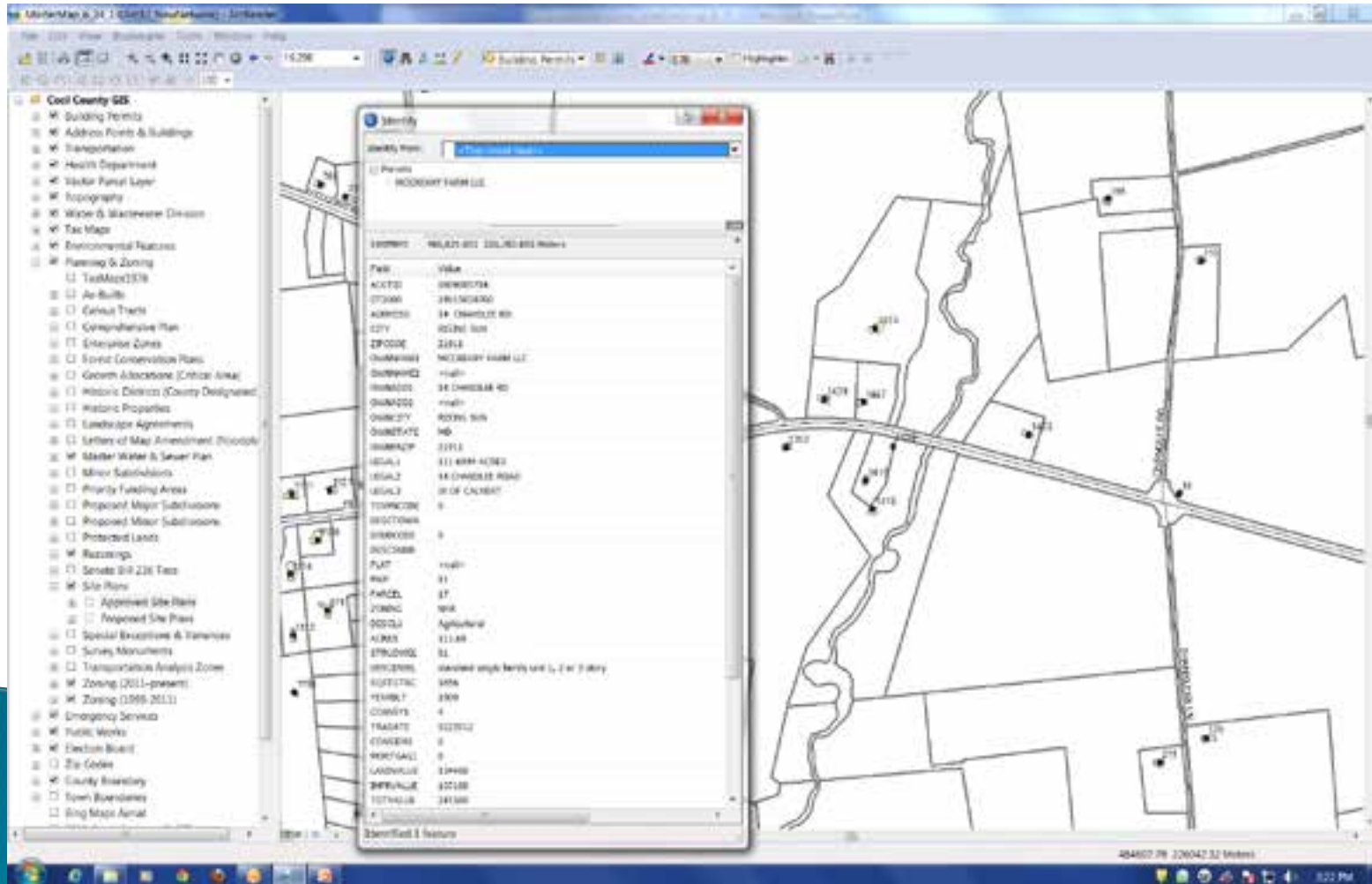


The Quest for Timely Parcel Attribute Data Cecil County, Maryland



December 10, 2013

Background

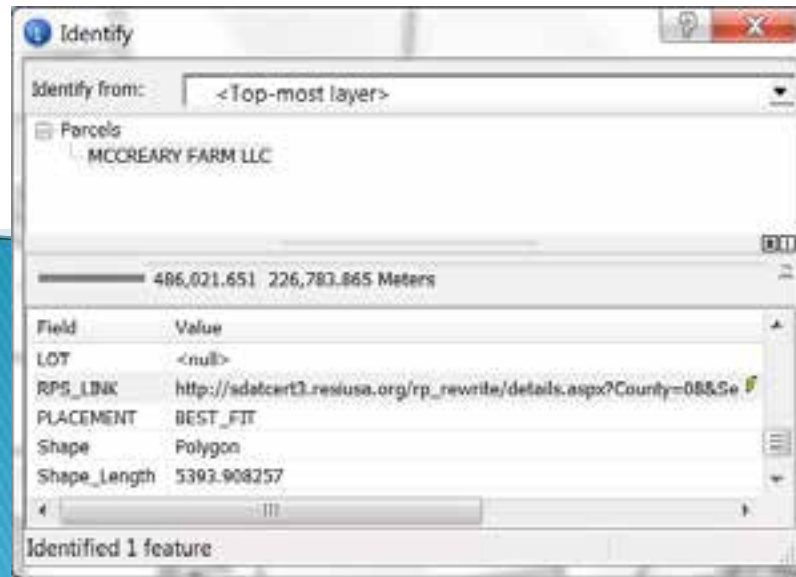
- Reliance on Maryland Property View

- From ~ 2007 to May 2013 Cecil County relied on the Maryland Property View product to update attributes in the parcel layer.

- **Updates to Property View are supposed to occur every 12 months.**

- But oftentimes that is not the case (i.e. February 2012 to September 2013 - 19 months - was the time between the two latest releases).

- We developed the “hyperlink to SDAT” concept to compensate.



The Hyperlink Concept Has Its Weaknesses

Analyses done using the data cannot use the hyperlink button

- i.e. How many parcels are owned by Gobbledygook, LLC?
How many parcels were transferred in April 2013?
What is the assessed value of all parcels within Cecilton?

It continually had to be explained to system users

- i.e. "I sold that parcel to Frank Smith last year! Why do your records still show it as being in my name? (or the reverse, "I just bought this property, why don't your records...)

"As part of [*your expensive study name here*], we performed an in-depth analysis of [*whatever you are studying*]...What? What do you mean the industrial park is now owned by Gobbledygook, LLC?"

We need timely data for our Parcel Layer!

Goals

- 1) Better data = better analyses;
- 2) Provide accurate, up to date information;
