

PARCEL PLAN DEVELOPMENT

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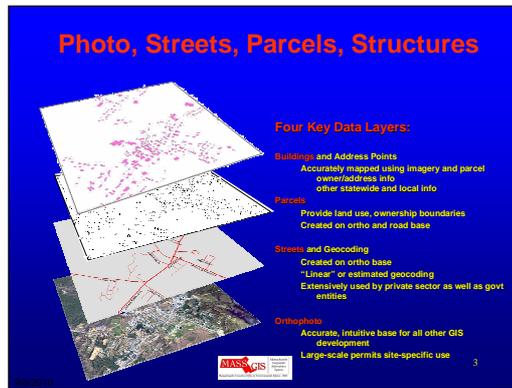


Massachusetts
Geographic
Information
System

Massachusetts Office of Information Systems

PRESENTATION OUTLINE

- **Context: NextGen 911 and GIS Strategic Plan**
- **Context: trends in society**
- **Context: trends in assessing**
- **Project Overview**
- **Trends: digital parcels and assessing**
- **Role of parcel data in NextGen E-911**
- **Current status of parcel mapping**
- **Review of MassGIS parcel standard**
- **Future of Assessing**
- **Workshop Findings and Summary**



First of all, thank you for giving us your time today.

Our reason for being here today is primarily about the effort to establish the next generation (NexGen) of the 911 emergency response system. NexGen 911 will rely much more heavily on mapping and will require matching a call address (“geocoding”) or location to a point representing the call response location. Unfortunately, you can’t really think about just one GIS data set supporting geocoding, you have to think of a whole stack. At the bottom you see orthophoto – this is the base for all other GIS efforts. It’s the same map you see in Google (they are kind enough to credit us if you look closely). On top of the ortho, is the NAVTEQ street map of the commonwealth which we collaborate with Navteq on maintaining. The road rights of way and ortho provide the framework for the next layer, which is the assessors parcel mapping. Parcel data is managed at the local level by assessors, who are gradually getting into GIS. As you’ll see, parcel data is critical for what we want to do for NextGen 911. Then on top of that is building footprints, we’re developing automated techniques for mapping those which I’ll show you. Where we want to end up is with an address and a location for every structure to which an emergency service provider might have to respond. As it happens, these four data layers are essential for a lot of other activities at all levels of government and so they were the focus of the Strategic Plan for Massachusetts Spatial Data Infrastructure which we released in 2007. Among other important ideas, this strategic plan promotes the concept of digital map information as a form of public infrastructure for the 21st century.

Assessors Parcels - Areas of Critical Environmental Concern - Water Mains - Freight
 Railroads - Prisons - Town Halls - Public Waterway Access - Stream Gauging
 Stations - 1995 Black and White Aerial Photos - Crime Locations - Aerial Photos -
 Town Halls - Land Use - Wetlands and
**A Strategic Plan for
 Massachusetts'
 Spatial Data
 Infrastructure**
 Land Use - Surficial
 Geology - Major Watersheds - Town Boundaries - Water
 Valves - Wellhead Protection - Rapid Transit Lines and
 Stops - Regional Planning - Ground Water
 Discharges - Canoe Access - Cranberry Bogs - Aqueducts - Elementary School
 Districts - Middle School Districts - High School Districts - Outstanding Resource
 Waters - Coastal - Areas Affected
 by Title 5 - Registered
 Shellfish Growing Areas - Fire Stations - Marine
 Hazardous Waste - Wildlife Habitats
 Sewered Areas - Solid Waste Facilities
 - Commuter Rail - Quality Monitoring
 Stations - Zoning - Protected Habitat -
 Certified Vernal Pools - Protected Open
 Space - MWRA Service Territories - Bicycles - Bicycle
 Trails - MEMA Regional Zones Scenic
 Landscapes - Long Distance - Historic Places - Land Use
 Change 1971-1985 - Land Use Change 1985-1999 -
 Airports - Potential Vernal Pools - Hospitals and Emergency Room
 Facilities Public Water Supply Service Territories - Cable TV Service Territories -
 Electricity Service Territories - Natural Gas Service Territories - Quabbin
 Preparedness Regions - **June 30, 2007** Colleges - Stewardship
 Program Properties - Large Quantity Generators of Hazardous Waste - Facilities w/
 Groundwater Discharge Permits - Facilities w/ Air Operating Permits - Hazardous



