



# Validating Roadway Data Against a Linear Datum

The Testing of the Location Data  
Manager™

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# Introduction

- Project Background
- Project Scope
- Project Relevance
- Theories and Questions
- The Grid
- Development Methodology and Milestones
- Deliverables/Recommendations/Contributions
- Next Stages of the Project



# Problem Statement

- To design and develop a test environment that will verify Bentley Transportation's, Location Data Manager™ architecture, the NCHRP generalized model, and system-derived results, in a controlled and stable environment.

# Background Information

- The P075 Project (Location Data Manager™)
- NCHRP generalized model
- Open architecture



# Scope of the Project

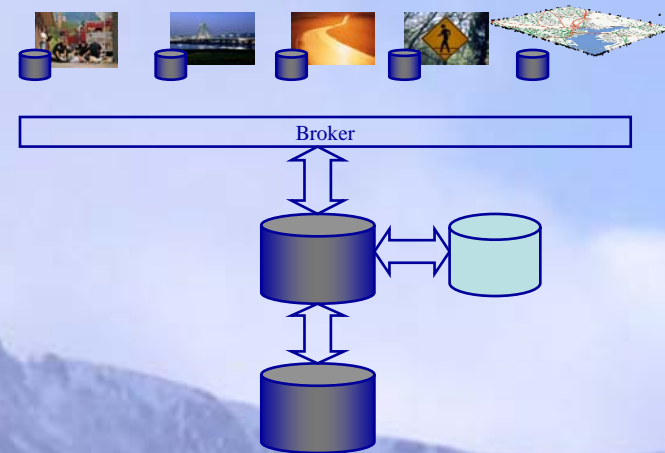
- To analyze, design, and development the “Test Rig” environment for validating the Location Data Manager™
- To create a test environment for the development team
- To create an expandable, reproducible testing and training environment
- Training of the LDM™ Product

# Project Relevance

- Create an environment that:
  - Test the technology
  - Test the architecture
  - Has stable known results
  - Is independent of customer data

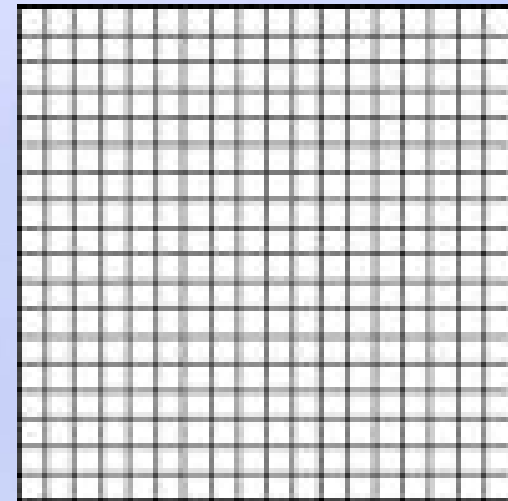
# Theories and Questions

- Does the architecture work?
- Does the “Generalized Model” work?
- Will the grid “test rig” environment work?



