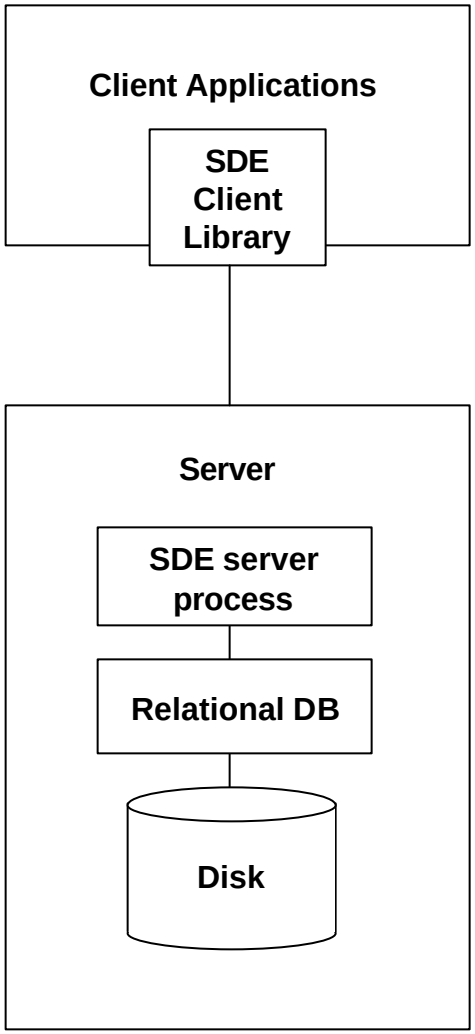
SDE at Union Pacific Railroad

Presentation for the Mid-West/Great Lakes ARC/INFO Users Conference
November 4, 1999

