The Commonwealth's Master Address Database

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MassGIS

MassIT's mission is to drive the digital business of state government to meet the continually evolving needs of constituents, schools, businesses, and local government.

PRESENTATION OVERVIEW

MassIT

- Postal VS Geographic Addresses
- What is the Master Address Database (MAD)
- Why and how we built it
- How you can obtain products
- MAD Shortcomings
- Maintaining the MAD
- Municipal and state collaboration on the MAD

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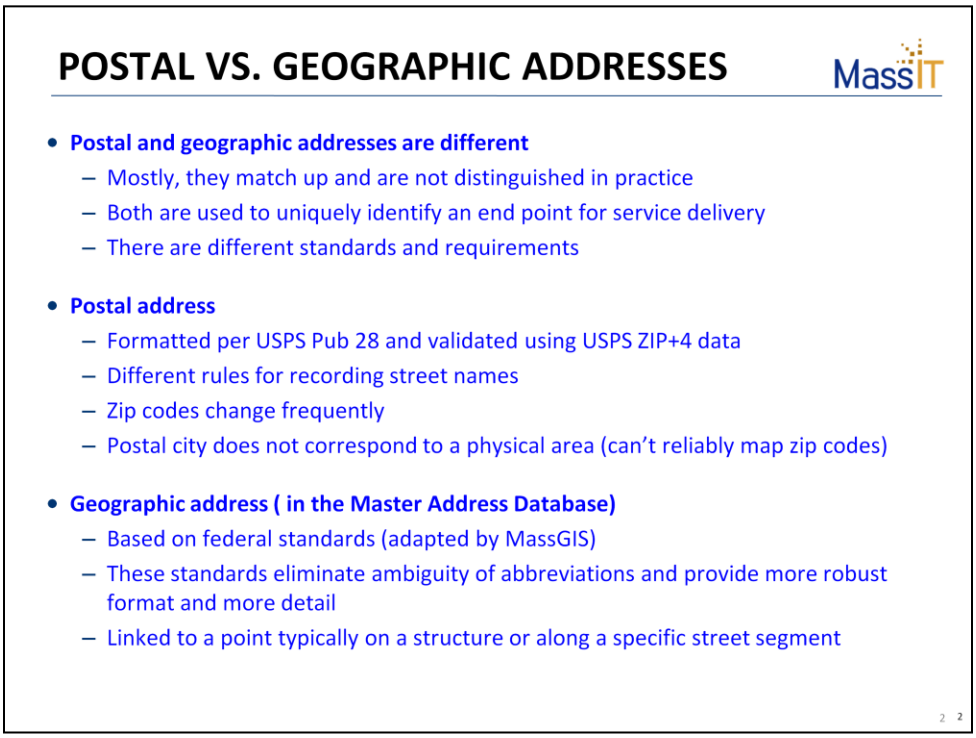
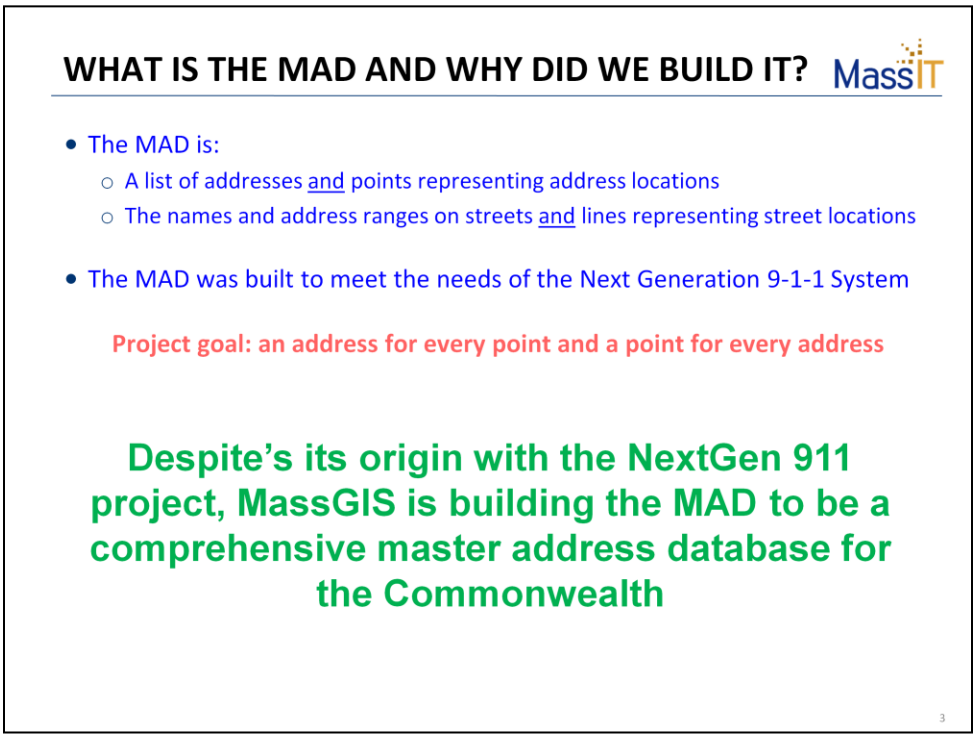


One very important detail in understanding how MassGIS developed the master address database is that an address for postal delivery is not necessarily the same as the geographic location of the address.

