



Statewide Parcel Mapping – Somewhere Over the Rainbow

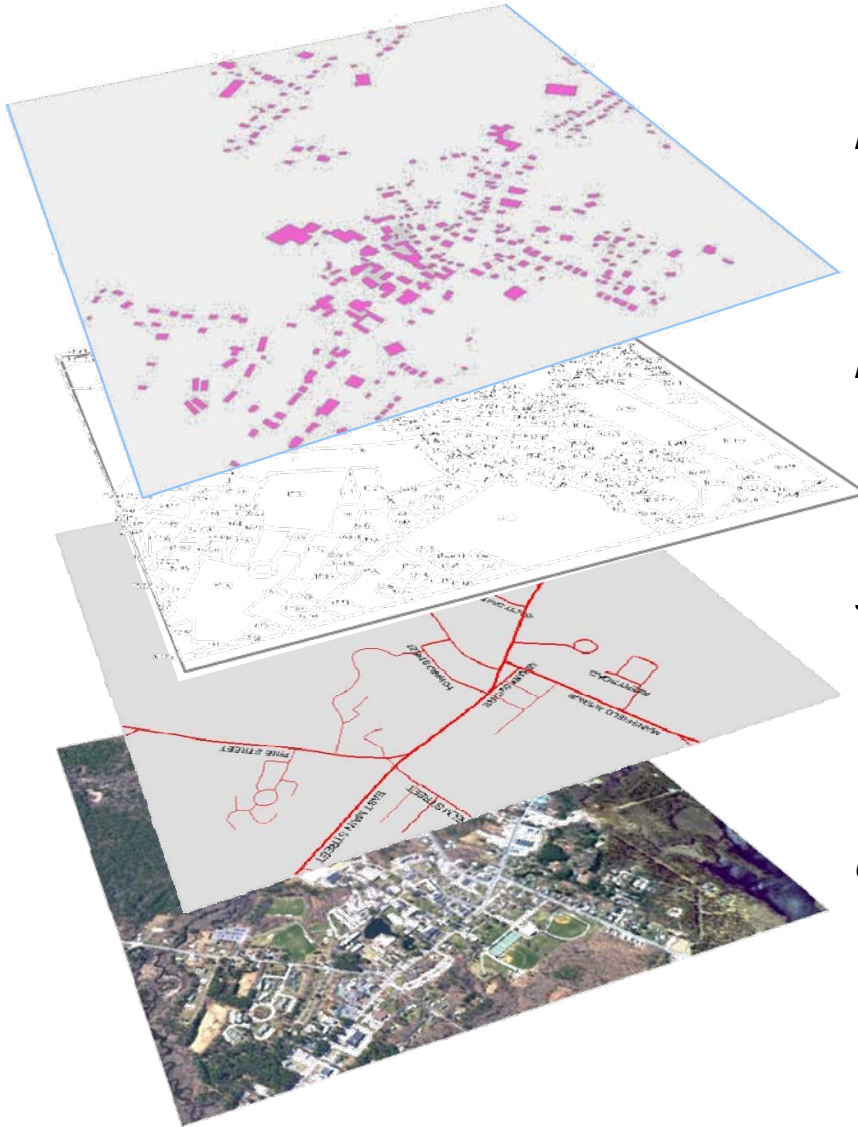
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Spring NEARC
May 17 2011



Cadastral mapping in Massachusetts

- **Steps in supporting cadastral mapping**
 - Establish strategic goal – 2007 Strategic Plan
 - Benefits / Constituencies
 - Funding Requirements
 - Quantify benefits and make a business case
 - Establish standards and specifications
 - Evolving process
- **Compile, distribute, merge into statewide layer**
 - Set up contracts and develop product
 - Distribute product
 - Establish maintenance process
- **Coordinate across state boundaries?**

Establish Strategic Goal



Buildings

- Accurately mapped using imagery and parcel owner/address info

Parcels and Point Addresses

- Boundaries and more accurate addresses
- Created on ortho and road base

Streets and Geocoding

- Created on ortho base
- address matching (geocoding)

Orthophoto

- Accurate, intuitive base for all other GIS development eg building footprints



Establish Strategic Goal

- Parcel data maintained by 351 municipal entities
 - From 150 to 150,000 parcels / town
 - From 400-scale paper to 100-scale CAD/GIS
 - As of 2007, approx. 200 digital, 50 “good quality”
- Strategic plan recommended seamless, standardized layer, compatible with orthophoto (30cm)
- Strategic plan identified variety of funding sources for Mass. Spatial Data Infrastructure build-out over three years – parcel one-time cost estimated at between \$2.5M and \$3.0M to complete



