# ITS Architecture in Rural Transit Systems:
## The Case of Kearney, Nebraska

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# Motivation and Outline of Today's Presentation

- Case Study on Coordination in Small Urban and Rural Transit Systems in the United States

- Terminology
- Designing and Implementing a Regional ITS Architecture
- Experiences of Kearney, Nebraska

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# Architecture in the Context of ITS

- A framework within which a system can be built
- Defines the pieces of the system and how information is exchanged between them
- Not a specific technology

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# Standards

- Standards specify how various technologies, products, and components interconnect and interact within a system framework
- Example: telephone

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# Coordination in Transit

The harmonious functioning of parts for most effective results

- Parts: users, providers, technology, vehicles, highway infrastructure
- Effective Results: any of a number of performance measures

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# The Regional ITS Architecture Development Process

- Get Started (1/6)
  - Identify Need
  - Define Region
  - Identify Stakeholders
  - Identify Champions
- Gather Data (2/6)
  - Inventory Systems
  - Determine Needs and Services
  - Develop Operational Concept
  - Define Functional Requirements

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# The Regional ITS Architecture Development Process cont.

- Define Interfaces (3/6)
  - Identify Interconnects
  - Define Information Flows
- Implementation (4/6)
  - Define Project Sequencing
  - Develop List of Agency Agreements
  - Identify ITS Standards
- Use the Regional Architecture (5/6)
- Maintain the Regional Architecture (6/6)

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# Kearney, Nebraska

- City of nearly 28,000 located on the Platte River in central Nebraska
- R.Y.D.E. (Reach Your Destination Easily) provides demand response service to Kearney and surrounding areas

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# What's been happening in Kearney

Implementing technology…

Coordinating information and resources between organizations…

…to increase the efficiency of the local demand response system

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# What's been happening in Kearney

- Routing & dispatch software
- Computer aided billing
- AVL/GIS Technology
- MDT Technology
- Established and maintain relationships between those within the system

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# Kearney's First Steps

- Looked at big picture including areas outside current area of operation
- Identified large number of stakeholders including:
  - Private transportation providers
  - Health Services
  - Schools
  - Emergency Agencies

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# Kearney's Needs & Services

- Improved Paratransit Management
- Advancing the Use and Coordination of AVL and GIS Systems
- **Enhance Data Sharing**
- Maintenance and Storage Facility
- Improving Incident Management
- **Emergency Response and Routing**

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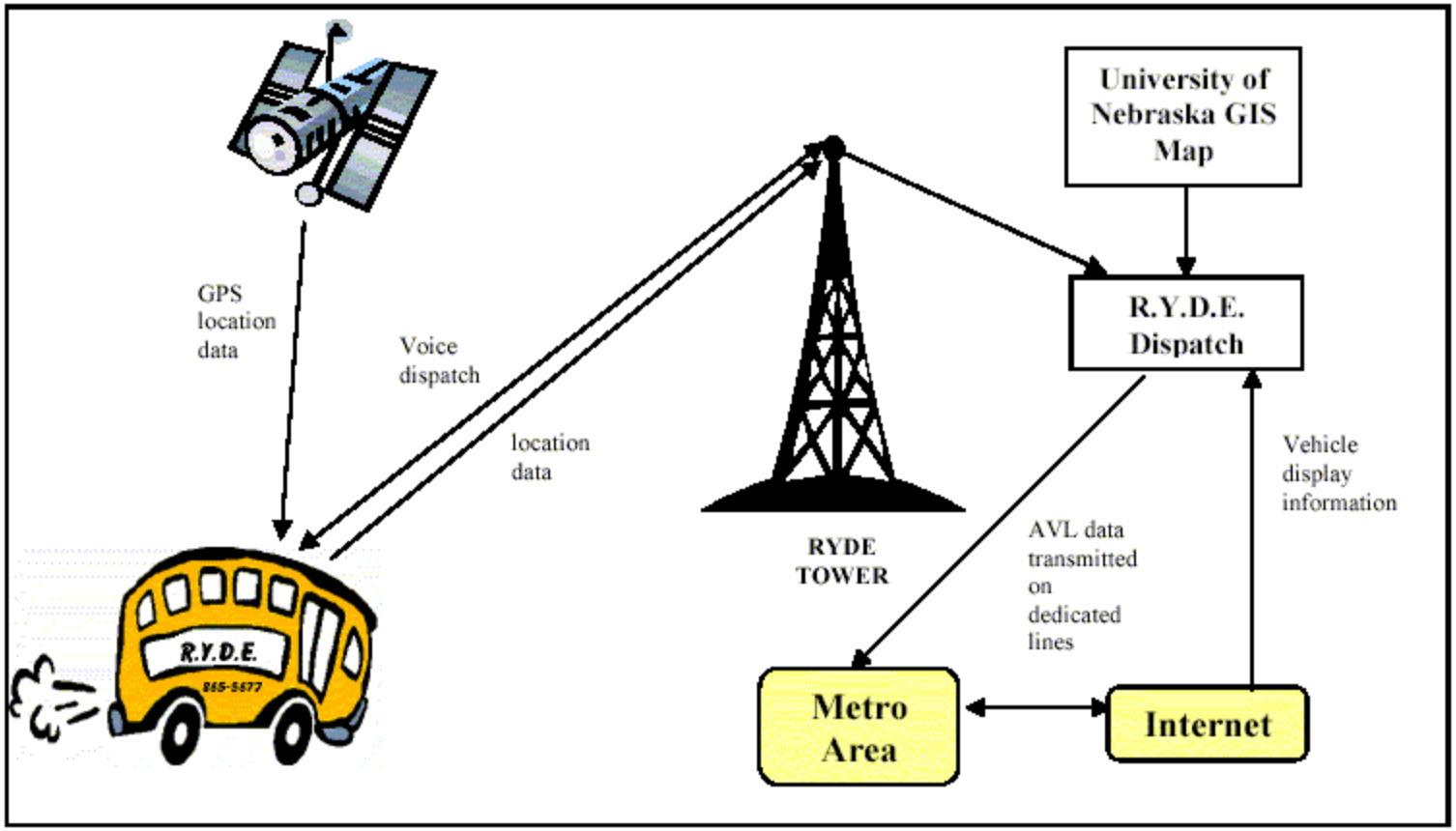
# Kearney's Operational Concept…



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# Define Sequencing

- Scheduled conservative pace of introduction of new technology to system
- RYDE is implementing its system over the course of four years, 2003-2006

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# Identify Standards

- RYDE identified 80 different national ITS standards that may apply to its projected operations
- It then reviewed a large number of documents to make sure that pieces of its new transit system were compliant with all applicable standards

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# Summary

- There are definite advantages in implementing a regional architecture using the FHWA/FTA process
- The experiences of Kearney are evidence of this in a small urban context

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