- 3) Eliminate confusion;
- 4) Eliminate reliance on MDP's Property View product;
- 5) Provide data that can be used on an enterprise level (i.e. Hansen, Vela, etc).

Department of Assessments and Taxation

The screenshot displays the website for the Maryland Department of Assessments & Taxation (SDAT). At the top, there is a navigation menu with links for HOME, ABOUT SDAT, BUSINESS, REAL PROPERTY, TAX & ASSESSMENTS, FORMS & APPLICATIONS, SDAT/STATS, and SERVICES. A search bar is located in the top right corner. Below the navigation menu is a banner for A. J. BILLIG & CO. AUCTIONEERS, featuring a gavel icon and the text "PROFESSIONALISM AND INTEGRITY". Below the banner is a disclaimer: "This advertisement does not constitute or imply an endorsement, recommendation or favoring by the Department of Assessments and Taxation or the State of Maryland." A link is provided to "Click here for full disclaimer statement".

The main content area is titled "Real Property Data Search (w2)" and includes a "Search Help" link. Below this is a section titled "THE TERMS OF USE for the SDAT web site prohibit any form of automatic or robotic data collection, extraction or copying, such as data mining or web scraping. Violation of any Term of Use immediately terminates the user's license or permission to access and/or use SDAT's web site. See full statement of the TERMS OF USE at <http://www.dat.state.md.us/sdatweb/privacy.html>."