Benefits / Constituencies

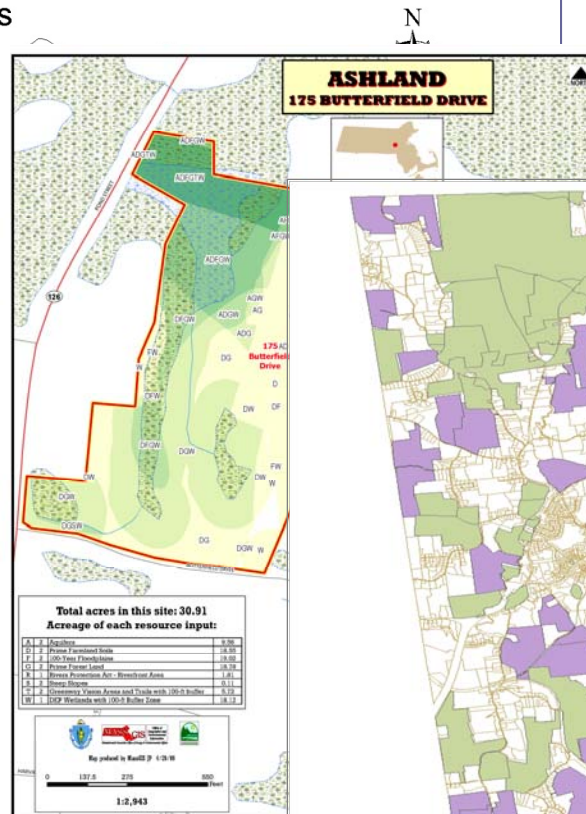
- Foundation for municipal GIS systems
 - Assessors, planners, public works, public safety, zoning, school, conservation/recreation
 - Support greater transparency, enhanced service delivery
- Used by state agencies as well
 - Protection of land & natural resources
 - Environmental permitting & enforcement
 - Economic development
 - Emergency response
 - Better quality geocoding – especially for 911
 - Transportation corridor planning
 - Management of state lands and facilities

Sample Benefits

REAL ESTATE MARKET AREAS ALLERTON HILL SECTION



Property Value



Development

Conservation



Siting Wind Turbines



Quantify benefits from statewide parcels

- “Investment Brief” requirement for capital funding
- Annualized benefits
 - New revenue
 - Enforcement \$250K (one time benefit)
 - Tax Revenue \$200K
 - Efficiency
 - Reduced staff time in field – state \$110K
 - Cons comm & assess staff time \$680K
 - Private sector, access to data \$200K
 - Cost Avoidance
 - Local Parcel Mapping \$670K (one time benefit)
 - Development Screening \$175K
 - 21E evaluation \$400K



Establish standards

- Purposes of parcel standard
 - Provide communities with useful specification for GIS DB
 - Respect assessor needs
 - Enable data use at regional scale
 - Town boundaries built-in
 - Establish unique statewide parcel ID
 - Concatenated X,Y
 - Assure minimum spatial accuracy
 - Road in ROW (if it really is!)
 - Assure minimum set of attributes
 - Guarantee match rate of parcel polygons to tax list
 - > 1000 parcels, 99.8% developed, 97% undeveloped must match
 - < 1000 parcels, 99% developed, 95% undeveloped



Level III standard simplifies data model

1:M relationship

Parcel Polygon

Map_Par_ID	Loc_ID
13_4_8	737496_2940836
12_2_14	737398_2940750
14_2_21	737250_2940573
15_5_4	737253_2940450
37_2_1	737850_2940100
37_2_2	737700_2940150



Tax Record

Loc_ID	Prop_ID	Map	Block	Lot	Use_Code
737496_2940836	13_4_8	13	4	8	101
737398_2940750	12_2_14	12	2	14	102
737250_2940573	12_2_14A	12	2	14A	102
737253_2940450	14_2_21	14	2	21	900
737850_2940100	15_5_4	15	5	4	340
737700_2940150	37_2_1	37	2	1	101