This is an important distinction generally, including for the Census, but is especially important when it involves delivering emergency services.



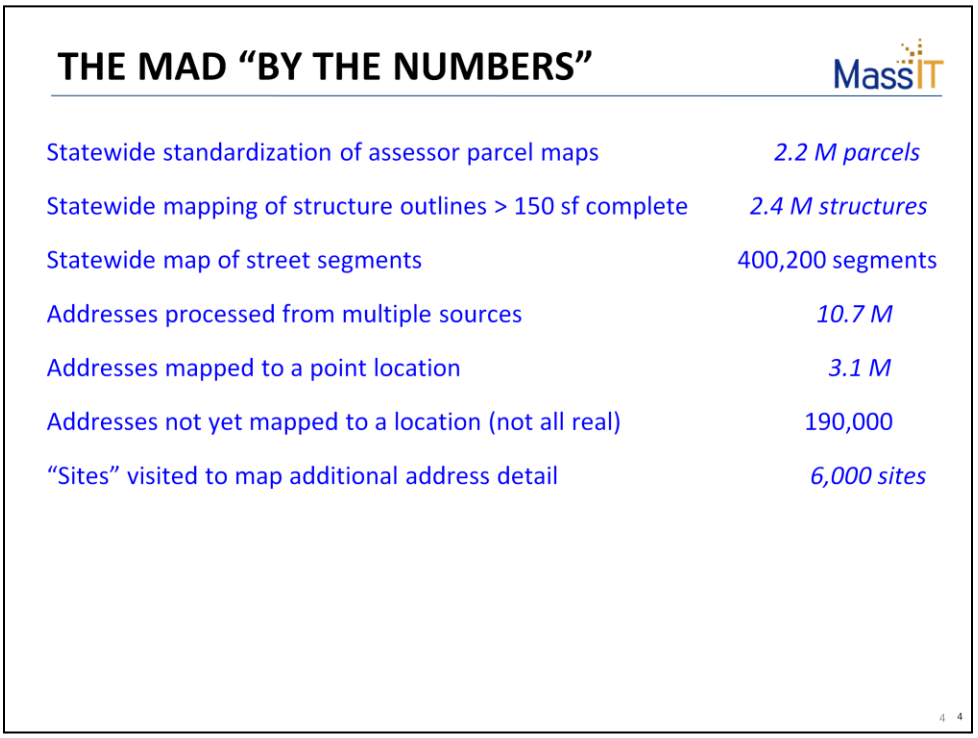
The MAD was created to meet the needs of the Next Generation 911 System being rolled out in this calendar year.
I don't have time to go into the details. However, in brief, this new system depends on high quality mapping for determining, for any given address or other location such as the location of a cell phone call, where the call is routed for dispatching emergency services.

One of the primary reasons for a new 911 call system is that the majority of 911 calls are now being made on cell phones. The existing E-9-1-1 system was built around knowing your location from the address associated with your phone. The address for a wired phone will still be relevant in the NextGen System. However, since cell phones don't have a fixed address, a different approach was needed. It's important to also understand that the detailed mapping displayed to emergency response dispatchers

in the NextGen system will include address locations.

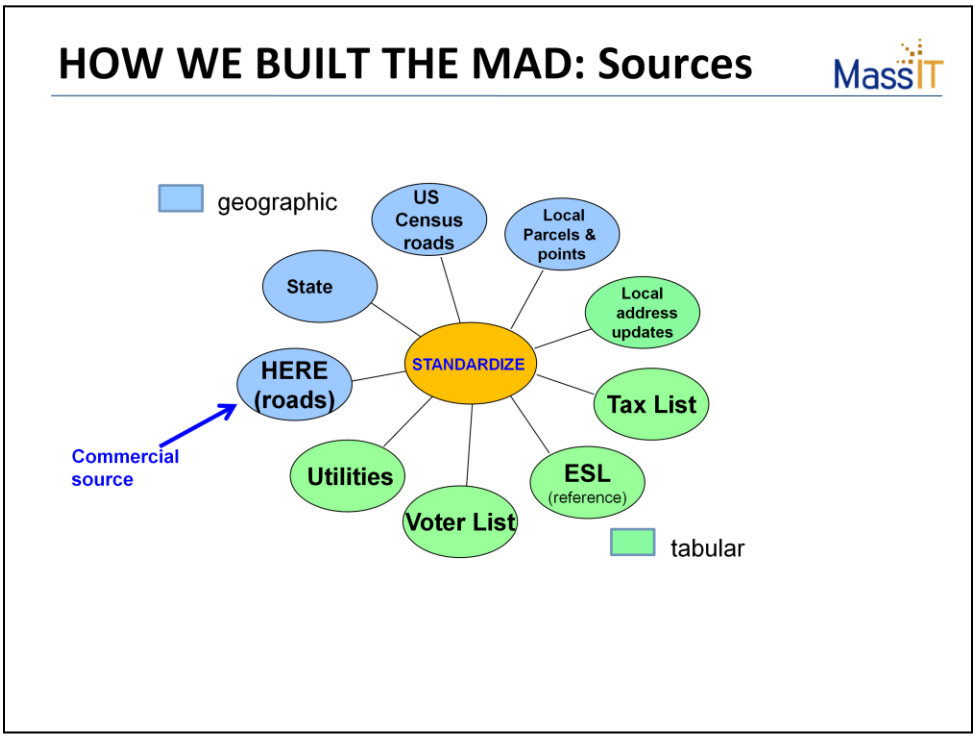
In developing the MAD, the project goal was:
an address for every point and a point for every address.

