

Rural Parcel Mapping *GIS and the Grand List*

Introduction

As every Vermonter knows, each Vermont town has its own unique characteristics. Like each town, their grand list also has its own special characteristics. Each town's grand list is a valuable database that can be used in many municipal applications. Joining the grand list to a Geographic Information System (GIS) allows town officials to use the grand list more efficiently in many applications. With the grand list joined to the GIS, town officials can query the grand list by location and other variables. Examples of spatial queries include generating a list of addresses of abutters for a lot, creating a map of all properties owned by the state or creating a map of all lots with assessed values higher than a \$100,000. Creating maps or address lists from paper maps would take days.

In order to join the grand list to the GIS, the grand list should have several important characteristics. Several methods are available to create a GIS-friendly grand list. The following sections describe rules-of-thumb that can be used to modify a grand list so it can be joined to a GIS.

What is a GIS?

A GIS can be thought of as an electronic atlas. Each map "page" in the electronic atlas is represented by a map "layer" in the GIS. Each map or data layer consists of similar features like rivers and streams or roads. Many GISs include parcel boundaries as a data layer. In the GIS, each data layer includes the lines and shapes related to that layer (lot lines for a parcel GIS layer) and a record of information about each shape.

The grand list and a GIS

Both a grand list and a GIS can be considered databases. The grand list is designed to store information on all taxable parcels in a town. The GIS, however, stores all geospatial data because the core of a GIS is map layers. In terms of the grand list, a GIS contains a record for every individual lot and plat in a town including all non-taxable lots and different lots owned by the same individual or group. Consequently, in order to generate a GIS-friendly grand list, towns should include all *taxable* and *non-taxable* lots in their grand lists and ensure that *each plat is referenced to its appropriate subdivision*. The next three sections explain how to assure that each lot is identified correctly and has an associated grand list record.

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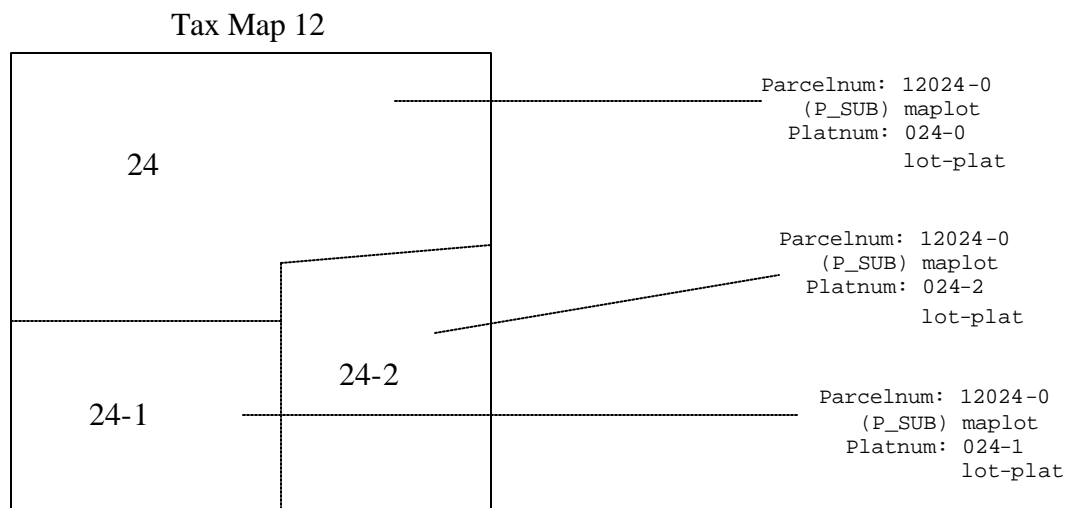
Parcel identifiers and tax map labels

A grand list usually contains several parcel identifier fields. If a town is using the up-to-date *NEMRC* software, the P_PROP and P_SUB fields usually hold the town's parcel identifiers. In addition, the town may have a **parcelid** field that is a concatenation of the P_PROP and P_SUB fields. The town could (also) have a parcel identifier in the map-lot format listed separately in one of the descriptive location fields (P_LOCA_A, P_LOCA_B or P_LOCA_C). Finally, the tax map labels show a parcel identifier, usually in the lot-plat/block format.

While all these parcel identifiers are confusing, several rules-of-thumb can offer relief and aid officials in creating a GIS-friendly grand list. To begin, one field (of the town's choosing) must be a unique lot identifier that relates directly to the tax map labels and/or the **parcelid**. Usually, this field is in the map-lot format and can be the P_SUB field or another field such as the P_LOCA_A, P_LOCA_B or P_LOCA_C. GIS professionals sometimes refer to this field as **parcelnum** and use it to join the GIS to the grand list. Since the **parcelnum** field joins the grand list to the GIS, each **parcelnum** identifier should be unique.