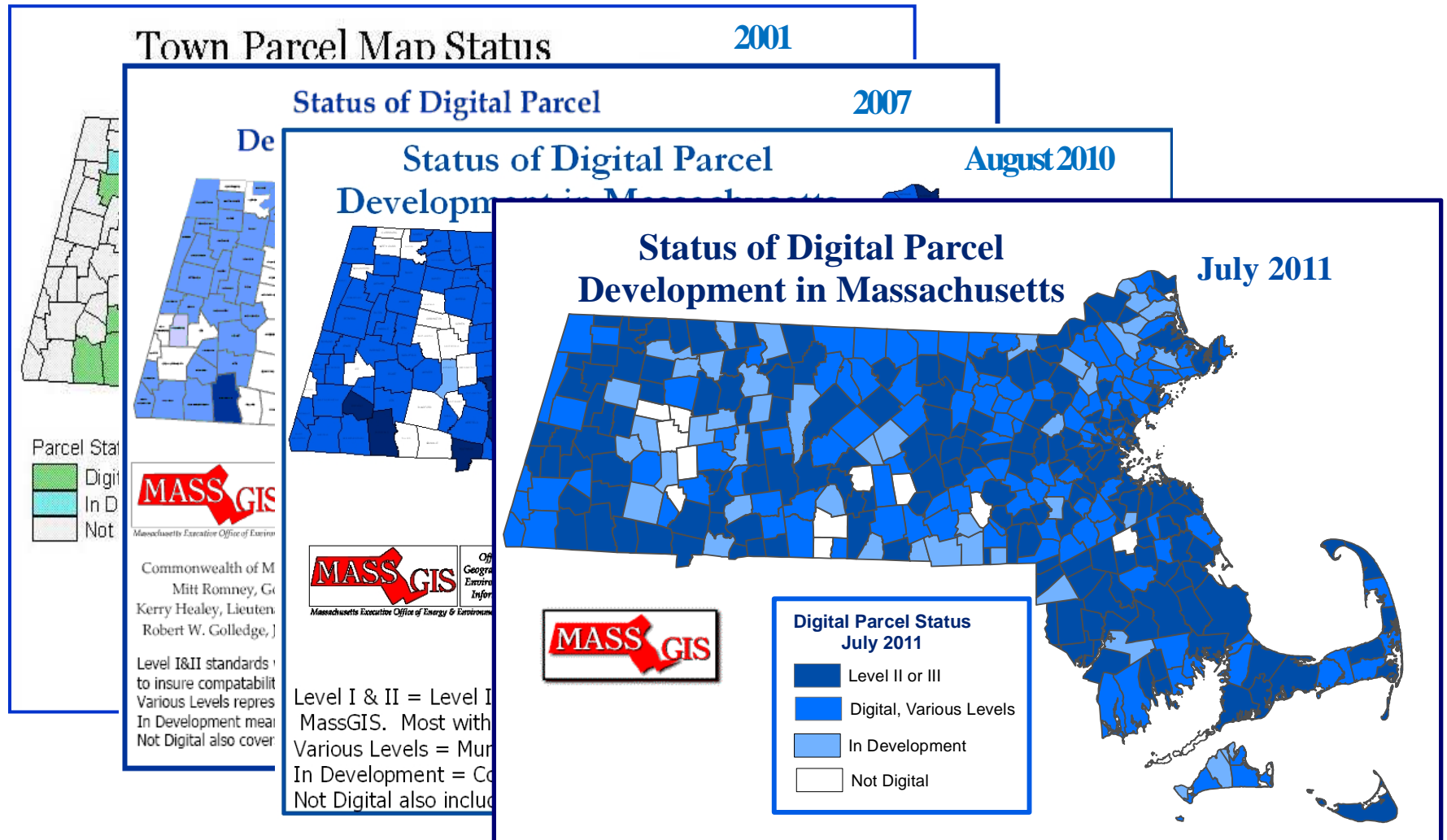
Do it! - automation and accuracy

Location: (270538.161567 810932.894113)

Field	Value
OBJECTID	154623
PROP_ID	48 03 001 009
TOTAL_VAL	1093300
FY	2002
LOT_SIZE	87120
LOT_UNITS	S
LS_DATE	05021990
LS_PRICE	600000
LAND_USE	101
LO_NUM	100
HI_NUM	0
SITE_ADDR	100 CAREY LN
CITY	FALMOUTH
ZIP	02540
OWNER1	RASIC JANKO IVAN
OWN_ADDR	315 RIVERSIDE DR APT 14D
OWN_CITY	NEW YORK
OWN_STATE	NY
OWN_ZIP	10025
OWN_CO	USA
LS_BOOK	00986
LS_PAGE	0045
LIV_UNITS	1
BLD_AREA	0
RES_AREA	0
TOWN_ID	96



Progress in Parcel Mapping 2001-2010



Funding rounds - 2002 (\$434,000) 2006 (\$198,000) 2010-2011 (\$800,000)



Parcel mapping and public safety

