Tele Atlas Helps PSE&G Put Everyone on the Same Map

Jim Yorke leads the land maintenance team at Public Service Electric and Gas Company (PSE&G), New Jersey’s oldest and largest regulated gas and electric delivery utility. PSE&G serves nearly three-quarters of the state’s population. If you ask him what business PSE&G does not want to be in, he’ll tell you: “We don’t want to be in the land maintenance business.”

This is the story of how PSE&G, in partnership with Tele Atlas, balances its need to do mapping with its desire to avoid the land maintenance business. And how PSE&G rallied, division by division, to have its entire organization work off a single, up-to-date landbase. Today, Tele Atlas’ data facilitates a common understanding of geographic location throughout PSE&G’s various divisions, saving them significant time and money.

PSE&G Data Inventory

PSE&G serves some 2,600 square miles in New Jersey, and is one of the largest combined gas and electric companies in the United States. In 1999, as a result of a 1998 Labor Day storm and a planned move to business software system SAP, the company began to think about its short- and long-term mapping needs.

PSE&G’s newly-formed Business Systems Integration (BSI) department took the lead, performing a data inventory. Here’s what the group found:

Facilities Data: PSE&G’s electric distribution facilities (power poles, pads, mats and vaults) were documented in what Yorke refers to as “63 different data sources,” including Excel spreadsheets, Access, DB2, mainframe and Oracle databases and other non-map forms. The information needed to be merged into a single database and checked for quality.

Structure Maps: Pole plates or structure maps included locations of poles, pads, mats and vaults, along with transformer symbols. Hundreds of these paper maps needed to be converted to digital form.

Landbase: The company’s survey and mapping group maintained the electronic base map of areas the company served, based on U.S. Census TIGER data.

Tele Atlas and PSE&G have been working together since 2002 on a suite of applications that are both internal and external to its customers. In the next section, we will explore the benefits and achievements that PSE&G has realized through this partnership.

About Tele Atlas

Tele Atlas’ digital maps and dynamic content help users anywhere in the world find the people, places, and products most important in their daily lives.

Our map data is updated using information from a network of over 50,000 global resources, including satellite and aerial imagery, public and government sources, input from utility, fleet, and postal drivers, and our proprietary mobile mapping vans. More than 70 categories of points of interest, dynamic traffic and event information, and speed camera and fuel price information add even richer content to our digital maps.

We collaborate with our partners in personal navigation, Internet, wireless, automotive, enterprise, and public service markets to help them deliver valuable products and services to their customers in a timely and cost-effective manner.

For more information, please visit www.teleatlas.com or call us at 1-800-331-7881 (North America) or +32 9 244 88 11 (Europe).
Underground Maps: The Buried Underground Distribution, otherwise known as Underground Residential Development (URD) maps, were created and archived as CAD (Computer Aided Design) files.

Aerial Photography: PSE&G owned high resolution digital imagery of the service area, but the imagery was not linked to any other data source.

Premise Locations: Mainframe tables, not maps, stored address locations of customers receiving service.

The Challenges of Data Silos

PSE&G’s BSI department decided to use the survey and mapping group’s landbase as the organizing geography, and to place all other data on top of it. The GIS group began the process by heads-up digitizing, essentially “tracing” structures from the scanned maps onto the digital landbase. Next, they linked the facilities to the map by their unique division, municipality and facility number.

The process worked fairly smoothly until large gaps were found in the landbase. Changes made by the electric distribution group in field offices had never been added to the survey and mapping group’s landbase. Additionally, the landbase didn’t include accurate municipal boundaries or street address information.

To fill the gaps, the GIS group turned to the imagery data, which was the most up-to-date reflection of what was on the ground. PSE&G hired a team of 20 temporary contractors to digitize the missing development data into the landbase.

But another critical aspect of the business was still not “on the map”. CUSTOMERS. This was a serious problem, as the electric distribution group needed to track and respond to outages, which meant knowing where the power was out and which part of the system needed attention. That required an accurate map of the electric network and the premise points. The alternative was locating 1.8 million premise points on the map by hand.

The Tele Atlas Solution

That was the tipping point for PSE&G. In 2001, it was time to gain access to a high quality dataset that could serve the company’s needs, including automatically locating the premise points. PSE&G prepared a list of requirements for potential bidders. The ideal dataset would include geometries that best matched the existing data, accurate street data, municipality data, ZIP codes, address ranges, etc.

Several companies submitted sample datasets and PSE&G compared them to the updated in-house landbase. In the end, Tele Atlas stood out as the best solution because it was the closest match to the existing data. As it turns out, Tele Atlas and PSE&G had used the same imagery to create map geometry.

PSE&G attached its data to Tele Atlas’ newly licensed Dynamap® Transportation dataset in a process called conflation.

By 2006, PSE&G’s internal map update process was working well. “We are never more than 30 days behind,” says Yorke. “When they are ready to do the work, the land is already there in the system.”

While the landbase was up-to-date, however, PSE&G was back to managing land. The company therefore turned to Tele Atlas to handle its land management responsibilities.

A Successful Partnership

Once PSE&G’s electric group moved its data to a single landbase, other parts of the company followed suit. “We didn’t want to maintain multiple vendors,” explains Yorke. So, the company integrated the gas distribution group’s work management system (based on SAP) with that same landbase.

Tele Atlas saw these edits as a source: some were not yet included in the Tele Atlas dataset, and others, such as locations of shopping malls and driveways, might be valuable additions to other data products. Because Tele Atlas had already invested in the people, systems and processes to incorporate and maintain these edits, it would be cost effective for the two organizations to work together and update the respective datasets for the long term.

PSE&G collected the changes and sent them to Tele Atlas. Teams at Tele Atlas’ American headquarters performed the quality assurance processes and tagged the features for use in data products. Roughly half the segments were tagged to be included in the next version of the Tele Atlas dataset. Yorke and his GIS team could therefore remove those segments from the PSE&G database, significantly decreasing the number of segments they managed.

Today, PSE&G submits changes to Tele Atlas on a monthly basis. As part of the maintenance partnership, Tele Atlas provides PSE&G with a configurable tool to use in its ArcInfo software. This allows the mapping staff to create update packages that can move efficiently through the Tele Atlas update process.

Part of the contract signed between the two companies in 2002 involved a maintenance program. PSE&G’s collected changes to the landbase were being sent to Tele Atlas for incorporation into the Dynamap Transportation product. However, between 2002 and 2006, PSE&G had accumulated some 11,000 – 14,000 new edits to the landbase. Some of these were truly new, and others were duplicates of segments that also appeared in the Tele Atlas data.