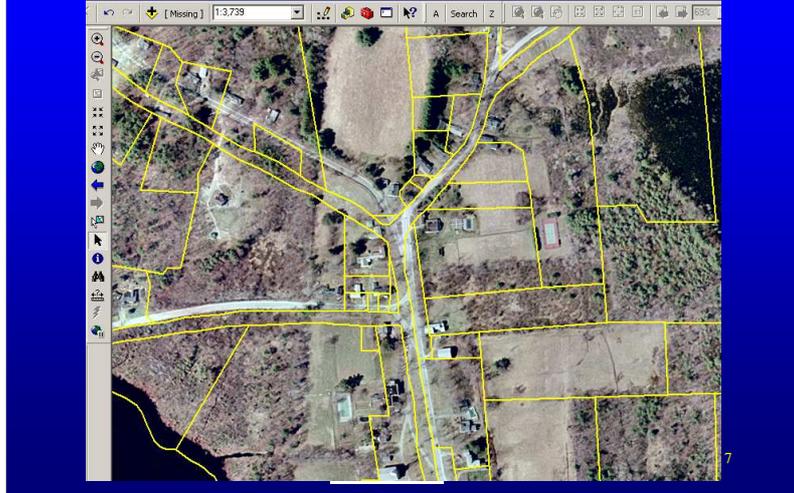


We thought it would be useful to briefly provide some broader context for this project. The past 40 years have seen the conversion of all forms of record keeping in municipal government (financial, payroll, purchasing, clerks records, etc.) from paper and card files to computerized records. Moving map records into a GIS database is the continuation of this trend. On the screen you see examples of map and data records that were until about 20 years ago typical of all communities in the Commonwealth. They are still what you find in many communities. In many ways the records shown above are a geographic information system (GIS). And to the un-initiated, just as confusing to use as the computerized version!



An important point to keep in mind is that a GIS provides a connection between the map graphics, in this case an assessors parcel polygon, and descriptive information. In this example, the descriptive information or “attribute data” from the assessors tax list for a single parcel is available through the GIS software tools. Of course this is only possible if the process of creating GIS data has included establishing a link between the assessors maps and information from the assessor’s tax list database.

HOWEVER THIS IS STILL COMMON...



Note the mismatch between the assessors parcels boundaries and the underlying spatially accurate photo base map (“orthophoto”). This sort of tax mapping is even less useful if it lacks the tax parcel ID needed to link the mapping with the assessor’s tax list or CAMA database.



MassGIS has initiated this planning process because we know that there is a real **community of interest around assessor's parcel mapping** whether directly in the assessment process, in other aspects of the real estate business, or in activities from development review to emergency response. As we will show you later in this presentation, many **communities have recognized the need for and broad value of digital assessors maps**. Many communities have a version of their assessor's maps in digital form. However, the **value of those digital maps can be multiplied many times if they are standardized to a consistent and predictable level of quality**. Many people have been talking about this value for years. However it is only now, with the need to develop mapping support for the **next generation of the 911** emergency response system, that this acknowledged value has been matched with the necessary funding. We have, in effect, **reached a "tipping point"** and it's time to start planning for a systematic approach to achieving this goal. So through these workshops, **we're reaching out to the various stakeholder groups**. We want to give you our understanding of this project and make sure we understand your needs and interests so that we develop a plan that appropriately supports the needs of all stakeholders.

Just one more thing to make clear - MassGIS has been doing the logistics and planning for these workshops; this kind of statewide coordination is part of our legislative mandate. However, this is **not all about MassGIS**, rather it's about the needs, opinions, and insights of assessors, GIS users, appraisers, planners, and the many other users of assessors parcel maps and data.

PARCELS: ISSUES & OPPORTUNITIES

- **3 levels of government are involved:**
 - Local government as tax parcel mapping managers
 - Regional Registries as official land record repositories; planning commissions provide services to municipalities
 - State government
 - DOR has mandate to certify local tax assessments
 - MassGIS has provided technical resources & funding
- **Preserve the distinction between:**
 - Legal property boundaries (based on deeds and surveys)
 - Assessor's tax parcel mapping (approximate)
- **Understanding local interests in managing and distributing their parcel data**
 - How to support the local role
 - Make data available to all levels of government
 - Address concerns about distribution, web access, currentness etc.



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There are **lots of players** – three levels of government as well as the private sector.

Local government has the primary responsibility for **maintaining the tax maps**. However, the life story of a parcel begins with regional government, as in a legal sense, a parcel is created at the registry when a subdivision plan is recorded. So the communication between registries and assessors is very important.

The role of **state government** is less well defined, but there are definitely **technical resources and economies of scale** that don't exist at either the local or regional level. There is also the **authority to review and certify the local tax lists at DOR**.

As use of parcel data expands, we also need to remember the **distinction between boundaries in a legal sense and tax mapping**. That's important because even with the best effort to compile the information on an orthophoto base map, in accordance with the MassGIS standard, the assessor parcel map lines are still not the legal depiction; property boundaries are something that only a surveyor can provide. So, in this context, **disclaimers and proper use of the data are important**.

We also **need to be sensitive to local concerns about sharing parcel data**. It's a **public record** and there is no option but to make it available, but how we do that and how we **ensure the information is current** and how we **ensure proper use of the information** is still an issue.

TRENDS: DIGITAL PARCELS AND ASSESSING

- Abutters lists
- View parcels and surrounding area right at your desk
- View relationship between wetlands, topography, and what is visible from the road
- Find errors in neighborhood delineations and other coding
- View orthoimagery and find improvements
- Mass update of CAMA records during revaluation

"Using the digital parcel map is such an automatic thing for me with my appraisal system that I probably am in and out between [the database] and the maps 50 times per day."

Cindy Cosgrove, Principal Assessor,
Town of Auburn



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Abutters lists – 1 click, 10 seconds for list and maps

You have the ability to see parcels and surrounding area without physically having to go out in the field. Information is right on your computer. You don't have to fumble around with paper maps.