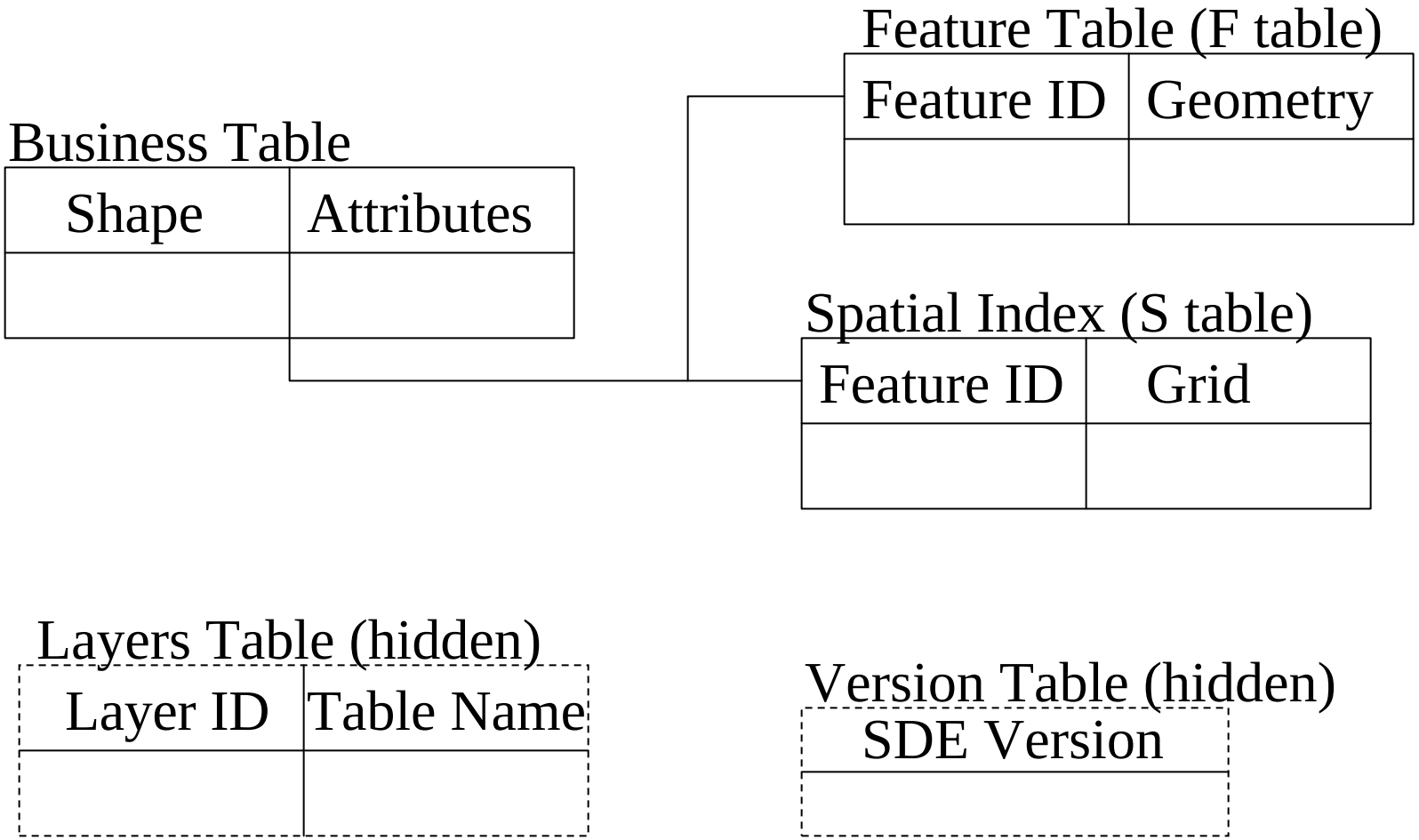
SDE Implementation

- First implementation (version 2.1) at Union Pacific in 1996
- Implemented version 3.0 January, 1998
- Upgraded to version 3.02 December, 1998

SDE Architecture



Tables Used by SDE



SDE Data Sources

- Geographic Data Technologies (GDT) Dynamap 2000
- Real Estate Microstation files
- Various sources for Union Pacific track networks.

Primary Use

- Real Estate
  - Leases
  - Contracts
  - Sales and Purchases
  - Appraisals

Additional Uses

- Street and Highway data for various applications
- Large Railroad databases
- Emergency Response System

Strengths of SDE

- Only practical solution for extremely large data sets
- Fast query for all size data sets with spatial index
- Robust product - maintenance free

Weaknesses of SDE

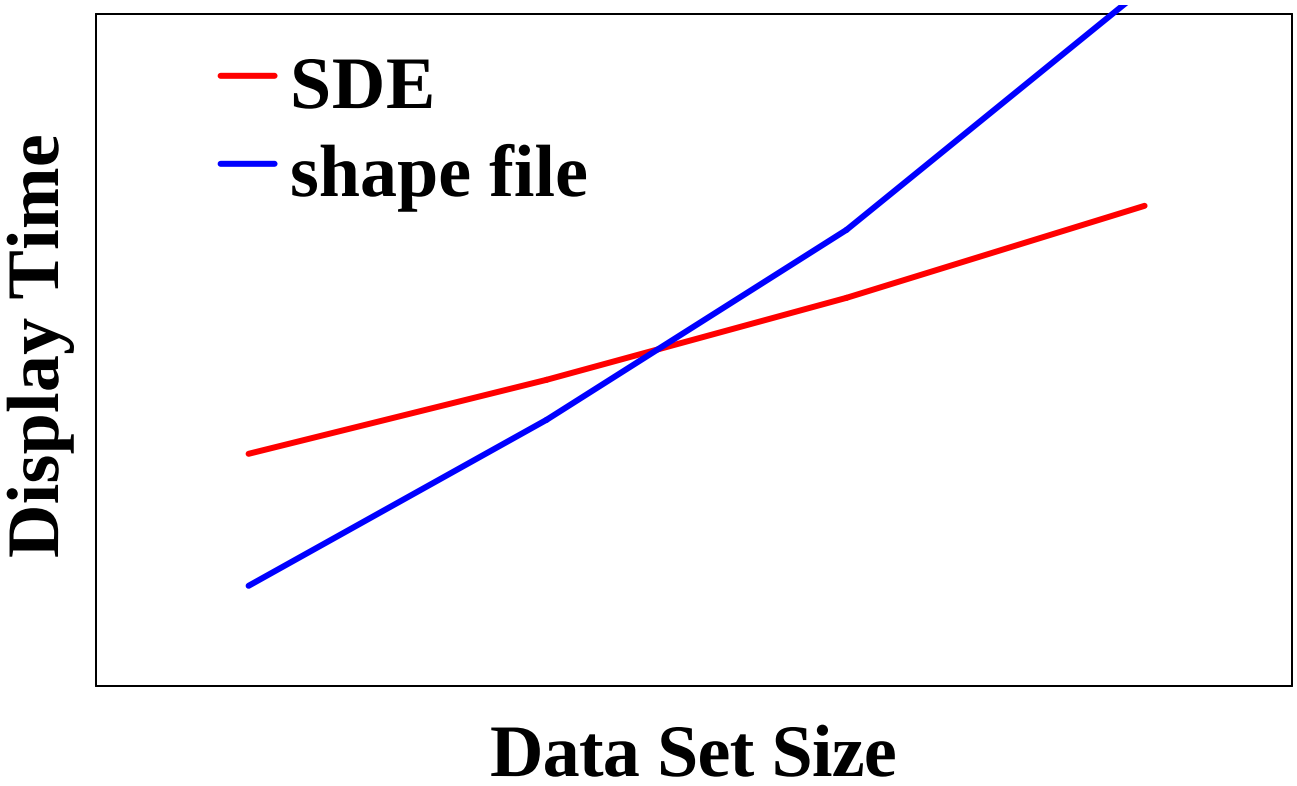
- Projection Engine interface through C API Prior to MapObjects version 2.0
- Data Entry directly from ArcView not supported
- SDE CAD Client an immature product