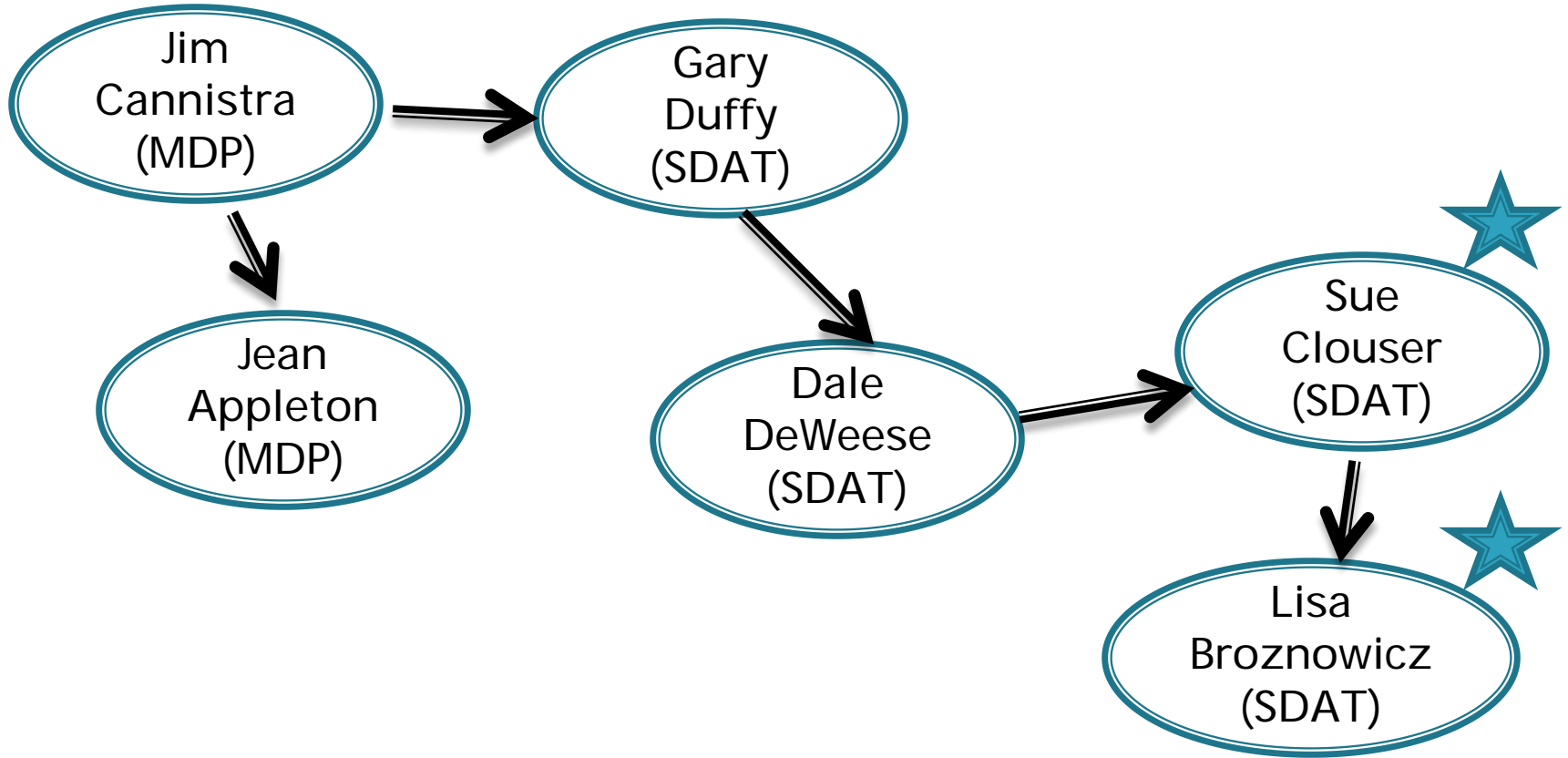
A progress indicator shows three steps: 1. Select the Search Method, 2. Enter Search Parameters, and 3. Results. The current step is 1. Below this are two dropdown menus: "Select the county in which to search:" and "Select the search method to proceed:". A "Continue" button with a right-pointing arrow is located at the bottom right of the form area.