The devil of course is in the details – what points need addresses and to what level of detail do you take addressing.



In the last six years, we've done quite a bit of work…

- We managed statewide standardization of assessor parcel mapping and mapping all the structures in the state
- We transferred parcel addresses to points on those structures
- We comprehensively mapped streets statewide
- We processed and standardized over 10 million addresses from multiple sources
- Working with the regional planning agencies, we mapped sites with multiple buildings per parcel statewide. Most of those sites have been visited by staff to determine what address or addresses is associated with each building.



This graphic depicts the various sources for the MAD. The key to developing the master address database is standardization.

Only by standardizing address information from multiple sources, whether street names or full addresses can you determine whether or not a street name or address is the same in two sources.

BUILDING THE MAD: Standardization

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SOURCE	ORIGINAL STREET NAME	STANDARDIZED STREET NAME
CENSUS ROADS	Garden Street Ct	GARDEN STREET COURT
STATE	GARDEN ST CT	GARDEN STREET COURT
HERE	GARDEN STREET CT	GARDEN STREET COURT
MSAG	GARDEN ST CT	GARDEN STREET COURT
ASSESSOR	Garden Street Court	GARDEN STREET COURT
MSAG	E Spring St RR Xng	EAST SPRING STREET RAILROAD CROSSING

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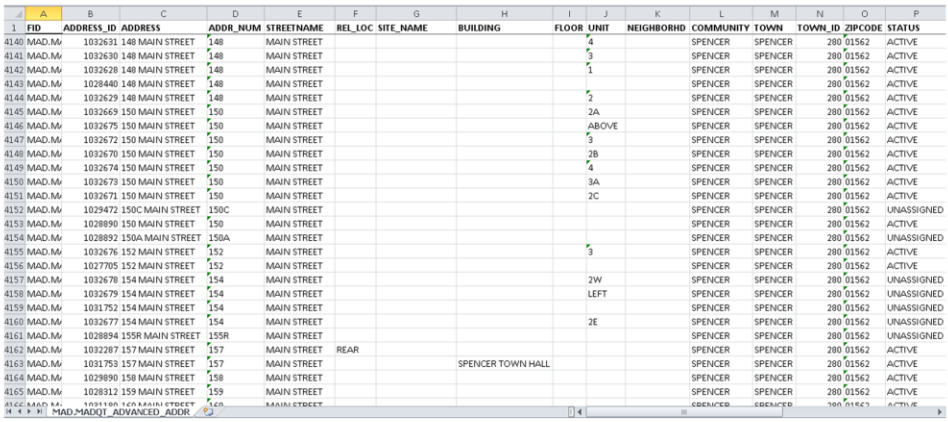
Here's a brief example of the standardization I'm talking about

Here you see how the street name
"Garden Street Ct." appeared in five sources;
each source was slightly different.

Standardization involves spelling everything out in full.
We did this with a computer program we wrote.
The versatility of this program is shown in the name
on the last line. The program correctly spelled out
an unusual but real street name from a
heavily abbreviated version