Other Considerations

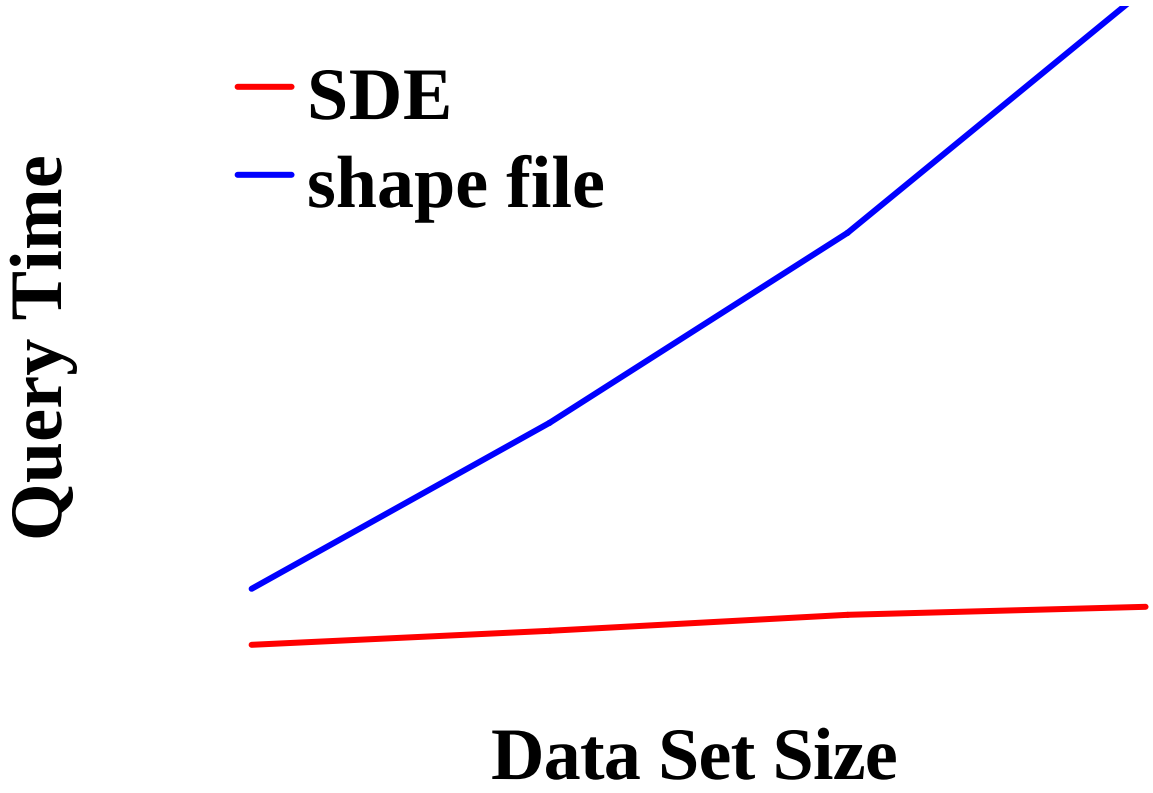
- Performance of Data Display is affected by Network