You can clearly identify locations of parcels in relationship to the zoning and with the orthophotography you can identify wetlands and other land factors that are not visible from the road.

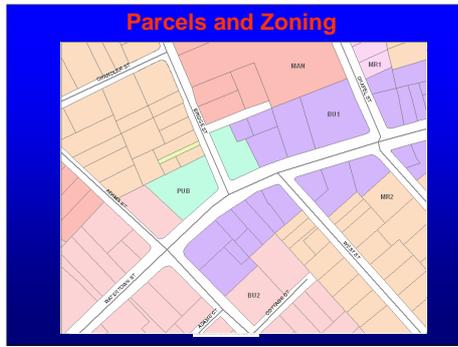
You can visually display different data from your appraisal system and identify errors in neighborhood delineations and other coding.

Using the orthophotography you can find additions, pools, decks and other improvements that were done either without permits, or never got picked up.

mass update of CAMA data during revaluation.



Assessors using GIS software can also take advantage of other map information. In this example, overlaying natural resource layers such as wetlands makes it possible to evaluate constraints on property that affect value. Other constraints on value such as slope, Title V setbacks, or other factors may constrain value.



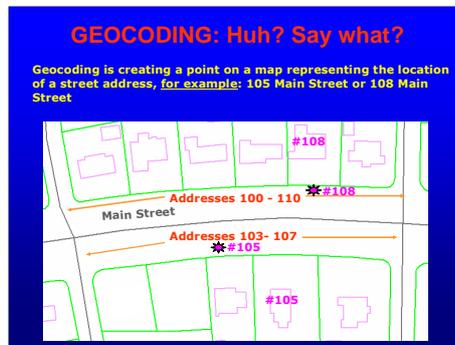
Once parcel maps are in a GIS, they can be the base for adjusting zoning boundaries so that district boundaries align with assessors parcel lines when they should.



Municipalities are putting not only assessing maps and data on-line, but other GIS data and even basic capabilities such as identifying abutters.

DIGITAL PARCELS ALSO IMPORTANT FOR:

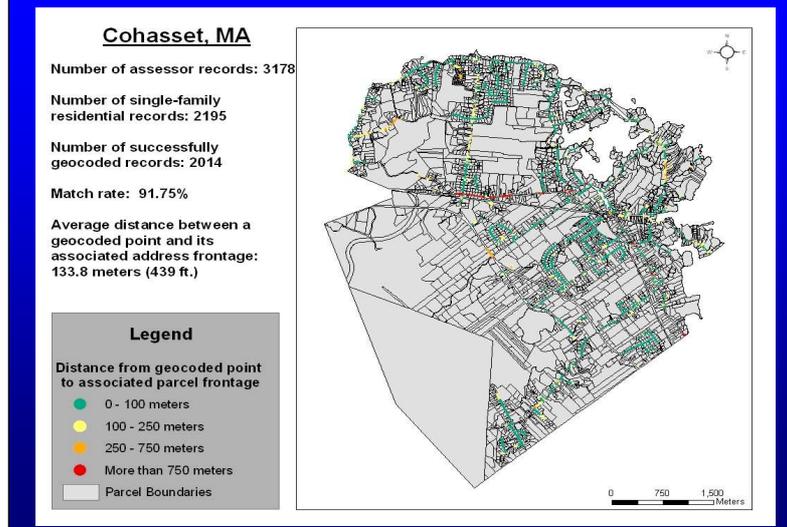
- Municipal and Regional Planners
- Economic development planning and implementation
- Real estate sales/appraisal
- Public health
- Planning for preserving sensitive resources, both biological and physical (drinking water, sand/gravel deposits)
- Transportation modeling
- Mapping address locations (“geocoding”)
- Next Generation E-911 (accurate address locations)
- Etc.



Here's an illustration of how geocoding works. You see here a street segment, a block on main street and you see that on the left and right sides you have two address ranges – 100 to 110 and 103-107. If you're trying to get to 108, and all you have is the road centerline with its address range, then you estimate the location of 108 accordingly. This is called "linear geocoding" But as you can see on the bottom, that doesn't always work very well sometimes – number 105 estimated to be in the middle of the block winds up in front of the wrong house. This example is fairly tame and, for many situations, the result is "good enough" ; however, linear geocoding can produce results that are often much worse. The reason for this error is that the address location is interpolated based on the assumption that the addresses in the range are evenly distributed along the street block. Geocoding to the parcel level, if the parcel has an address, is necessarily going to be more accurate.

Geocoding is very useful for anyone who wants to see the approximate location on a map of where they want to go, who is planning service deliveries, or who wants to look at the demographics of their client base. But I want to stress the word approximate, because we've seen errors up to several hundred feet with linear geocoding.

Error Due to Linear Interpolation



The biggest issue though is one that we can't deal with at all no matter how hard we try and that is linear geocoding itself. Here's a map of Cohasset with geocoded structures color-coded for the error in their location. You can see that a lot of them are within a few hundred feet, but many are not. In fact the average for all points, that is including the green ones, is 400 feet. But what you also see is a cluster along the main road that are more than 2000 feet off. That's pretty far.