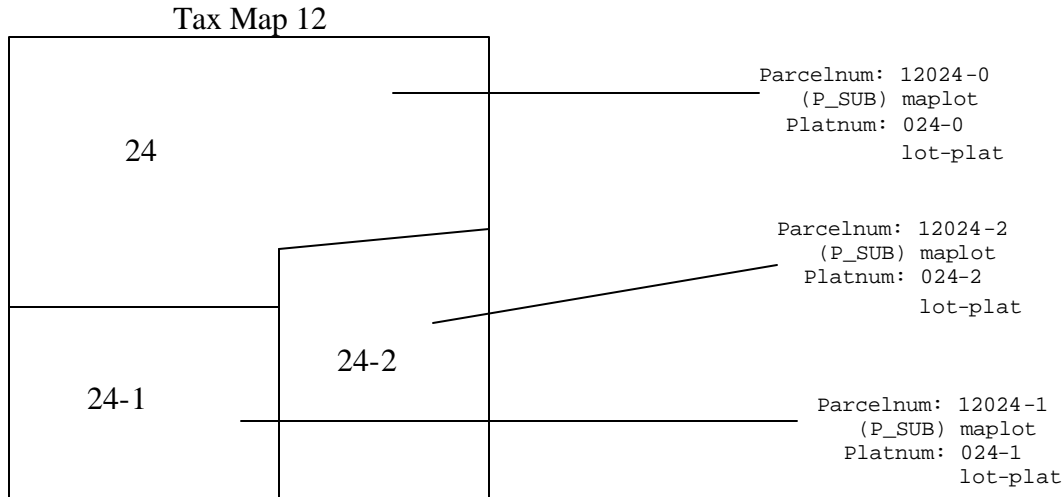
Please note that towns should keep the map-lot-plat/block format for parcel identifiers. One common format is ##-###.### (map-lot.plat). Please do not change the parcel identification system to E911 address numbering. The E911 numbering system is ideal for creating an emergency response system. It, however, does not lend itself to parcel identification. For example landlocked parcels may be difficult to identify.

Below, an example shows how the tax map labels and the **parcelnum** fields relate. This example refers to Morristown's numbering scheme.



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Below, this second example shows the changes to the identifiers when the lots are sold off.



Lots and unique records

All sold lots must have a unique record in the grand list (see following paragraph for exceptions). This rule-of-thumb includes non-taxable lots owned by municipalities, the State of Vermont and non-profit organizations such as religious groups and land trusts.

Exceptions to this rule-of-thumb are appropriate if the town prefers to list all state or town lands under one record in the grand list and notes this exception in the P_LOCA_A, P_LOCA_B or P_LOCA_C fields or another descriptive field. Contiguous parcels owned by the same individual may need to be indexed in a similar fashion as well. For assessment purposes, the Tax Department requires towns to list contiguous parcels under the same ownership as one record in the grand list. A description of contiguous lots that is included in one grand list record must be clear and explicit. In both of these exceptions, the *parcelnum field values for the lots in question must be identical*. **Remember, since the parcelnum fields are identical, the lot numbers must also be identical.** And, of course, the **parcelnum** map labels must be identical as well. Subdivision or plat number fields can be used to differentiate between parcels and can be shown on the tax maps for clarity.

Plats

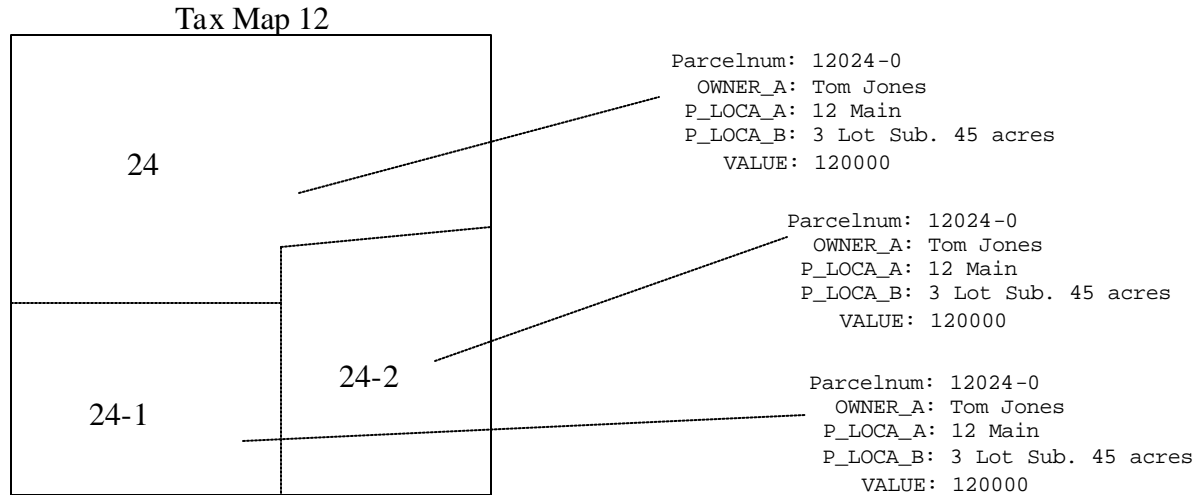
All plats (unsold subdivision parcels) do not necessarily need a unique record in the grand list. Instead, these lots must have the *same parcelnum field as the lot from which they were subdivided*. **Again, all lot numbers must be identical.** The map labels must show identical lot numbers but may show different plat numbers. A description in P_LOCA_A, P_LOCA_B or P_LOCA_C (or another field) should outline a description of the subdivision, e.g., includes original lot 12-5-1 (16 acres) and plats 12-5-2 (7 acres) and 12-5-3 (8 acres). This description will be part of the record for these three lots in the GIS. In this example, both plats have a lot number and map label of 12-5-1 until they are sold.

