

WHITE PAPER

GIS (Geographical Information Systems)

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Introduction

ParcelQuest recognizes the value in maintaining its own GIS maps. ParcelQuest GIS maps are drafted and updated by our own staff of cadastral mapping experts who possess decades of experience in parcel boundary maintenance and who understand that the basis of an accurate GIS parcel map comes from the knowledge of how to utilize records of survey, legal descriptions, aerial photography and GPS control points. Combining our expertise in data standardization and cadastral mapping, ParcelQuest's maps and data are updated more frequently and are more accurate than any other available source.

The benefits of ParcelQuest's GIS product are summarized in six (6) key areas:

1. The addition of missing parcels
2. APN corrections
3. Alignment improvement
4. The addition of condominiums, timeshares and air space parcels
5. Edge-matching
6. Miscellaneous layer standardization

BENEFITS OF PARCELQUEST GIS

1. The addition of missing parcels

People familiar with geospatial parcel data understand the challenge associated with the 'ever changing parcel map.' Per State Board of Equalization mapping standards, any change to the boundary of a parcel requires a change to the Assessor's parcel number (APN). This is true no matter how small the change is, or whether the boundary change is the result of a legal description change or a change made by an assessor to simplify the tax assessment process. Consequently, parcel boundaries and their corresponding attributes are changing constantly. To keep up with this dynamic data set, ParcelQuest has developed a unique process to systematically ensure that our parcel layers are in lock step with the active parcels on the assessment roll and the correct ownership and attribute data.

Using daily updated assessment data, ParcelQuest continually compares the active APNs on the assessment roll to the APN attributes on our parcel layer. When a new APN appears on the roll ParcelQuest's cadastral mappers know a boundary change has occurred. They then review the parcel, determine its geography, and make a corresponding update to our parcel layer. As a result of this process, our clients get a more current, more complete, more cost effective parcel layer than is available anywhere else, including the county.

2. APN corrections

During the same maintenance procedure described above, ParcelQuest mappers verify that the APN numbers on the parcel layer are formatted the same as on the assessment roll. This ensures that the APNs associated with each individual parcel within the GIS layer are accurate and match the corresponding details listed in the attribute tables.

To further ensure every parcel is labeled with the correct APN, our cadastral mappers run a second procedure which compares the acreage of each parcel's polygon shape to the corresponding acreage value listed in the attribute table. Any parcel whose acreage values do not match within a specified tolerance is reviewed to see if the problem is the result of an erroneous APN assigned to the polygon.

3. Alignment improvement

All original, county-drawn parcel layers are created by fitting together the county assessor's parcel maps like a giant jigsaw puzzle. While this is the only viable way to create a county-wide parcel layer, the resulting layer is often grossly misaligned due to the inherent lack of control points. Over time, control points can be added to gradually bring the layer into better alignment, but this is often not possible in the case of county-maintained layers due to the high cost of doing realignment work and the lack of GIS funding. Further exacerbating the situation is the fact that counties are no longer able to sell their GIS layers at fair market value to help fund their GIS efforts.

By contrast, ParcelQuest spends hundreds of thousands of dollars each year ensuring its parcel layers are up to date and accurately aligned using assessor plat maps, recorded survey maps, aerial imagery, public land survey system data, and globally positioned street centerlines. Our cadastral mapping staff works to ensure consistent alignment of all individual parcels within the GIS parcel layer. Because we receive continually updated assessment data and parcel maps, we're able to quickly correct alignment issues in a timely manner as they arise.

4. The addition of condominiums, timeshares and air space parcels

The accurate representation of condominiums, timeshares, and other non-standard parcels can be problematic in a single GIS layer due to fractional ownership, multiple stories, and other issues. The challenge is not so much in how to represent the parcels visually, but rather with linking the corresponding ownership data. While a few methodologies exist today (e.g., Point File, Multi-Polygon, or some hybrid of the two), there is no state-wide methodology standard. To address this issue, our cadastral mappers have developed a 'Points/Polygon/Table' layer that can accurately depict individual air space parcels in order to link the corresponding ownership data. ParcelQuest clients get a GIS layer that accounts for the highest percentage of taxable property and property tax payers possible.

5. Edge-matching

Because county-supplied parcel layers are maintained only to meet the needs of a single county, there is no reason or funding for their GIS personnel to edge-match their county's parcel layer with that from any neighboring county. Add to that the problem that many boundaries are simply unclear and you actually have a disincentive for counties to edge-match lest the GIS layer be used against them in a future dispute.

ParcelQuest, on the other hand, serves thousands of customers across all 58 California counties. We remove any gaps or overlaps that may exist between counties to create a seamlessly edge-matched, statewide parcel layer. Not only do our individual county layers fit together like pieces from a large puzzle, but each individual county layer is far more accurate because we account for the position of neighboring counties. For our clients that provide services across multiple counties, it's imperative for them to be able to work from GIS layers that have been properly and accurately edge-matched.

6. Miscellaneous layer standardization

We understand that our customers need parcel layers which accurately depict ownership boundaries in their area of interest. Unfortunately, many parcel layer providers, including some counties, intentionally introduce errors into their parcel boundaries by changing them to accommodate non-parcel-boundary elements in a single, cheaper-to-maintain layer. These elements typically include things like rights of way, State Board of Equalization assessed parcels, water bodies, canals, pipelines and railways.

For example, rather than mapping the accurate relationship between a railroad parcel and the parcel it runs through, the railroad parcel is intentionally excluded from the drawing and the parcel surrounding it is split into two polygons with the space between depicting where the railroad line passes. While this solution eliminates the problem of overlapping polygons within a single GIS layer, it creates a new problem by artificially modifying the shape of the surrounding parcel (or parcels) such that it no longer represents the true ownership boundary.

Rather than excluding these complex elements from our parcel layers, our GIS staff has taken the time to move them to separate distinct layers where they should be. These layers are maintained in conjunction with the parcel layer to retain the spatial accuracy of all the layers. ParcelQuest clients get an accurate picture of all ownership boundaries and can work with any component layer separately.

The following chart lists the benefits that the ParcelQuest cadastral mapping staff currently provides for each California County:

County	Adding missing parcels	APN corrections	Alignment improvement	Condos added	Edge - matching	Standardized misc. layers
ALA		✓				
ALP		✓	✓			
AMA						✓
BUT						✓
CAL			✓	✓		✓
CCX						
COL			✓		✓	
DNX			✓	✓	✓	✓
EDX		✓		✓		✓
FRE			✓	✓	✓	
GLE		✓	✓		✓	
HUM		✓			✓	✓
IMP						✓
INY					✓	✓
KER						
KIN		✓	✓			✓
LAK						✓
LAS		✓				✓
LAX	✓					
MAD			✓		✓	
MEN			✓			✓
MER		✓				
MNO					✓	
MOD		✓			✓	✓
MON		✓	✓	✓	✓	
MPA		✓	✓		✓	✓
MRN			✓	✓		✓
NAP						
NEV		✓	✓	✓	✓	✓
ORG						
PLA	✓					
PLU			✓			
RIV						
SAC				✓	✓	
SBD						
SBT			✓			
SBX			✓			
SCL			✓			
SCR					✓	✓
SDX			✓			
SFX						
SHA		✓	✓			
SIE			✓			
SIS		✓	✓		✓	
SJX			✓			
SLO		✓	✓	✓		✓
SMX						
SOL						
SON			✓	✓		✓
STA						✓
SUT			✓			✓
TEH			✓			✓
TRI			✓			✓
TUL		✓	✓			✓
TUO			✓	✓		✓
VEN	✓			✓		
YOL			✓			✓
YUB						✓