MAD: Address List



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	FID	ADDRESS_ID	ADDRESS	ADDR_NUM	STREETNAME	REL_LOC	SITE_NAME	BUILDING	FLOOR	UNIT	NEIGHBORHD	COMMUNITY	TOWN	TOWN_ID	ZIPCODE	STATUS
4140	MAD.M/	1032631	148 MAIN STREET	148	MAIN STREET					4		SPENCER	SPENCER	280	01562	ACTIVE
4141	MAD.M/	1032630	148 MAIN STREET	148	MAIN STREET					3		SPENCER	SPENCER	280	01562	ACTIVE
4142	MAD.M/	1032628	148 MAIN STREET	148	MAIN STREET					1		SPENCER	SPENCER	280	01562	ACTIVE
4143	MAD.M/	1028440	148 MAIN STREET	148	MAIN STREET							SPENCER	SPENCER	280	01562	ACTIVE
4144	MAD.M/	1032629	148 MAIN STREET	148	MAIN STREET					2		SPENCER	SPENCER	280	01562	ACTIVE
4145	MAD.M/	1032669	150 MAIN STREET	150	MAIN STREET					2A		SPENCER	SPENCER	280	01562	ACTIVE
4146	MAD.M/	1032675	150 MAIN STREET	150	MAIN STREET					ABOVE		SPENCER	SPENCER	280	01562	ACTIVE
4147	MAD.M/	1032672	150 MAIN STREET	150	MAIN STREET					3		SPENCER	SPENCER	280	01562	ACTIVE
4148	MAD.M/	1032670	150 MAIN STREET	150	MAIN STREET					2B		SPENCER	SPENCER	280	01562	ACTIVE
4149	MAD.M/	1032674	150 MAIN STREET	150	MAIN STREET					4		SPENCER	SPENCER	280	01562	ACTIVE
4150	MAD.M/	1032673	150 MAIN STREET	150	MAIN STREET					3A		SPENCER	SPENCER	280	01562	ACTIVE
4151	MAD.M/	1032671	150 MAIN STREET	150	MAIN STREET					2C		SPENCER	SPENCER	280	01562	ACTIVE
4152	MAD.M/	1029472	150C MAIN STREET	150C	MAIN STREET							SPENCER	SPENCER	280	01562	UNASSIGNED
4153	MAD.M/	1028890	150 MAIN STREET	150	MAIN STREET							SPENCER	SPENCER	280	01562	ACTIVE
4154	MAD.M/	1028892	150A MAIN STREET	150A	MAIN STREET							SPENCER	SPENCER	280	01562	UNASSIGNED
4155	MAD.M/	1032676	152 MAIN STREET	152	MAIN STREET					3		SPENCER	SPENCER	280	01562	ACTIVE
4156	MAD.M/	1027705	152 MAIN STREET	152	MAIN STREET							SPENCER	SPENCER	280	01562	ACTIVE
4157	MAD.M/	1032678	154 MAIN STREET	154	MAIN STREET					2W		SPENCER	SPENCER	280	01562	UNASSIGNED
4158	MAD.M/	1032679	154 MAIN STREET	154	MAIN STREET					LEFT		SPENCER	SPENCER	280	01562	UNASSIGNED
4159	MAD.M/	1031752	154 MAIN STREET	154	MAIN STREET							SPENCER	SPENCER	280	01562	UNASSIGNED
4160	MAD.M/	1032677	154 MAIN STREET	154	MAIN STREET					2E		SPENCER	SPENCER	280	01562	UNASSIGNED
4161	MAD.M/	1028894	155R MAIN STREET	155R	MAIN STREET							SPENCER	SPENCER	280	01562	UNASSIGNED
4162	MAD.M/	1032287	157 MAIN STREET	157	MAIN STREET	REAR						SPENCER	SPENCER	280	01562	ACTIVE
4163	MAD.M/	1031753	157 MAIN STREET	157	MAIN STREET			SPENCER TOWN HALL				SPENCER	SPENCER	280	01562	ACTIVE
4164	MAD.M/	1029890	158 MAIN STREET	158	MAIN STREET							SPENCER	SPENCER	280	01562	ACTIVE
4165	MAD.M/	1028312	159 MAIN STREET	159	MAIN STREET							SPENCER	SPENCER	280	01562	ACTIVE