GIS and the Grand List

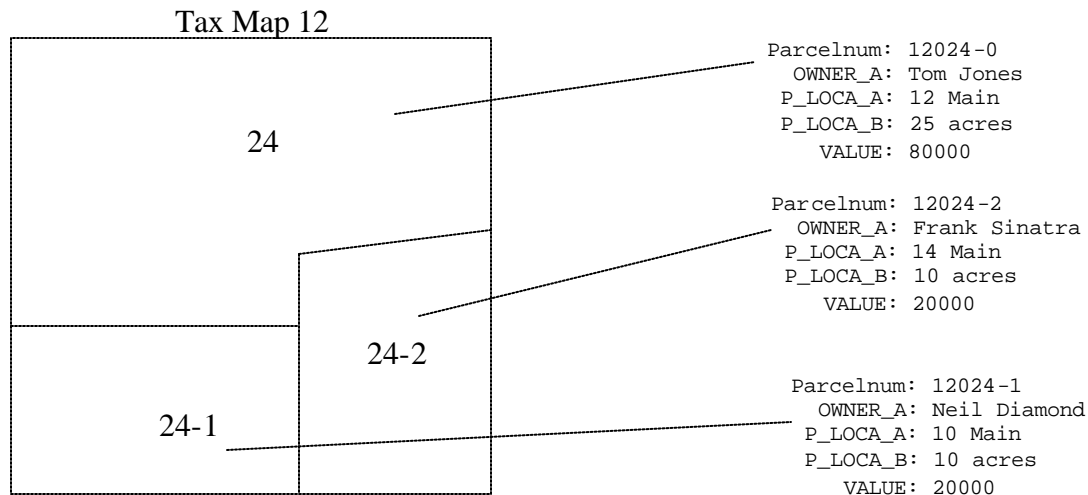
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Pete Fellows

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In the diagram below, three lots owned by Tom Jones have just been subdivided. They still have identical parcel numbers and thus, identical records. This diagram also illustrates how contiguous lots or public lands must be identified if a town wants to list several lots under one record.



In the diagram below, all three lots have been sold off and now have different parcel numbers and records.



Assigning parcel identifiers to condominium complexes, mobile home parks and planned unit developments with common land can be difficult. Having one record for the entire development or one record for the common land and one or many records for the lots/units offer solutions. If a record refers to multiple lots/units, please note this in the descriptive fields and corresponding map labels. Also, if the town decides to label each unit individually, each unit should be mapped and have a unique **parcelnum**.

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Tips and tricks

In *NEMRC*, P_PROP and P_SUB can be up to 10 characters wide. (They are NOT limited to 5 characters.) A town may want to use the P_SUB field as the **parcelnum** field or may want to use another field. A drawback to using the P_SUB field is that it is only ten characters wide and parcels that have been subdivided several times will need to be renumbered often since the lot number will exceed the field width. Using a descriptive character field such as P_LOCA_A, P_LOCA_B or P_LOCA_C will give the town more flexibility with long lot numbers. **Please remember, however, that simple lot labeling schema should always be the rule.**

Additionally, towns should make plat labels on the tax maps as clear as possible. Towns can circle the plat numbers and separate these from the lot numbers on the tax maps to assure that the plat numbers are not confused with the lot numbers. This labeling method makes the maps much easier to update.

Finally, referencing surveys to their parcel(s) and their deed's book-page number in a separate mini-table is a useful tool. Contractors then can use this table when updating the tax maps. The listers may also find this index helpful.

Linking Permit Histories to Parcels

Many towns may be interested in linking digital permit histories to parcels. Each permit is similar to a grand list record and can be linked to a parcel. The **parcelnum** field can be used as the relate field for the permits as long as the permits are indexed by **parcelnum**. Towns can use another field to link their permit histories to parcels but must carefully consider how their permits are indexed. Again, the simplest approach is probably the best and using one field to relate both the grand list and the permits to the tax maps would be the most straightforward.