- Cannot be appreciated by casual GIS user

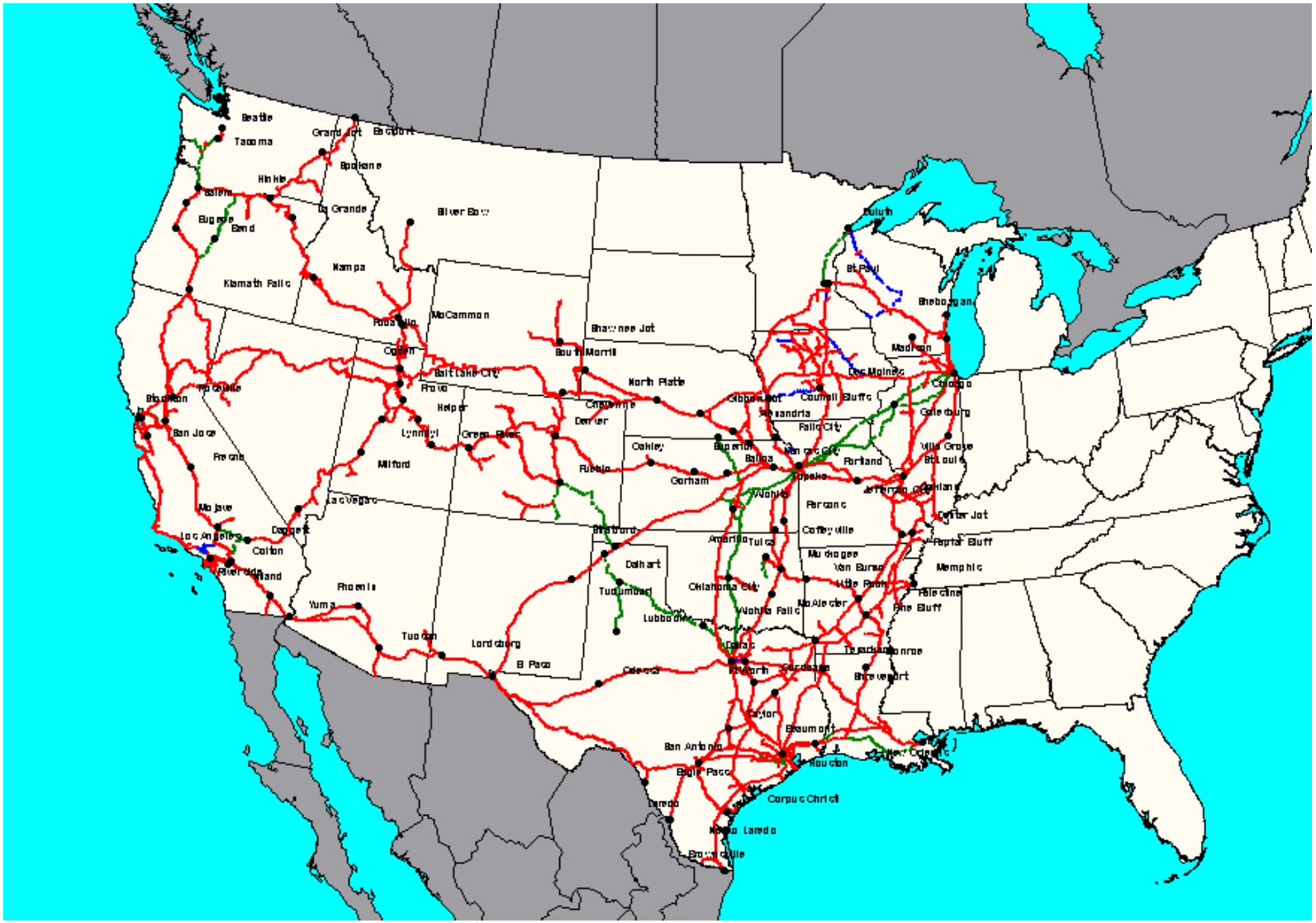
Comparison of Display Performance SDE to shape file