MAD.MADOT_ADVANCED_ADDR

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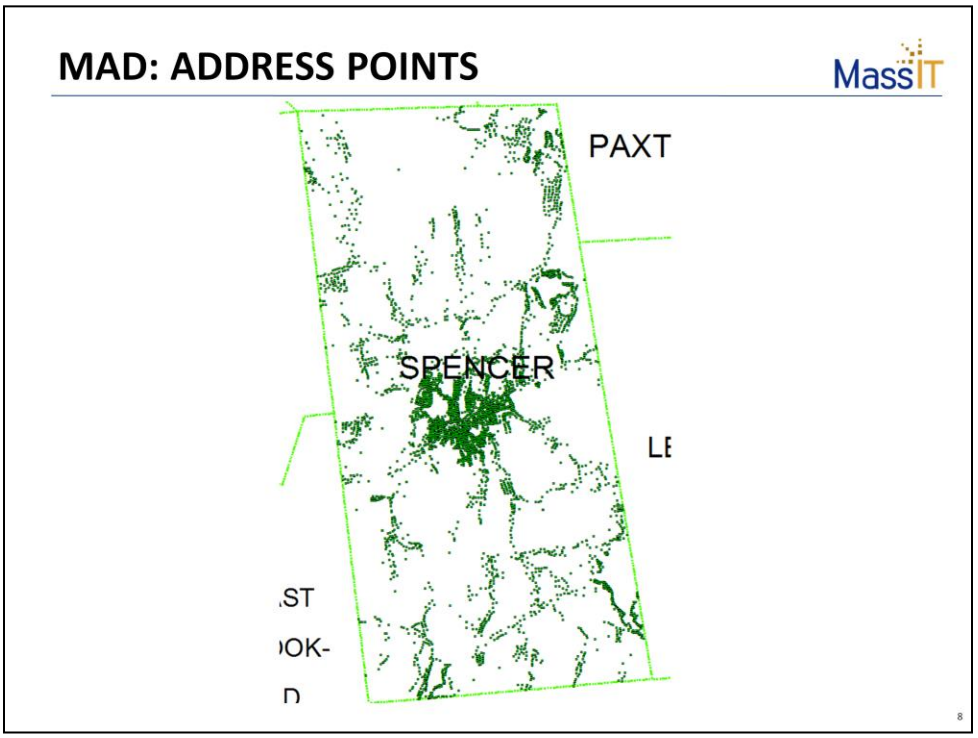
So here's an example of a portion of our master address list for the Town of Spencer

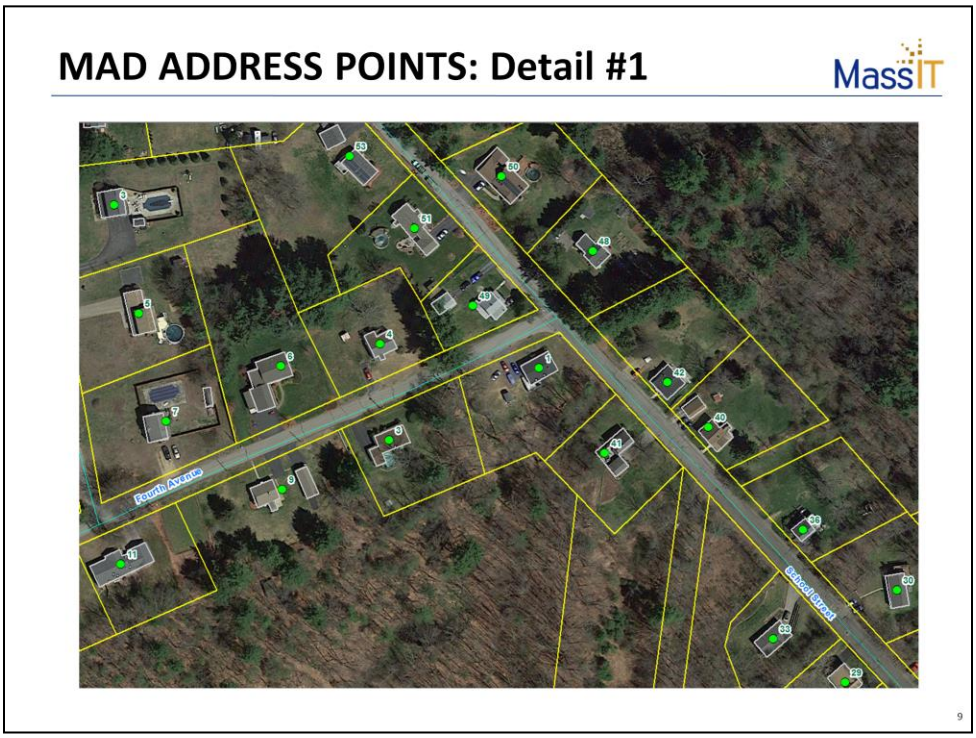
Call out:
>When we have unit information we break it out but this info is very incomplete

>Building name: "157 Main Street" which is also "Spencer Town Hall"