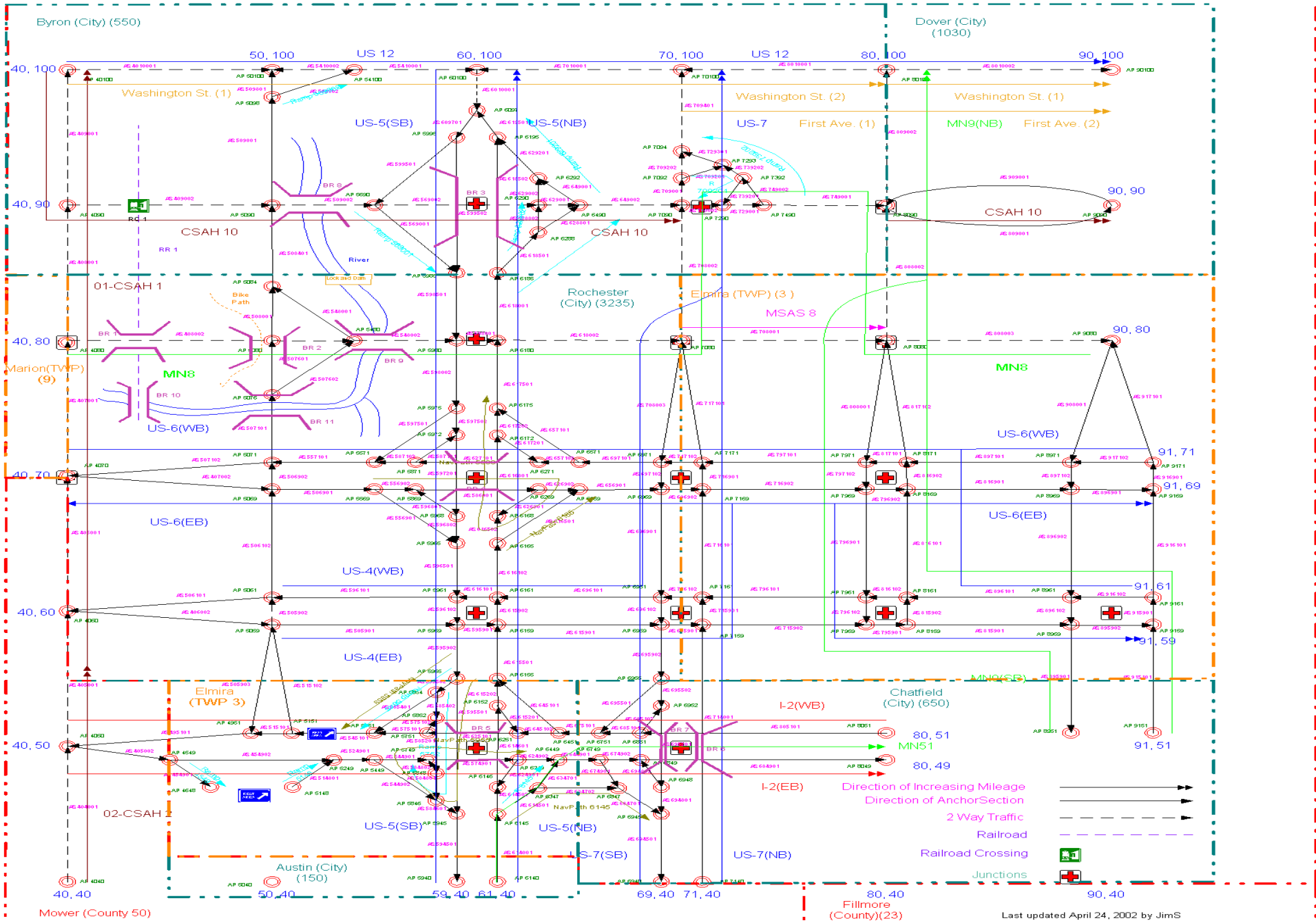
# The Grid

- Development of:
  - Known points
  - Known locations
  - Known distances
  - Known scenarios
  - Customer defined workflows
  - Known results

