PROJECT OVERVIEW

As a regional information resource, the NJTPA is responsible for maintaining a GIS/data repository that is up-to-date and accessible by staff, subregions, member agencies, and other interested parties. This project, *NJTPA Enterprise-Class Geospatial Database Development*, will enhance the NJTPA data repository, streamlining maintenance, strengthening quality control and facilitating greater data sharing among stakeholders.

Data, particularly geographically oriented data, is extensively used by staff, agency partners and subregions within planning initiatives. Data informs analyses, supports decision-making and illustrates regional conditions. Commonly used datasets include:

- census demographics (such as journey-to-work data and forecasts); land use data, including aerial photography;
- management systems data (NJDOT congestion data, crash records, bridge condition, etc.);
- traffic counts, historic and current;
- bicycle and pedestrian measures;
- transportation model outputs; Office of Smart Growth centers and planning areas; and
- basic framework transportation layers (locations and characteristics of road and rail networks, ports, bus routes, airports, and other facilities).

This 12 month project will centrally locate a wealth of geographic data at the NJTPA, some originating at the NJTPA but much of it generated by partner agencies. To regularize how the data is stored, updated, and exchanged, a new enterprise-class geospatial database will be designed. To foster continuing interagency communication, numerous stakeholders will be engaged as part of a Steering Committee and through other means. The resulting database produced will help to ensure that data is current, accurate and suitable for particular uses. It will allow staff to respond to data requests more efficiently, and as appropriate, will also provide information online. Authorized users will be able to draw directly from the database to produce tables, maps, and conduct their own analyses.

Moving forward, the project will yield tools for the NJTPA to operate and build on the enterprise-class geospatial database. For the agency and its partners, the effort should markedly strengthen the region's information foundation, ultimately supporting wise planning decisions for northern New Jersey.

PROJECT APPROACH

Task 1: Discovery

The project will be initiated through a discovery phase, which will document the project's goals, study existing IT infrastructure and data, and understand agency business processes. Deliverables include proposed system requirements and concept design, proposed hardware and software specifications, an implementation schedule, and a template for conducting data inventory.

Task 2: GIS Steering Committee

Representatives from each of NJTPA's internal divisions, selected subregions, implementing agencies and other regional and state agencies will comprise a GIS Steering Committee. Committee involvement will be critical in identifying the requirements of the system and ensuring its successful implementation. Roughly six Committee meetings will be held during the project.

Task 3: Geodatabase Design

A logical data model of the NJTPA's GIS and related workflow will be drawn, along with the basic configuration parameters of the physical database. The design will include a comprehensive set of data standards and guidelines.

Task 4: Application Design

Applications deal with data generation, storage, distribution, consumption, maintenance, replication, and security. Applications generated during this task will focus on user interface tools for data maintenance, consumption, and replication. One anticipated application is an ArcGIS "Model Builder" toolset to allow spatial data to be moved across LAN and WAN (WWW) networks via ArcGIS Server. A desktop portal will also be developed for exchanging non-spatial business-related data. In addition, this task will finalize hardware and software recommendations (initially put forth in Task 1) and a list of database users and roles.

Task 5: System Development

This task focuses on developing a system that meets the target goals identified in Tasks 3 and 4, following the identified database and application design specifications.

Task 6: System Deployment, Testing, and Acceptance

The geodatabase built in Task 5 will be thoroughly checked out by the consultant, NJTPA staff and stakeholder partners. Testers will ensure that the system functions properly and meets design specifications, including required system variables, account information, and configuration parameters. The outcome of this task will be the final database system.

Task 7: Maintenance Plan and Schedule

A complete maintenance plan will be produced to support scheduled data updates, hardware and software performance tuning, and data integrity through a back-up and recovery plan.

Task 8: Documentation and Training

Database documentation will be developed within each project phase and will act as an evolving blueprint for the system. Upon completion of the previous tasks, a comprehensive set of documentation will be reviewed by the GIS Steering Committee and revised accordingly. One onsite comprehensive training session will be given, covering the operations of the enterprise database. This training will review maintenance recommendations, the documentation and a users guide. It will consist of one day for administration training and one day for user training (to be lead by the consultant in conjunction with NJTPA IT staff).

Task 9: Project Management

Project management will be responsible for product delivery and quality control. Communication and reporting will be ongoing throughout the project and a detailed final report will be issued at project completion. The consultant will ensure the enterprise database is FGDC and ISO compliant as well as establish NJTPA approved quality assurance guidelines to be followed throughout current and future implementation.