At the bottom of the page, there is a list of instructions:

1. This screen allows you to search the Real Property database and display property records.
2. Click [here](#) for a glossary of terms.
3. Deleted accounts can only be selected by Property Account Identifier.
4. While we have confidence in the accuracy of these records, the Department makes no warranties, expressed or implied, regarding the information.

How can we get this into GIS?

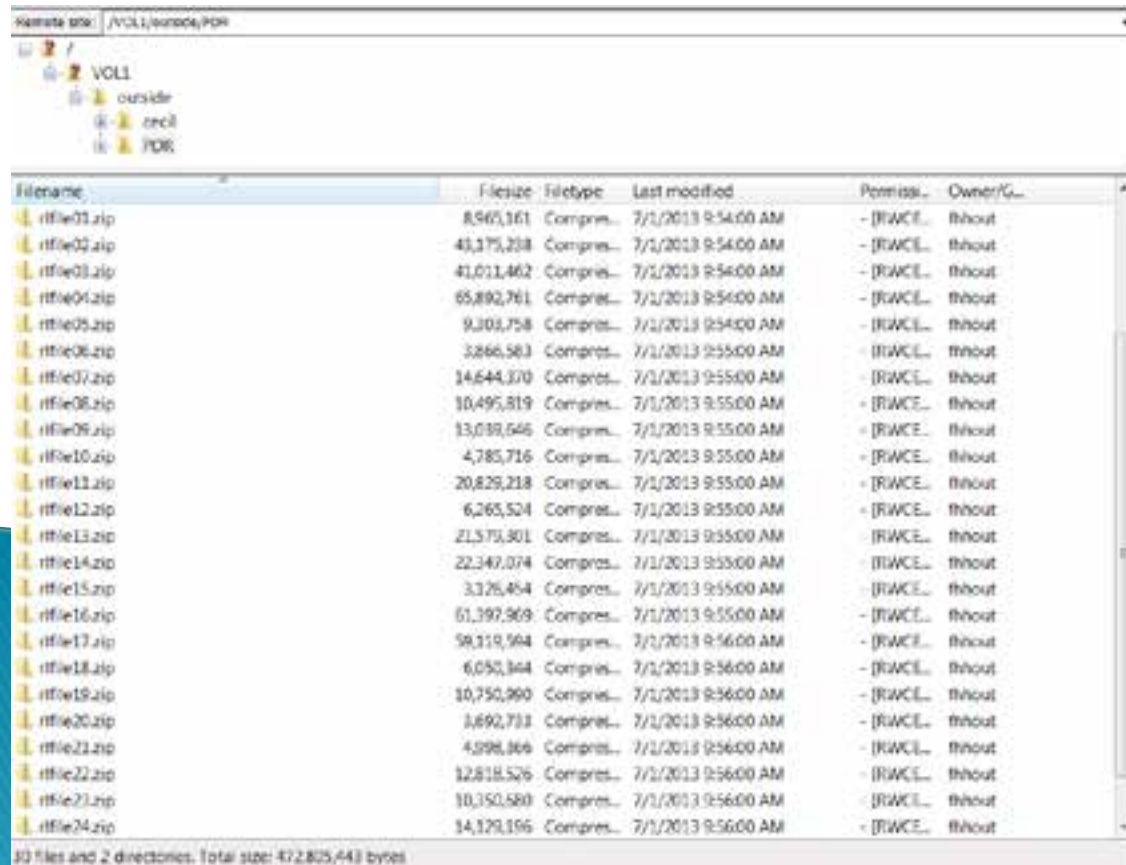
And who has it?



The "2000 Character Data Release"

SDAT Services Page - <http://www.dat.state.md.us/sdatweb/services.html>

- SDAT makes a real property master file available, on a monthly basis, via their FTP site.
- Cecil County staff obtained a user name and password, and we now have access to our data (and all the other counties' data, too!)



