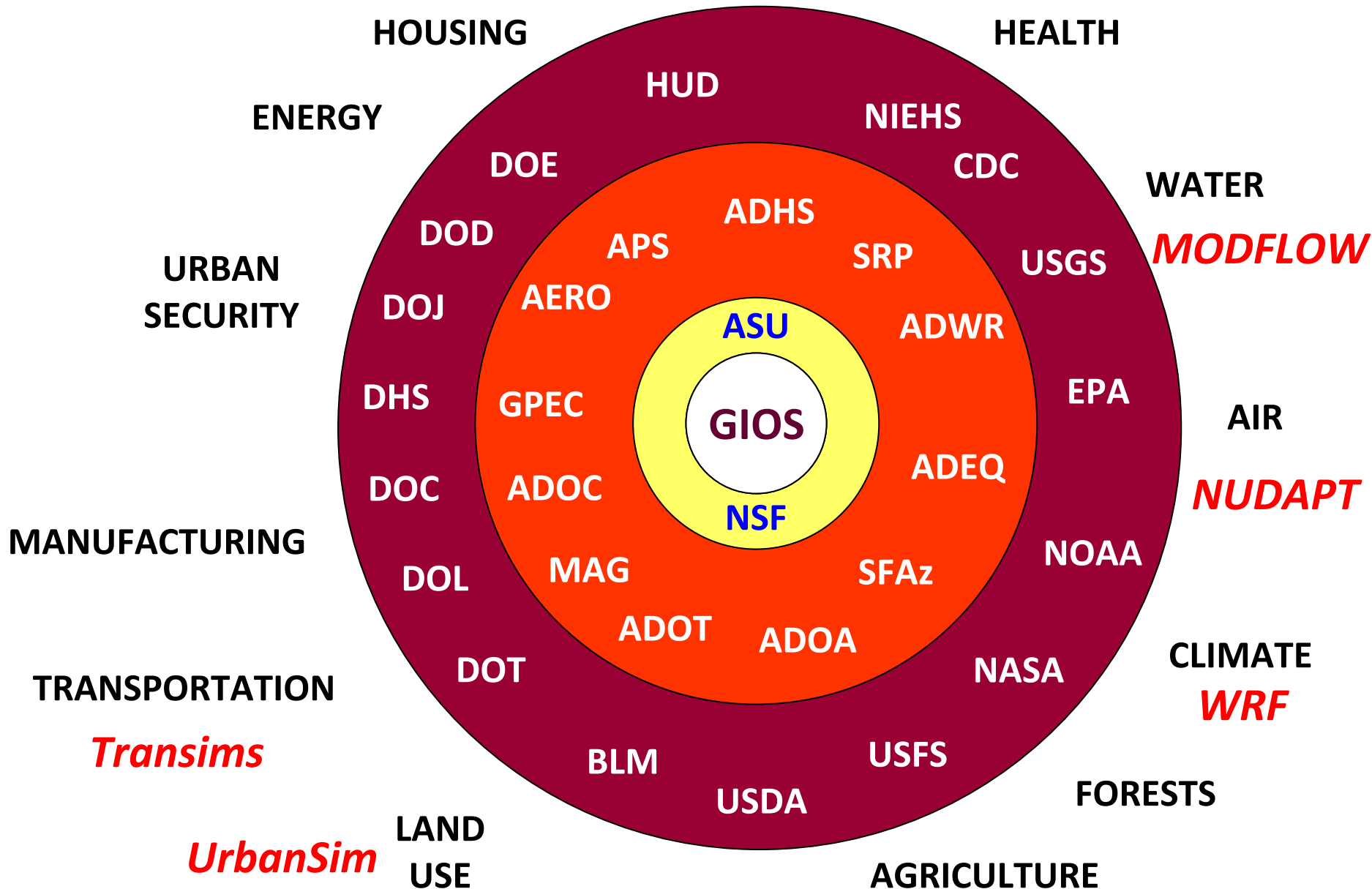
ASU used CAP LTER to connect pieces for Phoenix



Global Institute of Sustainability (GIOS) formalized the university's synthesizing role



Different models for different urban components



What measurements are needed?

- Urban complexity requires examination at many scales
- Some data sets should help link models across sectors
- What is measured depends on who pays for it, and why
- LTERs provide temporal, spatial, and biological coverage
- Novel measurement approaches can use social networking
- Remote sensing provides unique synoptic views of cities
- IT companies have expertise on data collection, dissemination



Emerging Urban Opportunities

- World Bank sponsored Global Cities Indicators Facility
- A network of Urban Long Term Ecological Research sites
- NASA urban remote sensing missions
- USFS ULTRA initiative
- EPA/DOT/HUD smart growth initiative
- IT corporations' urban initiatives (Cisco, IBM, Google)
- IPCC assessment to expand focus on cities
- National Academies' leadership (this forum)

Urban Genome Project?

- Human Genome Project sought to cure human diseases
- Urban Genome Project seeks to cure planetary diseases
- Each person has unique characteristics embedded in DNA
- Each city's unique characteristics are reflected in its “DNA”
- HGP required multiagency and private sector funding
- Urban Genome Project needs multi-sector support
- But who will oversee it? WB? UN? NAS? OSTP? NASA?