We see this all the time and I probably should have made more of a collection of examples, but if you just think about how linear geocoding works you can see that its inevitable. Anytime the houses are not perfectly spaced along the road, you'll get these errors. Well think about your typical country road – that's just not the case. You might get a few houses at one end where the road intersects another, then a half-mile or so with none, then a bunch more houses where it ends.



We did this in Cohasset for a few thousand addresses - The error here is on the high end, but not uncommon -- 39 Atlantic Ave is approx. 600 meters away from where Navteq data places it. This is the worst case, but the average was 400 feet. That seems like a problem...

Building Points

- A point to represent every building meeting minimum criteria of size and use to which an emergency responder might be dispatched based on...
- An address (or a name) based on
 - Parcel
 - Other mapping
 - Field Work
- Automate to the extent possible, then manually review and edit



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Some communities have what we call building footprints – an actual polygon showing the size and the shape of the building. We're not going to get there statewide, at least not for a long time. We think the right compromise is points – a point ...

The way you find the point, obviously, is the address – which might come from a parcel map, or from other mapping, or from field work.

What we're proposing is to do as much as possible on the desktop, first in an automated fashion, and then manually, and then go out in the field.



TRUE COLOR IMAGES DEPICT RED, GREEN, AND BLUE LIGHT.

THIS IS A FALSE-COLOR IMAGE IN WHICH WE ARE DISPLAYING NEAR INFRARED INSTEAD OF RED. THIS WAS POSSIBLE BECAUSE THE FOURTH "COLOR BAND" – INFRARED – IS PART OF THE IMAGE.

THE EFFECT OF THIS CHANGE IS THAT VEGETATION APPEARS RED; EVERYTHING ELSE IS SHADES OF GREY.



HERE WE HAVE USED DETAILED ELEVATION DATA (NOT YET AVAILABLE STATEWIDE) TO IDENTIFY OR CLASSIFY “GROUND” – THAT IS, AREA WITH LOWEST 5% ELEVATION

So the bright magenta blobs are higher elevations or houses. This analysis enables us to differentiate houses from other, flat, hard surfaces such as driveways.



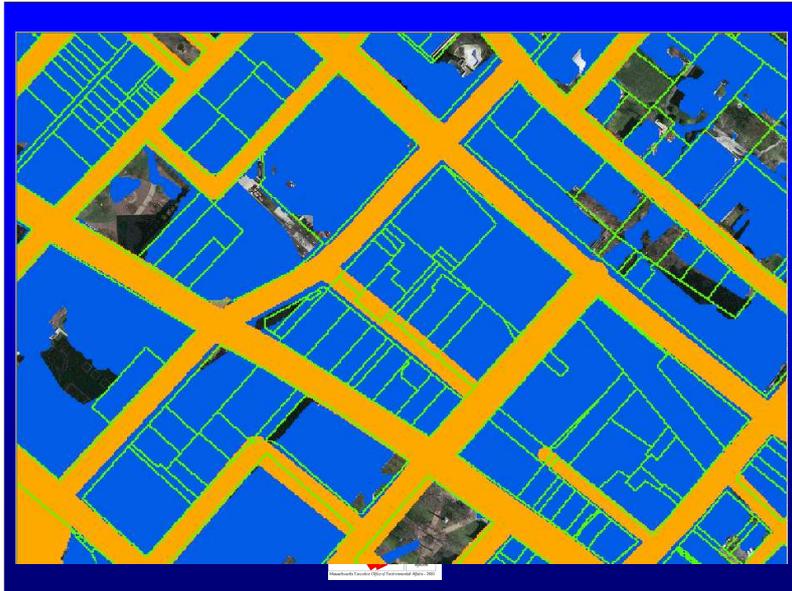
Here we are back to a true-color (red, green, blue) image. We have also taken the magenta colored blobs from the previous image and had the software fill in the gaps. So we have crude representations in blue of houses



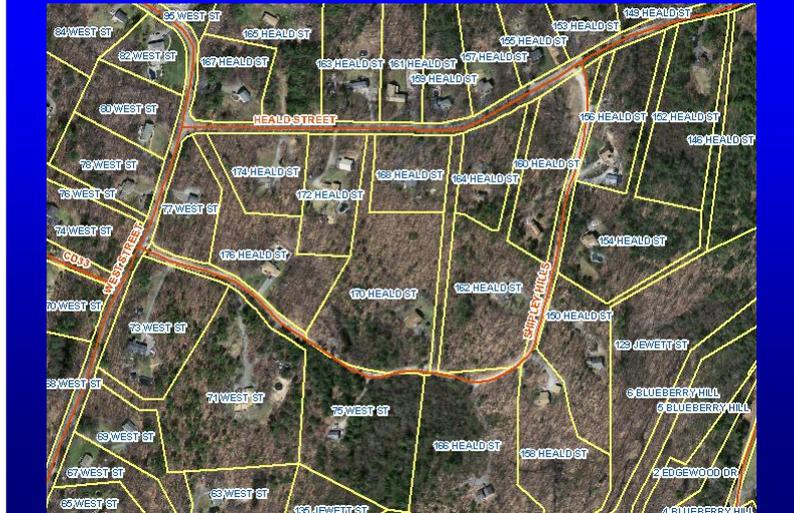
In this image we show yellow points representing each structure; the points are created by the software.