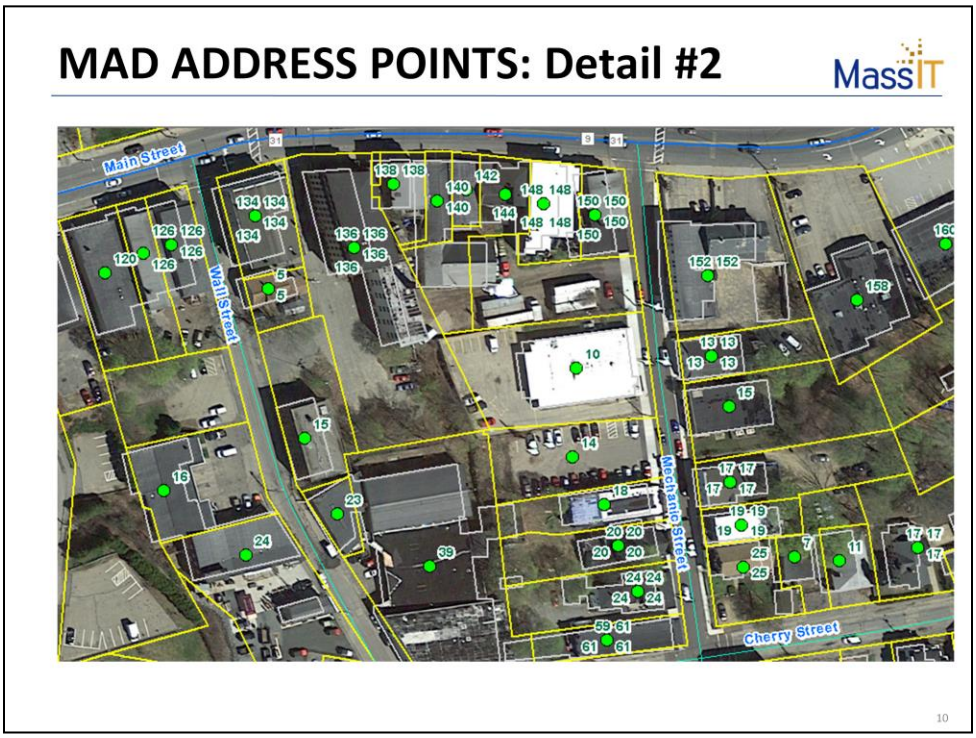
>Note STATUS: "ACTIVE", "UNASSIGNED", "NOT FOUND", and other values



I've arbitrarily chosen the Town of Spencer to
show some examples of what's in the MAD.
However we have the same thing for every community.

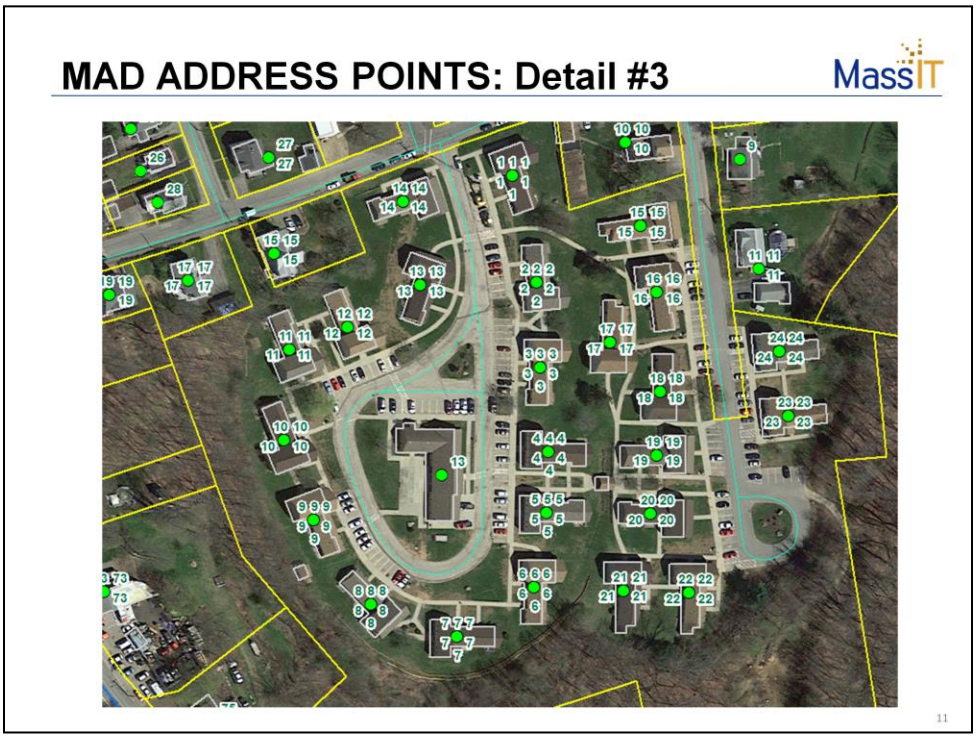


Here you see the easy stuff: address points on single family homes



In this graphic from the down town area, things are more complicated.

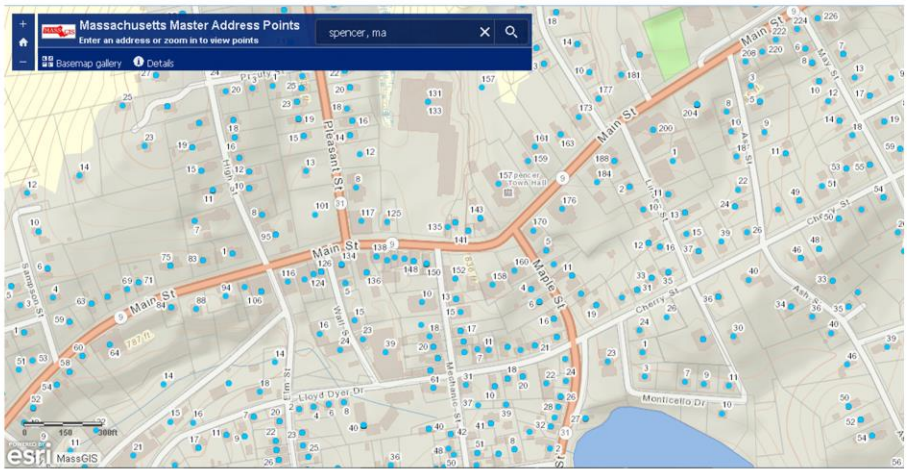
Address points with the same number repeated are those where there are unit numbers that are not shown



