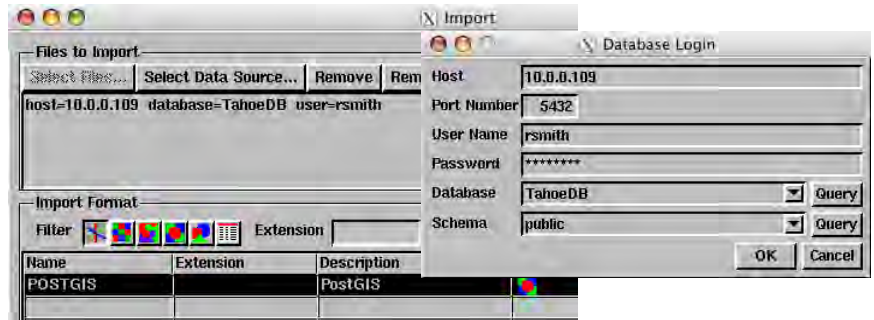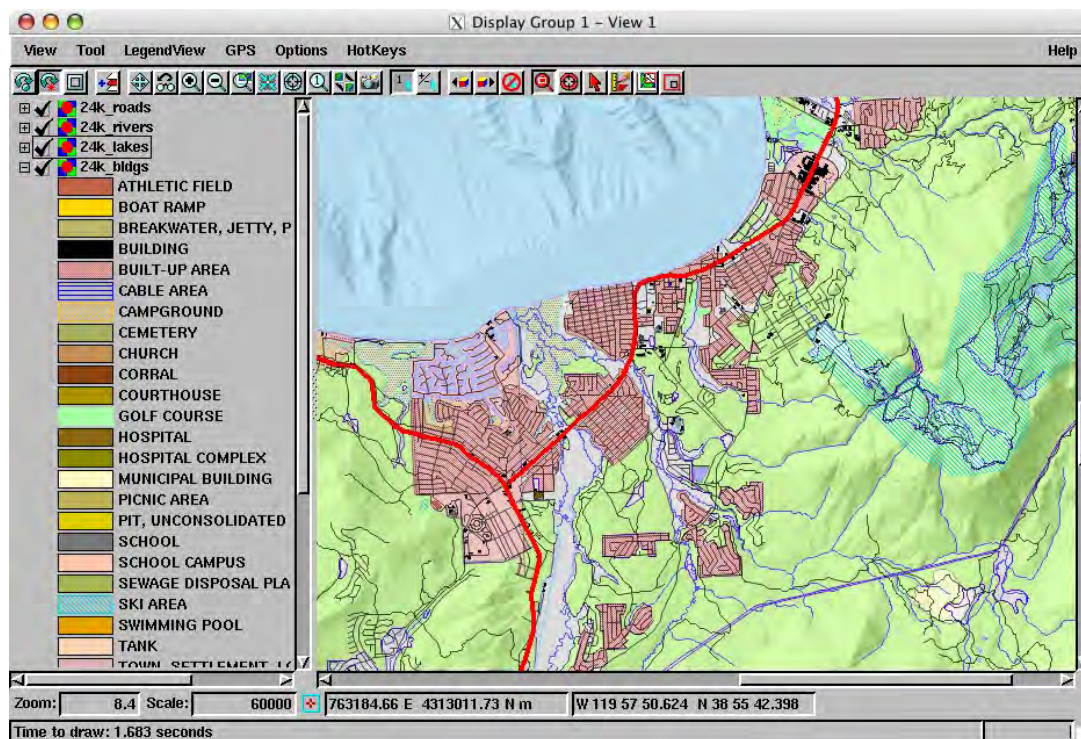# Linking to PostGIS Spatial Layers

PostGIS is a geospatial extension to the free, open-source PostgreSQL object-relational database system. PostGIS enables PostgreSQL to store geospatial data and serve it to applications such as the TNT products. Each PostGIS geospatial data object (layer) is stored in a separate table in the database, with one record in a spatial table for each distinct spatial feature in the layer. Ancillary tables store coordinate reference system information and other internal data. In the spatial tables, a special PostGIS geometry column stores the geo-metric information for each record, while conventional data columns hold associated at-

In the example illustrated on this plate, links are set up on a G5 Mac running Mac OS X 10.4 to PostGIS spatial layers in PostgreSQL database server tables residing on a PC running Windows XP.

tribute information. Point, line, polygon, multipoint, multiline, and multipolygon geometries are supported. The multi-element geometries allow the geometry field in a single record to store multiple elements of the same type, all of which have the same associated attribute set. Like a shapefile, however, each spatial table can store only one of these types of spatial element; a single PostGIS geodatabase layer cannot include both points and lines, for example.

You can set up links to PostGIS spatial layers in the TNT Import process. The import/linking procedure first prompts you to log in to the PostgreSQL server host and specify the desired database and schema. You then choose the destination object type for the spatial data in TNT. To link to the PostGIS layers, choose Shape as the object type. This choice

creates in the destination Project File a shape object that represents and links to the elements and associated attributes that remain stored in the corresponding PostGIS spatial table. (Alternatively, you can choose to fully import the PostGIS layers to TNT objects by choosing either Vector or CAD as the destination object type.) Finally, you specify the destination Project File and select any or all of the PostGIS spatial tables for linking/import.

Linked PostGIS layers can be styled using associated attributes in the PostGIS spatial table and used for spatial display or analysis procedures. Since the TNT products, PostgreSQL, and PostGIS can run under all major operating systems, including Windows, Mac OS X, and Linux, combining these products provides flexible cross-platform GIS capability in an enterprise GIS environment.
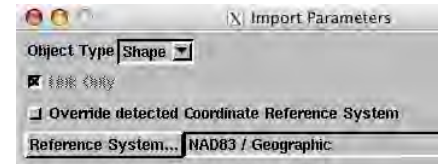
For example, standard GIS data could be stored in a PostgreSQL database running on a central Linux server, but this data could be analyzed and used to generate special-ized products in TNTmips on client computers running Windows or Mac OS X.

The shape layers in this View are all linked to PostGIS spatial tables residing in a PostgreSQL database server. Display styling (including partial transparency for polygon fills) was set up and saved for each layer in the TNTmi-ps Display process after linking. The PostGIS shape layers are overlaid on a relief shading raster object created in TNTmips from a digital elevation model.