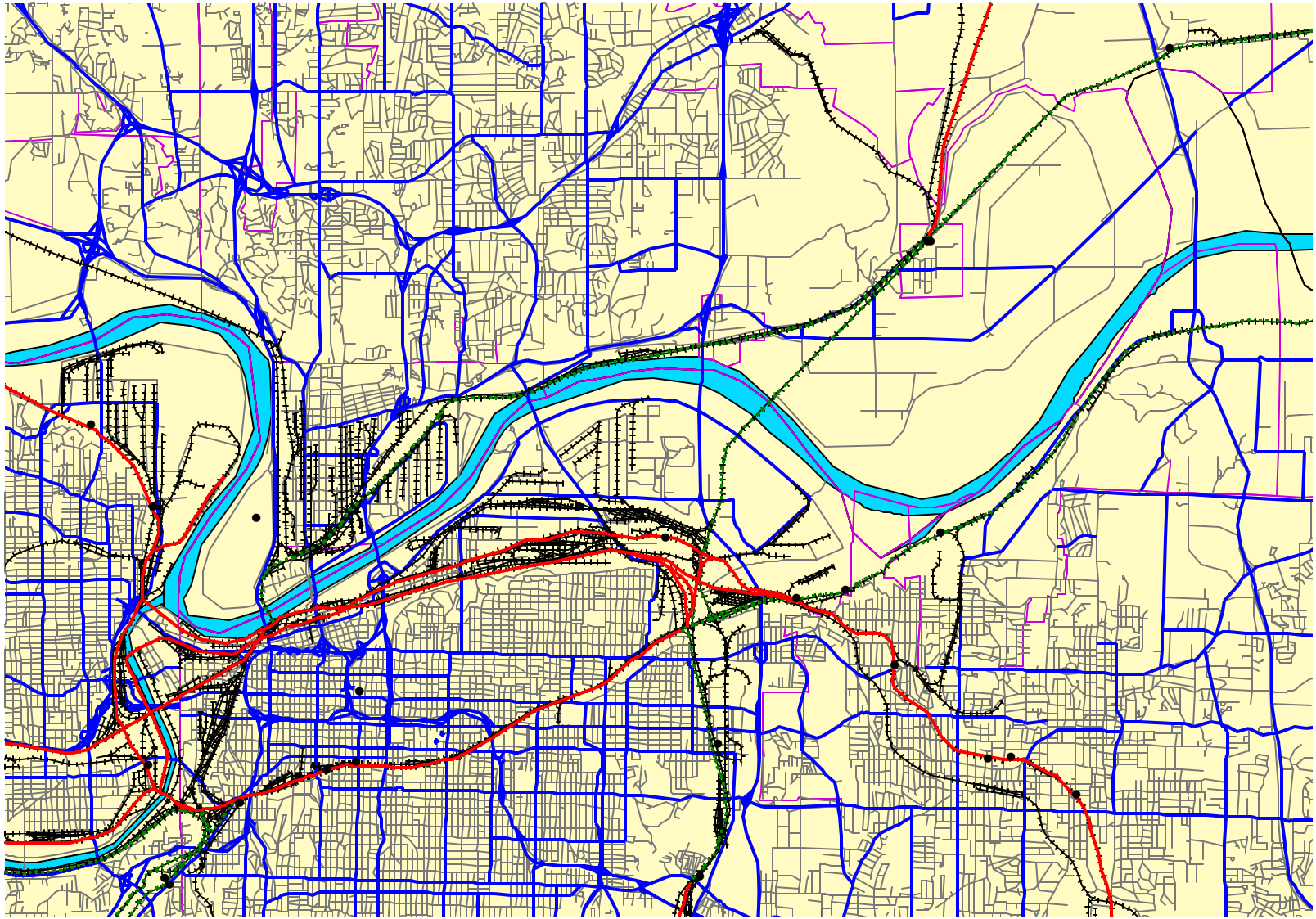
Comparison of Query Performance SDE to shape file