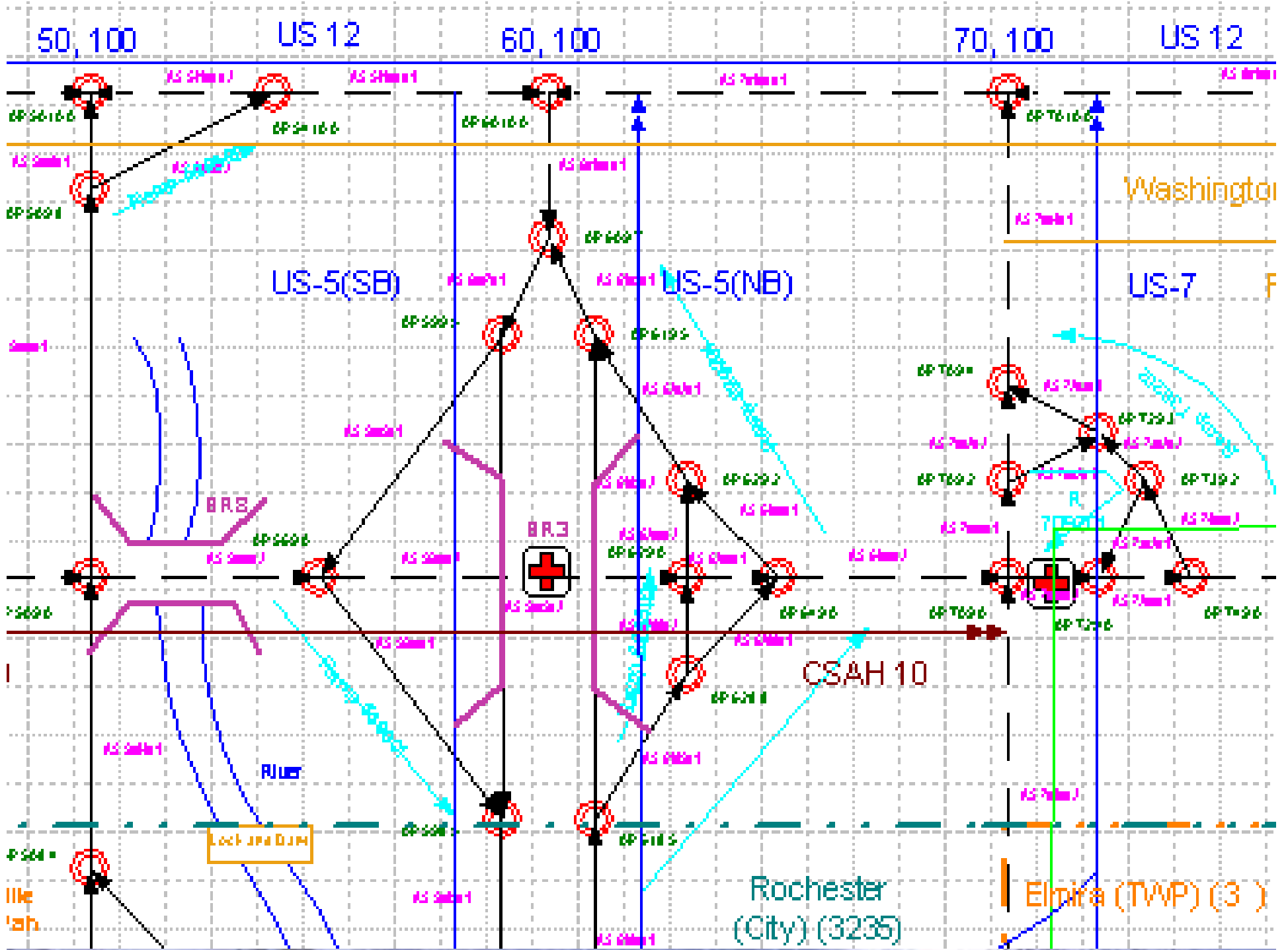




Olmstead (County 55)



Last updated April 24, 2002 by JimS



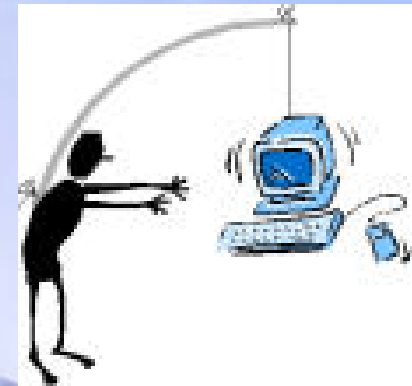
# Environment Creation

- SQL Loader
- SQL scripts
- SQL control files
- Batch files for easy re-creation



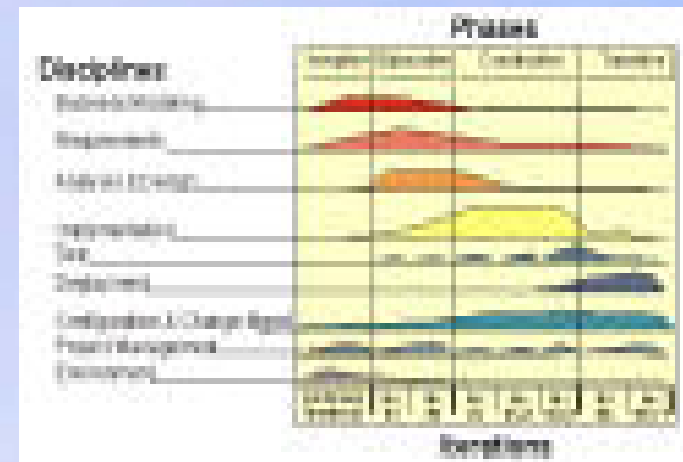
# Barriers and Issues

- Changing schema
- Defining all possible scenarios
- Development of requirements
- Technology compatibility



# Development Methodology

- Rational Unified Process(RUP)
- Iterative approach
- Develop a plan
- Use-case driven
- Test cases
- Continual feedback



# Events and Milestones

- Requirements capture
- Analysis and design
- Prototype creation
- Testing
- Deployment

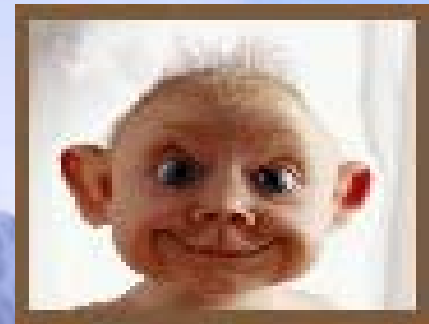


# Project Deliverables

- Test rig diagram
- SQL scripts and control files to build the environment
- The testing/training environment
- Installation and user documentation

# Recommendations

- Development of a stable test environment
- Development of a known environment
- Development of a reproducible environment





# Project Contributions

- Validation of the architecture and model
- Development of a stable testing environment
- Development of a environment for customer training

# Next Stages of the Project

- Continued scenario and workflow development
- Additional testing as features and functionality are added
- Developer and end user training environment

# Summary

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# Questions??



# References

- Scarponcini, P., (2002). Generalized Model for Linear Referencing in Transportation, *Geoinformatica*, **6**(1), 35-55.
- Scarponcini, P., (2001). Linear Reference System for Life-Cycle Integration, *Journal of Computing in Civil Engineering*, **15**(1), 81-88.