Finally, this graphic illustrates one of those multi-building sites that I mentioned. We've had people working in the field for about 18 months on these sites figuring out which building is which and which addresses go on which building. As with the last graphic, repeated house numbers indicate unit level addresses exist.

Besides residential sites such as this one, there are of course, many campuses, office parks, and medical complexes.

ON-LINE VIEWING OF MAD ADDRESS POINTS



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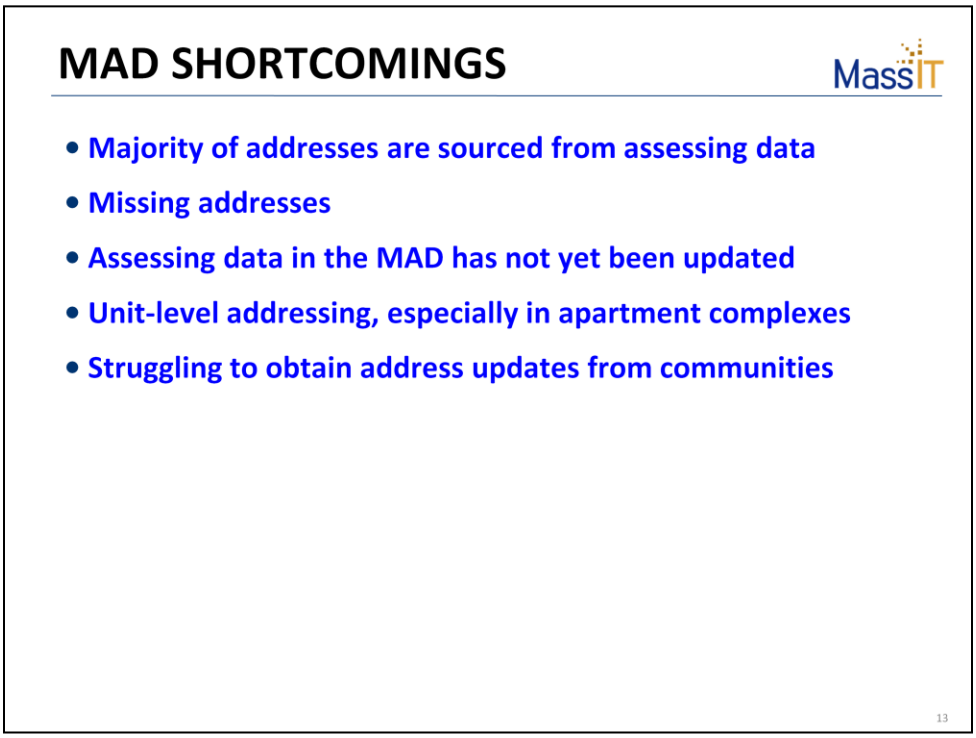
This is a screen shot of the on-line map where you can View the MAD address points and their associated adresses for anywhere in the state.

At this level of zoom you only see the house #s.

When you zoom in you see the # and the street name



The MAD is incomplete.