197 Points, 211 Single-Family Parcels in entire area

Buildings at arrows are newly-constructed since the detailed elevation data were acquired and so do not show up in the mapping.



Right-of-Way and Actual Access can Differ



In this example from the Town of Pepperell, we see the extent to which address assignment and actual building access can differ. Buildings mapped as points and associated with the correct site address would enable geocoding to provide an essential level of address mapping accuracy for this situation.

Assign Parcel Site Addresses to Points



Check that street frontage matches. If not, is it a vanity address or an absentee owner mailing address?

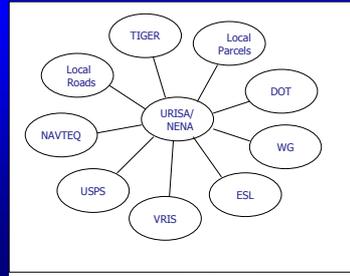
Check sequence along street

If more than one structure, then field work may be required

MASTER ADDRESS FILE (MAF)

- Objective: link addresses to buildings (geography)
- Use a standard for addresses
- Start with streets, then numbered addresses, then buildings (where needed)
- Ultimate statewide MAF has units, but not in my lifetime!

Why have an address standard?



Need an address standard and MAF because most communities have many different address repositories and none of them agree. And then on top of that the post office and various state agencies collect addresses. So when we use some software tools to standardize addresses from multiple sources, we have the beginnings of a master address file.

UNIQUE STREET LIST

LOCATION TYPE	ref_orig_name	possible_correction	
CEN	ANTHONY'S WAY	ANTHONY'S WAY	} No punctuation rule - ideally, 4 of each street name
NAV	ANTHONY'S WAY	ANTHONY'S WAY	
ASS	ANTHONY'S WAY	ANTHONY'S WAY	
ESL	ANTHONY'S WAY	ANTHONY'S WAY	
NAV	ANTHONY'S WAY	ANTHONY'S WAY	} Sometimes, 5 or more
ASS	ANTHONY'S WAY	ANTHONY'S WAY	
ASS	ARABIC AVENUE		} If only assessor has it, might be a paper street
ASS	ARABIC STREET		
ASS	ARIES LANE		
ASS	BOB WHITE CRESCENT	BOBWHITE CRESCENT	} Often, the town clerk will be "right" although this varies by town
NAV	BOB WHITE CRESCENT	BOBWHITE CRESCENT	
ESL	BOB WHITE CRESCENT	BOBWHITE CRESCENT	
CEN	BOBWHITE CRESCENT	BOBWHITE CRESCENT	
ASS	BLUE CASTLE DRIVE		} This is what we want!
CEN	BLUE CASTLE DRIVE		
ESL	BLUE CASTLE DRIVE		
NAV	BLUE CASTLE DRIVE		
NAV	BLUE FIN		} BLUE FIN - exception processing
ASS	BLUE FIN		
CEN	BLUE SPRUCE WAY		} Assessor doesn't have it - that's worrisome
ESL	BLUE SPRUCE WAY		
NAV	BLUE SPRUCE WAY		
NAV	MASTERS WAY	MASTERS WAY	} Mashpee's a very family oriented town!
NAV	UNCLE PERCY'S DRIVE	UNCLE PERCY'S ROAD	
ASS	GRAY WAY		
ESL	LOVELL LANE	LOVELL'S LANE	
NAV	UNCLE EDWARDS ROAD	UNCLE EDWARDS ROAD	
ASS	AUNT JAMES ROAD	AUNT JAMES ROAD	
CEN	UNCLE HENRY'S ROAD	UNCLE HENRY'S ROAD	
CEN	UNCLE HENRY'S ROAD	UNCLE HENRY'S ROAD	

Here's that first step, the list of streets, arranged so that you can see if you got one, two, three or four of each. Often of course you'll have two and two, or three and one, and you'll be able to fix the problem easily because it will involve misspelling or I should say more diplomatically different spelling. Other times, one street will be missing and you have to figure out why. Sometimes, one dataset will be inconsistent, and include two versions of the street name so you'll get five or more records grouped. We've put together rules for the various combinations – if only the assessor has it, for example, it might be a paper street. IF the assessor doesn't have it, that's worrisome.

