PAMS Information For Local Government GIS Staff

Proposed Data Update Process for PAMS GIS Data

GIS data of parcel boundaries is a key data element for the mapping components in the PAMS system. Parcel data will continue to be updated by local (county or municipal, depending on local arrangements) agencies, but copies of those data sets will be maintained on a state-owned server that is part of the PAMS system. Outlined below are proposed procedures to be used in keeping the state's copies of the data synchronized with changes that happen at the local level.

One-Time Data Preparation

Beginning in spring of 2008, NJOIT's Office of GIS will take copies of the most up-to-date parcel data available in each county. These will then be adjusted to align with each other along county boundaries, and the database structures will be normalized to one consistent schema. These steps are necessary in order to create a single unified data set for all counties and towns where parcel data are available for use in PAMS. The normalized data will then be replicated and sent back to each county. Data maintenance at the local level will then continue, using the normalized replicas.

Ongoing Updates

In order for the mapping modules in PAMS to be useful to assessors, the parcel data must be kept up to date to remain in sync with the assessment data as subdivisions and other changes occur. Ideally, the parcel layer should be maintained on an ongoing basis, with changes entered as soon as practical after they are finalized. In cases where staff resources are unavailable to perform data maintenance, updates should be done at a minimum of once a year (more often in areas undergoing significant growth).

Two different options will be available for updating the state's copy of the parcel layer after changes are entered at the local level. For local agencies that have the necessary software and network connectivity, synchronization of database replicas can be configured to happen automatically as often as daily. In this process, which can either be triggered on demand or scheduled, the database server at the local agency connects via the internet to the server at the state and transmits all changes that have occurred since the last synchronization. Using this method, changes made at the local level become available in PAMS almost immediately.

For local agencies that have periodic updates done by consultants or for any that cannot use the automated synchronization method, copies of updated databases can be mailed to the Office of GIS. OGIS staff will then load the new data in, replacing the previous records for that county or town.

The PAMS GIS PIN

PAMS is a relational database system comprising multiple tables. Internal to PAMS, the various tables are related by dataless keys that are generated automatically by the PAMS software when new records are created. The use of a dataless key ensures stability of the relationships between tables even if lot identifiers change (for example, when blocks and lots are renumbered).

Because GIS parcel data is maintained in systems that are disconnected from PAMS, it is not feasible to use the auto-generated internal key values from PAMS to make joins from PAMS data to GIS systems. There would be no reliable way to bring those key values into the GIS data. Instead, a "GIS PIN" will be generated in PAMS and in the GIS database. In other words, unique key values will be generated separately in the two systems, but using identical processes. This GIS PIN value will uniquely identify each lot in the state, and will be used to join PAMS tables into external GIS systems.

The GIS PIN value will be created by a concatenation of the municipal code, block, lot and qualifier as they exist in PAMS, separated from each other by an underscore. In records with no qualifier, the lot value will not be followed by an underscore. Leading or trailing white space in field values will be trimmed, but no other data manipulation will occur. Note that this is a change from the original fixed-width PIN format that was constructed by padding each component with leading and trailing zeros. The diagram below illustrates how the PINs will be formatted for various sample values. Qualifiers with leading or trailing spaces will be trimmed, but if a space occurs within a qualifier (as in the last example line below), it will not be removed.

Municipal Code	Block	Lot	Qualifier	GIS PIN
1345	12.04	1	C0004	1345_12.04_1_C0004
1345	12.04	1	C4	1345_12.04_1_C4
1345	12.04	1	QFARM	1345_12.04_1_QFARM
1345	12.2	4.05		1345_12.2_4.05
1345	12	4(RES.)		1345_12_4(RES.)
1345	12	2	W11-C34	1345_12_2_W11-C34
1345	12	2	BLDG HM	1345_12_2_BLDG HM

Please note the records without a qualifier do not have trailing underscores.

Additional Lots

A line item as defined on the Tax List and within PAMS may contain multiple lots if they are assessed as one entity; however, the GIS parcel layer has a polygon for each lot on the tax map. This leads to a mismatch when the two systems are joined. The solution adopted for displaying maps in PAMS is to create a derived GIS layer in which one polygon encloses the area of the parent lot and all the "additional" lots. This ownership layer will then have a one-to-one relationship to the records in PAMS. The ownership layer will be publicly available from OGIS via the internet.

A problem that is frequently encountered in MOD IV is that there is a single field for the additional lot numbers, with no consistent format for listing multiple values. This has been rectified in PAMS. Additional lot values are listed in a separate table with a many-to-one relationship to the main data tables. An automated process on the PAMS GIS server utilizes a view from this table to run a "dissolve" tool that merges the additional lot polygons into the parent to create the ownership layer.

Questions or comments about this information should be directed to:
        Andrew Rowan, Ph.D.
        Director, Office of GIS
        New Jersey Office of Information Technology
        PO Box 212
        Trenton, NJ 08625
        Phone: 609-633-0276
        E-mail: Andrew.Rowan@oit.state.nj.us