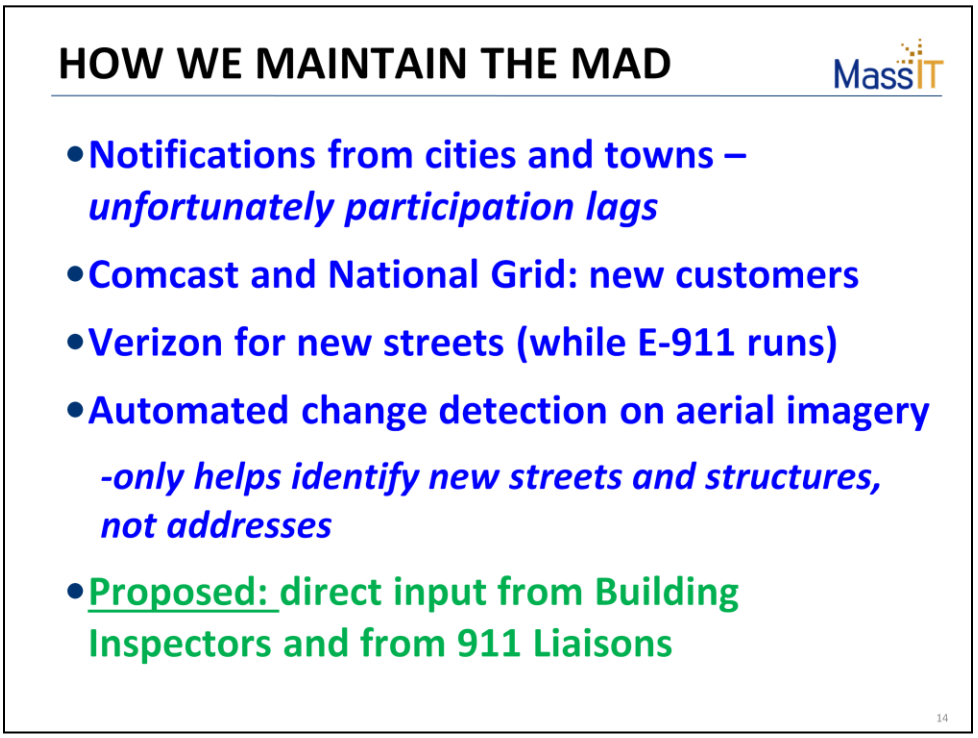
Common reasons for missing addresses are:

- **2 & 3 family structures: due to limitations of assessing data these often only have one address. But this is variable across communities because some assessors carry address ranges**

- **Addresses are also often missing for mixed use properties**

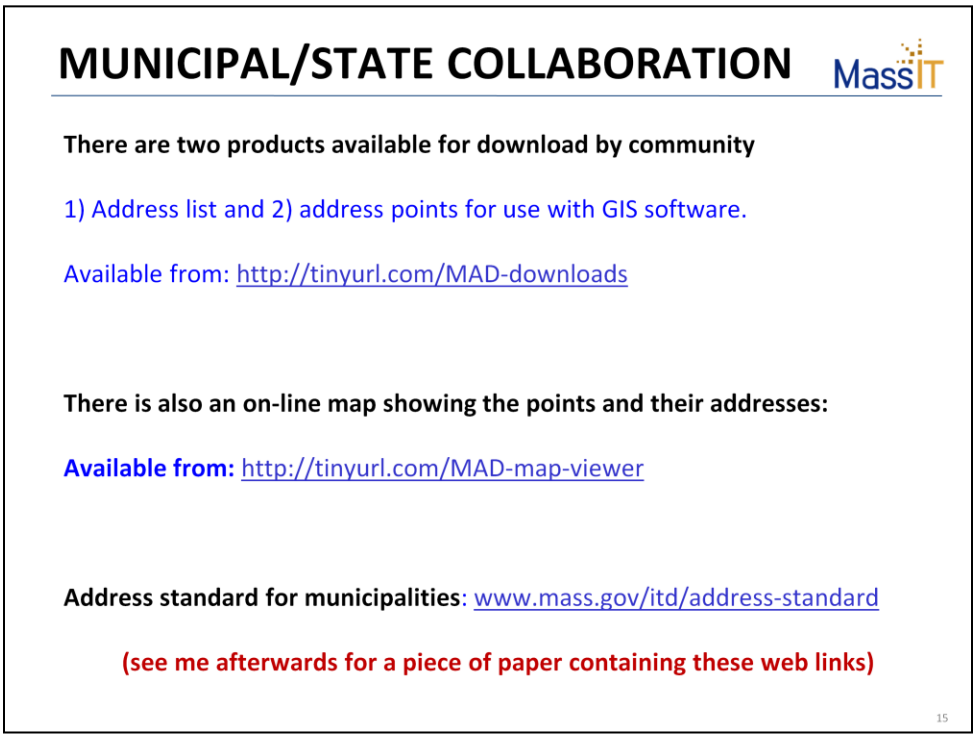
- **Unit-level addresses for the same house number are also problematic, especially because how they are recorded in different databases is highly variable.**

- **Finally, we know our addresses for tax exempt properties are incomplete**



Although we have contacted all communities about sending us address updates, only 80 have done so in the last six months.

If cities and towns don't notify us of new or changed addresses, those addresses will not be added to the NextGen 911 system which could lead to emergency response delays.



MassGIS' intent is for the MAD to be a Commonwealth resource developed and maintained in collaboration with cities and towns. While municipalities assign addresses, addresses are relied upon at all levels of government and are central to the functioning of the NextGen 911 System.

So the idea is that we receive address information, standardize it, research a location if its missing, and then make the information available back to communities. Obviously, ideally we will receive address updates complete with information on their geographic location.

Please see me afterword for a printed version of this Information. I also have information on our new Address Standard for Municipalities and on best practices for municipal address assignment.

NOTIFYING MASSGIS

- **Update MassGIS with new address info:**
  - **Email authoritative address updates to:**

    notify911address@mass.gov

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MassIT

Thank you

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