WILLIAMSTOWN PILOT

Desktop

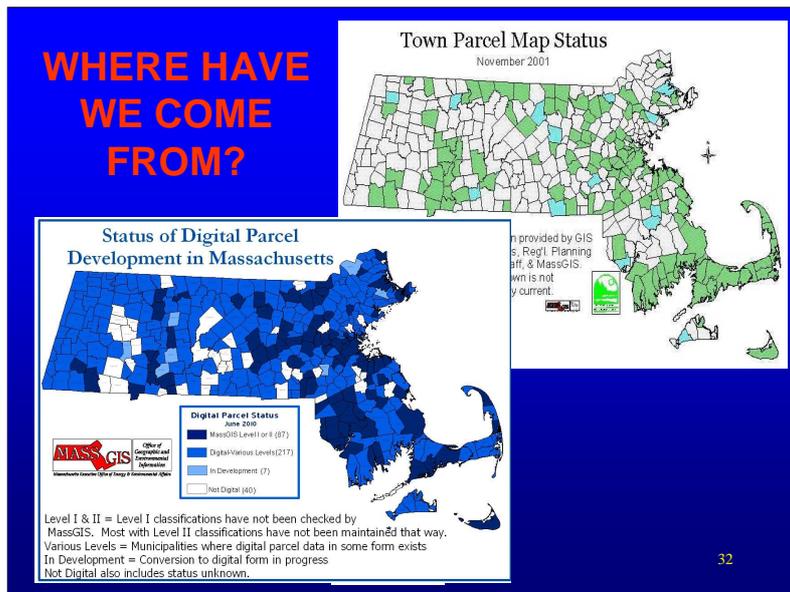
- Single point inside parcel (assign parcel address) -- 2,119
- Addresses assigned to trailers from trailer park map -- 230
- Points identified on Williams College campus -- 130
- Multiple building points in a single parcel assigned a new "entry point" with range -- 223

Fieldwork

- Building points with no part of address known -- 219
- Building points assigned street name from parcels, but missing street number -- 77
- 39 entry points added to represent 223 buildings

HOW WE WILL GET THERE

1. **Contract for standardizing assessor maps for all municipalities:**
 - Automate mylar/linen maps
 - “Revise” and “enhance” existing digital data to meet Level II of state standard
2. **MassGIS will develop initial draft of master address file – regionally coordinated review**
3. **MassGIS develop initial map of points representing structures with addresses for each community – regionally coordinated review**



For 2001 map, green = digital, blue = developing, gray = none. This map was originally developed in collaboration with Dave Beck, then chair of the MAAO GIS Committee.

For 2010 map, dark or medium blue are communities with existing digital assessors maps, light blue are developing (least current information), and white is no digital assessors map. While the 2010 status looks like “good news”, much of the existing digital data are out-of-date or very poor quality.

NOTE: all cities and towns in Berkshire County DO have a digital assessor map of some sort.

PARCEL STATUS AS NUMBERS

2 Million Parcels in MA
(+300,000 condos)

(Dept. of Revenue, FY10)

- 43% good quality digital
- 47% “other digital” (sometimes very poor)
- 3% = digital in development
- 7% not in digital form



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So the problem with the existing data is that there is very little consistence from one community to the next. It was with this in mind that in 2001, MassGIS issued the first version of its digital parcel standard.

PURPOSES OF STANDARD

1. Providing communities a flexible specification for developing a digital parcel file for use in a GIS database
2. Make it possible to merge parcel data from multiple communities for multi-town mapping and analysis
3. Establish parcel ID that's unique statewide
4. Assuring minimum level of spatial accuracy
5. Assuring a minimum and consistent set of attributes

ORGANIZATION OF STANDARD

- Level I – “an approach to digital parcel mapping that should be [widely] useful...in conversion of maps to digital form...”
- Level II – covers additional descriptive information for map parcels and provides mechanism for modeling the 1:M and M:1 relationships between assessors maps and data. Assessor’s maps and data become inventories of land not simply inventories of taxable properties.
- Level III – Direct link between maps and assessor’s database; master address file; unique identifier for buildings.

MINIMUM DATABASE INFORMATION FROM TAX LIST

- Property ID
- Site address
- Owner name and address
- Use code
- Book and Page
- Lot size
- Assessed Value
- Date and price of last sale
- Other info

ADVANTAGES OF STANDARD

- Better quality, more accessible, assessor's maps
- More complete links between maps and CAMA
- Provides a specification for a consultant
- Provides data model familiar to many consultants for GIS application development
- Parcel data interface with adjacent communities will be or is seamless
- Provides basis for integrating parcel data with other land records
- Better geocoding for all

Link to Assessor's Data Without Standard...

The screenshot shows a GIS application window titled "Identify". The "Identify from" dropdown is set to "par_poly". The "Location" field shows coordinates: 236,140.879 862,998.0. The "Field" and "Value" columns are populated with the following data:

Field	Value
LOT	2
LOT_ALPHA	<null>
LOT_SIZE	0
LSBK_LSPG	14940 216
UNKNOWN	0
PROJ_ID	52U-2
TOTAL_VAL	6600
FY	2007
LOT_UNITS	A
LS_DATE	6/30/2005
LS_PRICE	1
LAND_USE	1021
HE_NUM	<null>
SITE_NUM	2A
LO_NUM	<null>
SITE_ADDR	INDIAN COVE WAY
CITY	EASTON
ZIP	<null>
OWNER1	WATERS NAOMI B
OWN_ADDR	5 INDIAN COVE WAY
OWN_CITY	SOUTH EASTON
OWN_STATE	MA
OWN_ZIP	02375
OWN_CO	<null>
LS_BOOK	14940
LS_PAGE	216
LIV_UNITS	<null>
RES_AREA	<null>
BLD_AREA	<null>
UNKNOWN	00

One parcel has many condos, each of which is a tax record. Without standard or some equivalent, the link between the map and the tax list gets at most one of those condos.

