## Progression of Stages in Efforts to Automate the Review of Zoning Variances

| Stage | Motivation | Process | Tools | Issues and Lessons |
|---|---|---|---|---|
| Encode and analyze one flat file of static data | Assemble facts about number, nature & outcomes of zoning variance cases | One-person project (summer intern) on agency's XT with standard software | dBase III+, Lotus 1,2,3, Systat, Reflex on micro | Variable definitions, encoding & accuracy; dataset size & speed |
| Link encoded data with other datasets | Interpretation requires comparison with other demographic and neighborhood data | Encode neighborhood statistical area & link to Census data; 1 analyst | dBase III+, Lotus 1,2,3, Systat | Early attention to geo-coding, moving data among packages, standard data formats |
| Look for spatial patterns | Use thematic maps to compare patterns across neighborhoods | Use micro to digitize boundaries & draw shaded maps; 1 analyst | Lotus 1,2,3; Multimap; & Atlas | Boundary files & graphics: learning & support strategies; graphic standards |
| Provide on-line queries of static database | Allow "comparable case" analysis by planners reviewing new zoning variance appeals | Develop inquiry screens & documentation for use by others | dBase III+ for use by others; screen generators & .prg programs | Develop application elegance/ease-of-maintenance tradeoffs |
| Provide on-line queries/update | Track progress of conditionally | Develop multi-table database & | Query languages & reports | Value/complexity of truly relational dbms |

| | | | | |
|---|---|---|---|---|
| s of dynamic database | approved variances subject to a design review | complex inquiry/update screens with edits; multiuser setting | using dBase III+ and INFORMIX -SQL on network | & standard query languages; record locking |
| Link database, analysis, and interactive graphics tools | Allow on-line spatial analysis of variances in terms of viewsheds, zoning maps, traffic | Link dbms, analysis and mapping tools on graphic workstation | INGRES, ODYSSEY, 20/20, & DIME files on IBM RT, DEC MicroVax II | Value/complexity of integration efforts & maintenance/use of multipurpose cadastres |

**Source:** "Incorporating GIS Tools in Land Use Planning: Lessons from a Micro-based Zoning Example", Bizhan Azad and Joseph Ferreira, Jr., URISA '87, Florida.