Union Pacific System Map

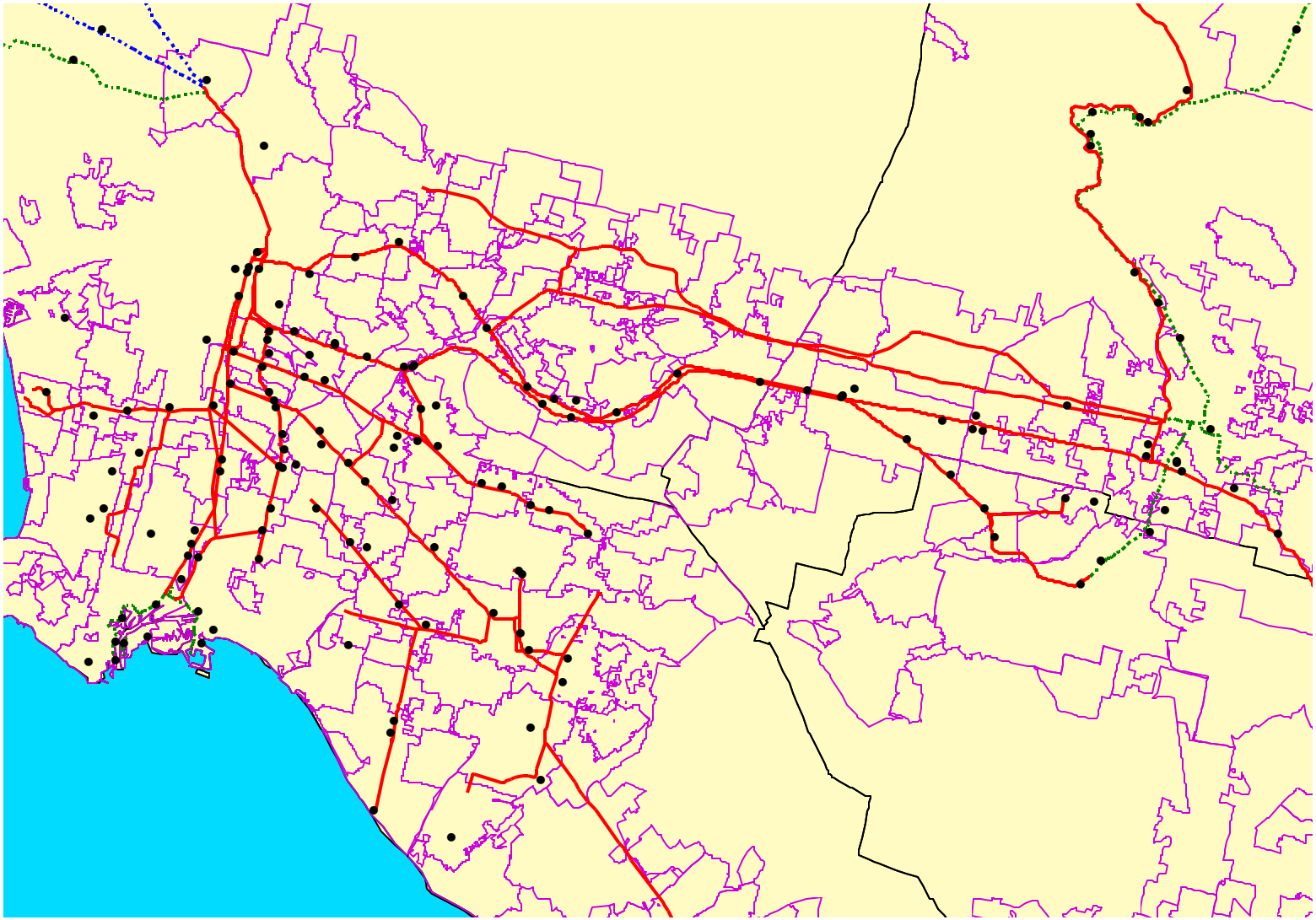


Kansas City - 14 miles x 10 miles

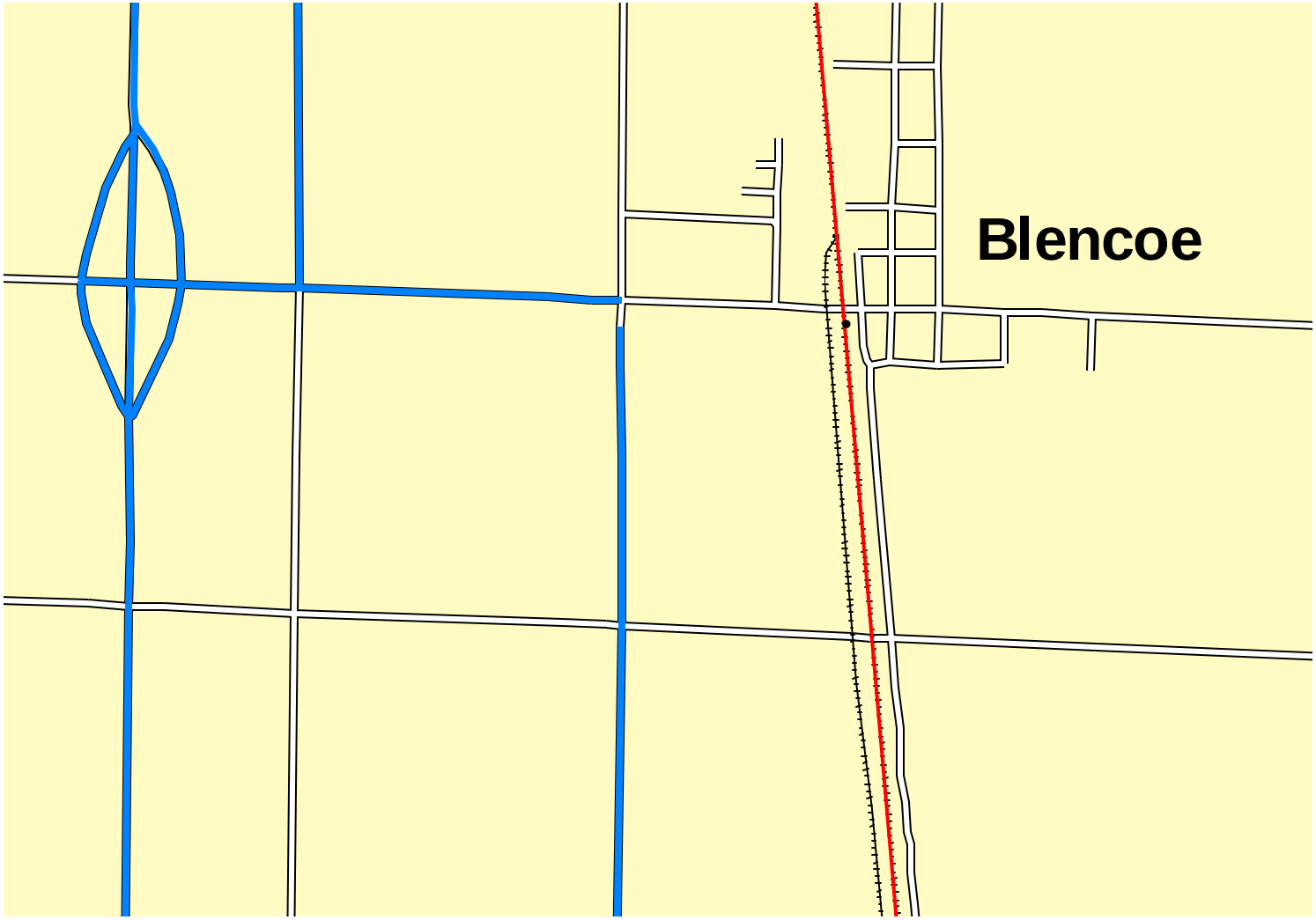


Kansas City - 2 miles x 3 miles

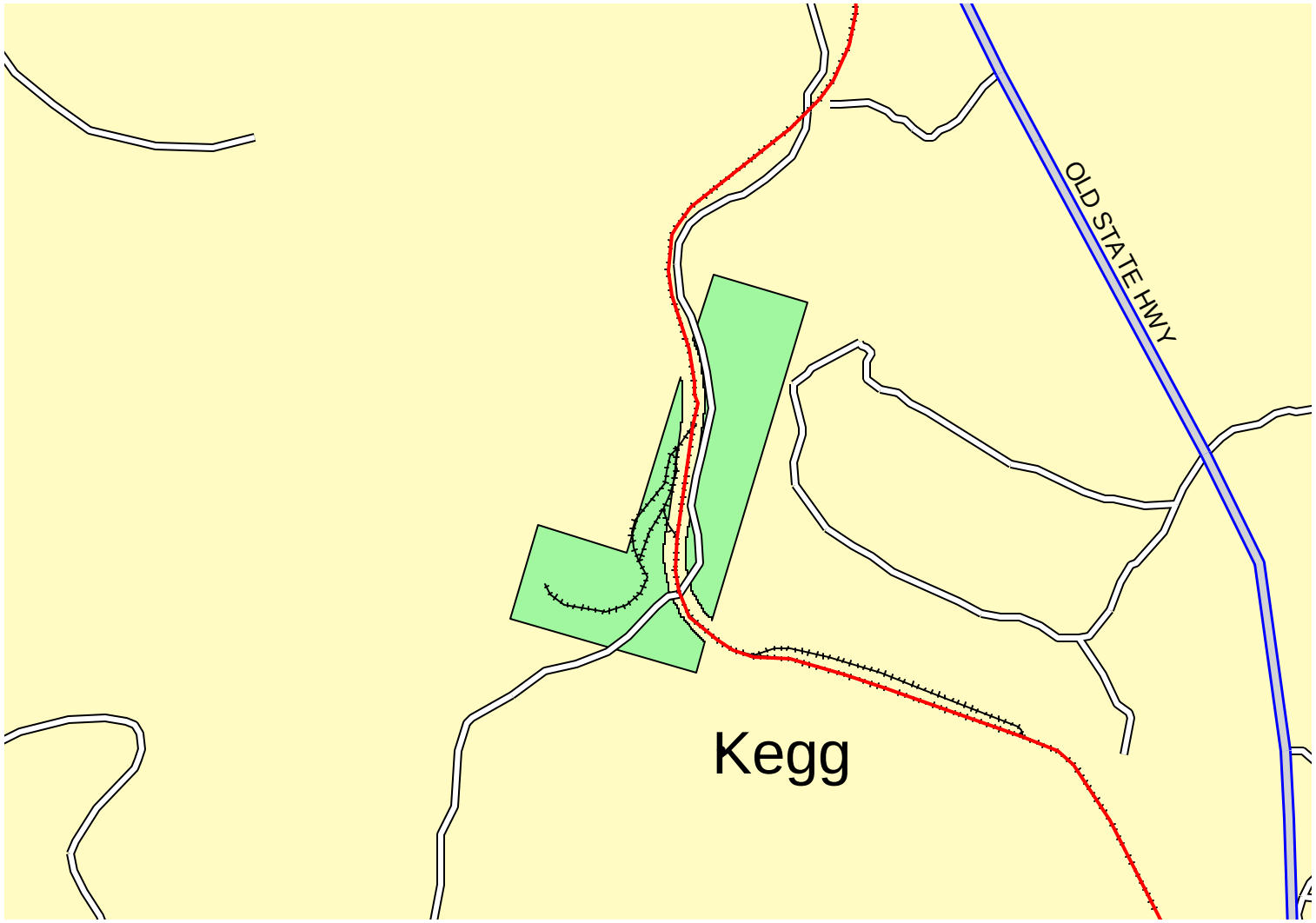
Los Angeles Basin - 50 miles x 70 miles



Small Towns also



Real Estate Sale Parcel



Summary Points

- Have both SDE administrator and database administrator attend the SDE Administration Class

- Avoid unrealistic expectations.

- Develop detailed plan of data implementation and use.

- Follow ESRI’s database tuning recommendations
- Learn about SDE configuration parameters - dbtune file
- Experiment with grids
- Compare SDE to alternatives

- Keep licensing costs in mind - both SDE and data

- Keep expertise of users in mind - use programmed interface for all but most experienced users

- For the future how will Oracle Spatial Cartridge and SDO compare to SDE?