LINK TO ASSESSOR'S DATA WITH STANDARD...

The screenshot shows a GIS application window titled 'Identify'. The 'Identify from' dropdown is set to 'par_poly'. The main window displays an aerial photograph with a red polygon highlighting a specific area. A data table is overlaid on the map, showing the following fields and values:

Field	Value
OBJECTID	8396
MAP	52
MAP_ALPHA	U
LOT	56
LOT_ALPHA	<null>
LOT_SIZE	0
LSPC_LSPS	8808/342
UNKNOWN	1475
PROP_ID	52U-56
TOTAL_VAL	307900
FX	2007
LOT_UNITS	A
LS_DATE	5/25/2000
LS_PRICE	194900
LAND_USE	<null>
HL_NUM	<null>
SITE_NUM	12
LO_NUM	12
SITE_ADDR	INDIAN COVE WAY
CITY	EASTON
ZIP	<null>
OWNER1	LUBIAN BRIAN
OWN_ADDR	12 INDIAN COVE WAY
OWN_CITY	SOUTH EASTON
OWN_STATE	MA
OWN_ZIP	02375
OWN_CO	<null>
LS_BOOK	8808
LS_PAGE	342
LS_UNITS	<null>

Here the link picks up all the condo records. This is important for a variety of reasons include abutter notifications and, of course, addressing.

Property Information On-Line

- Banker and Tradesman
- Zillow.com
- Real Estate Mapping
- DOR LA3
- Others

Going back to my earlier comment about all records moving into digital form in the past 30 or 40 years, the current trend is for that information to find its' way onto the Internet: real estate information is no exception.



So, today you have a wealth of information available on the internet. How many of you use this web site?

zillow.com...and others...

The screenshot shows the Zillow.com homepage for a search in Westborough, MA. The search results are sorted by 'Featured' and show a list of properties. The first listing is '4 Whitehall Cir, Shrewsbury, MA', which is a house for sale priced at \$499,900, with a monthly payment of \$2,131. The property has 4 bedrooms, 2.5 bathrooms, 2,432 sqft, and a lot of 20,473. It was built in 1999 and has a 2009 property tax of \$4,212. The page also includes a sidebar with various filters and a map showing the location of the property.

And of course, we cant leave out Zillow.com. While I understand there's skepticism and even scorn about information on web sites such as zillow, I think the information on these sites will only get better and more authoritative.



REAL ESTATE MAPPING, INC.

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PARCEL MAP VIEWER APPLICATION

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[View the Virtual Tour](#)

[Take the Online Tutorial](#)

[Click here to request additional information](#)

The Parcel Map Viewer is an information retrieval tool designed for real estate agents and other real estate professionals. It offers access to detailed parcel level property maps and allows users to access property specific data such as owner name, owner address, land use, lot area, interior sqft, assessing values, annual taxes, total no. of room, total bedrooms, total baths, etc.



[Click here to enlarge](#)

There are three distinct geography layer users can access. These include:


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This site requires a subscription fee, although you can try it free for a short time if you register.

DOR LA3 APPLICATION

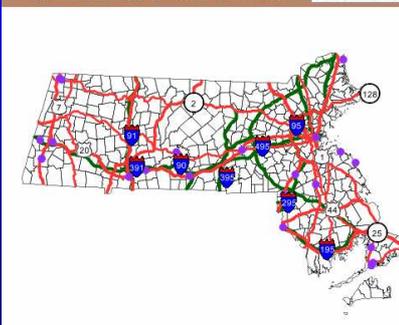


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COMMONWEALTH OF MASSACHUSETTS
Department of Revenue

Zoom In | Zoom Out | Re-Center | Info on a dot | First Select a Town



Information for point clicked on

Unique ID:	1769157.0
Address Number:	256
Street Name:	Stockbridge Rd
Municipality:	Great Barrington
State:	
Zip code:	
Plus Four:	
Jurisdiction Code:	113
Parcel ID:	09-0-17
Sale Price:	€50000
Assessed Value:	€12600
Proposed Assessed Value at Sale:	0.0
Assessment-Sale Ratio:	0.0
Deviation:	0.0
Notes:	
Book:	
Page:	0

A current place to obtain “comps” for rare uses such as, in this case, motels (purple dots with detail for one to the right)

Future of Assessing (?)

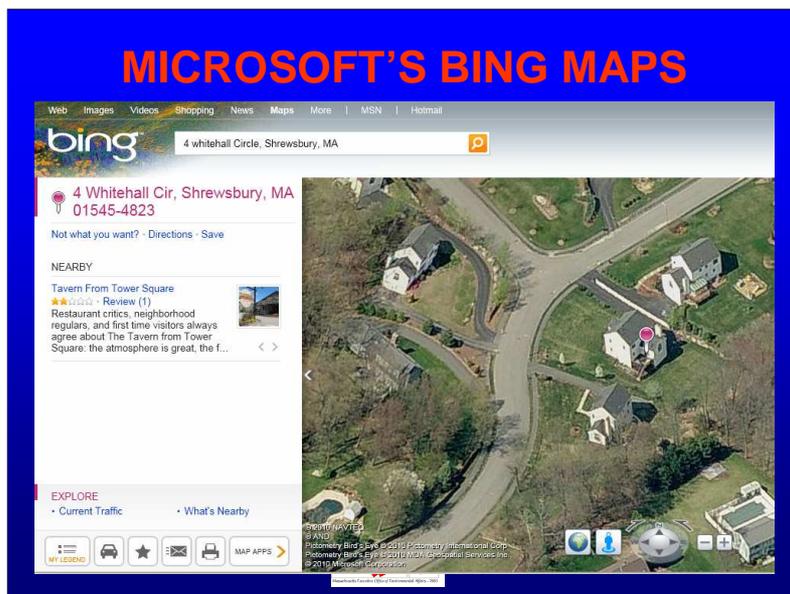
Starting to see in-office “desktop” valuation using:

- Digital assessor’s parcel maps
- Airphoto base maps (“orthophotos”)
- Oblique air photos (“Pictometry”)
- Street-level video from vehicles

On the next few slides, we’ll show examples of the above.



So, digital assessors map along with the photo base map available through MassGIS enables you to see property back yards.



Also available on the Internet are air photos taken from an angle. These oblique images can provide views of real property not visible from the street. So, for example, you can check for pools, decks, or rear additions that might not be in the assessing database.

DIGITAL REVAL: STREET LEVEL VIDEO



This is actually Google's Street View, but a frame from a drive-by video would look much the same.

FUTURE...

Map Layers

- Selected Parcel
- Dracut Parcels
- Street Labels
- Aerial Photos (2005)

Link to Book and Page of Selected Parcel
 click here to view scanned image of [book: 7497](#), [page: 244](#)

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Deeds

Book - Page	Date
7497-244	May 31, 1995
7464-125	April 28, 1995
4913-66	June 5, 1989
2520-466	January 8, 1982
582-552	January 21, 1918

Plans

Plan Book - Page	Date
173-134	April 20, 1990
135-135	December 10, 1981

Assessor Information

A button in this area would bring the user to the assessor's database for information about property valuation, usage, etc.

Deed Wiki

Full Screen of Map

...NOT POSSIBLE WITHOUT STANDARDIZED PARCEL DATA

MASSGIS Geographic Information System

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This is from a prototype developed for the Middlesex North Registry of Deeds – an on-line linking of assessors parcels and registry records. Eventually title searches will be done entirely on-line but this capability records standardized assessor parcel data.

WORKSHOPS: Minor Findings

- 1. Continue educating communities about value of digital assessors parcels**
- 2. Give municipalities a sense of control over process**
- 3. Maps/data on-line saves staff time – factor in ROI**
- 4. Assessors need to keep copy of each year's tax map**
- 5. Technical assistance on standard and on moving to digital parcel map maintenance important**
- 6. Land and building values still established separately**

WORKSHOPS: Major Findings

1. Assessors more likely to support maintaining digital parcel map if can be used for producing printed map format they use
2. Concern that standardized mapping bolsters (?) case for regionalized assessing
3. Hypothetical DOR requirement for submitting maps to MassGIS when they are updated: mixed response
4. No easy way to ensure parcel and address point maintenance (351 cities and towns!)

Assessors more likely to support maintaining digital parcel map if can be used for producing printed map format they use (even if printed map is used in electronic format such as PDF)

Standardized assessor maps enhances (?) prospects for regionalized assessing

Hypothetical DOR requirement for submitting maps to MassGIS when they are updated:

SUMMARY: PLANNING

1. Assemble statewide standardized assessor mapping
2. Create points representing structures with addresses
3. Obtain multiple statewide sources of addresses, standardize them, and use them to build draft master address files for each community
4. Assign each address to a structure point
5. Procedures for maintaining and distributing data

SUMMARY: WHAT CITIES AND TOWNS WILL RECEIVE

- Standardized digital assessor tax maps
- Preliminary data set of points representing structures with addresses
- Draft master address file for review
- Access to basic GIS capabilities for their community on-line

SUMMARY: WHAT WE EXPECT FROM CITIES AND TOWNS

- **Provide existing mapping, whether digital or mylar/linen**
- **Provide extracts of selected information from assessing tax list**
- **Review master street list and master address file**
- **Once state pays for standardized mapping, maintain it that way**
- **Provide information on new structure locations**

SUMMARY: NEXT STEPS

- **Develop draft of version 2 of parcel standard – June 30**
- **Develop draft of business plan – July 31**
- **Comments on draft plan – mid-August**
- **Create final version of plan – September 15**
- **Comments on draft parcel standard – July 31**
- **Create final version of revised parcel standard – October 1**
- **Start parcel mapping procurements – November 1**

THANK YOU.

QUESTIONS AND DISCUSSION...

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In this image we show yellow points representing each structure; the points are created by the software.

197 Points, 211 Single-Family Parcels in entire area

Buildings at arrows are newly-constructed since the detailed elevation data were acquired and so do not show up in the mapping.