Filename	Filesize	Filetype	Last modified	Permissi...	Owner/G...
rfile01.zip	8,965,161	Compres...	7/1/2013 9:54:00 AM	- [RWCE...	fhout
rfile02.zip	43,175,208	Compres...	7/1/2013 9:54:00 AM	- [RWCE...	fhout
rfile03.zip	41,011,462	Compres...	7/1/2013 9:54:00 AM	- [RWCE...	fhout
rfile04.zip	65,892,761	Compres...	7/1/2013 9:54:00 AM	- [RWCE...	fhout
rfile05.zip	9,303,758	Compres...	7/1/2013 9:54:00 AM	- [RWCE...	fhout
rfile06.zip	3,266,583	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile07.zip	14,644,370	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile08.zip	10,495,819	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile09.zip	13,039,646	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile10.zip	4,785,716	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile11.zip	20,829,218	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile12.zip	6,265,524	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile13.zip	21,573,301	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile14.zip	22,347,074	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile15.zip	3,326,464	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile16.zip	61,397,969	Compres...	7/1/2013 9:55:00 AM	- [RWCE...	fhout
rfile17.zip	59,319,994	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile18.zip	6,050,344	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile19.zip	10,750,990	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile20.zip	1,692,733	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile21.zip	4,098,866	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile22.zip	12,818,526	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile23.zip	10,350,580	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout
rfile24.zip	14,129,196	Compres...	7/1/2013 9:56:00 AM	- [RWCE...	fhout

33 files and 2 directories. Total size: 472,805,443 bytes

Where's the key to the code?

The SDAT Public Data Record webpage -

<http://www.dat.state.md.us/sdatweb/publicdata.htm>

NO	DATA	CLASS	POSITIONS	SIZE
1-3	RECORD KEY	AN	1-16	16
1	County Code	AN	1-2	2
2	District/Ward	AN	3-4	2
3	Account Number	AN	5-16	12
4	Subdistrict	AN	17-18	2
5	Geographic Code	AN	19-20	2
6	Owner Occupancy Code	AN	21	1
7	Owner's Name	AN	22-55	34
8	Owner's Name 2nd Line	AN	56-90	34
9	Name Key	AN	90-114	25
10-15	MAILING ADDRESS			
10	PO Box/Street Address	AN	115-144	30
11	Address 2nd Line	AN	145-174	30
12	City	AN	175-190	22
13	State Code	AN	197-198	2
14	Zip Code	AN	199-203	5
15	Zip +4 Code	AN	204-207	4
16-19	LEGAL DESCRIPTION			
16	FILLER	AN	208-211	4
17	Legal Description Line 1	AN	212-231	20
18	Legal Description Line 2	AN	232-255	24
19	Legal Description Line 3	AN	256-279	24
20-28	PREMISE ADDRESS			
20	Number	N	280-284	5
21	Number Suffix	AN	285	1
22	Direction	AN	286-287	2
23	Name	AN	288-309	22
24	Type	AN	310-314	5
25	City	AN	315-336	22
26	Zip Code	AN	337-341	5
27	Zip +4 Code	AN	342-345	4
28	Condominium Unit No.	AN	346-351	6
29-31	DEED REFERENCE 1			
29	Clerk Initials	AN	352-354	3
30	Liber	AN	355-359	5
31	Folio	AN	360-363	4
32-35	FILLER	AN	364-376	13
36	Town Code	AN	377-379	3
37	Subdivision Code	AN	380-383	4
38	Flat Number	AN	384-389	6
39	Section	AN	390-392	3
40	Block	AN	393-397	5

The Good News...

We now have the information we need (i.e. field position, field length, etc) to develop an import specification file using Microsoft Access.

The Bad News...

- Access can only accommodate an import file with less than 255 import fields.
- With 400 import fields, 36% of the data (all in the final 145 import fields) will be lost when imported into Access.

So, can we get the data we need?

- Open Access – Select “External Data” – Text File
- Browse to the location of the file on your computer
- Import the source data into a new table in the current database.

Get External Data - Text File

Select the source and destination of the data

Specify the source of the data.

File name: C:\Users\dblock\Documents\ Browse...

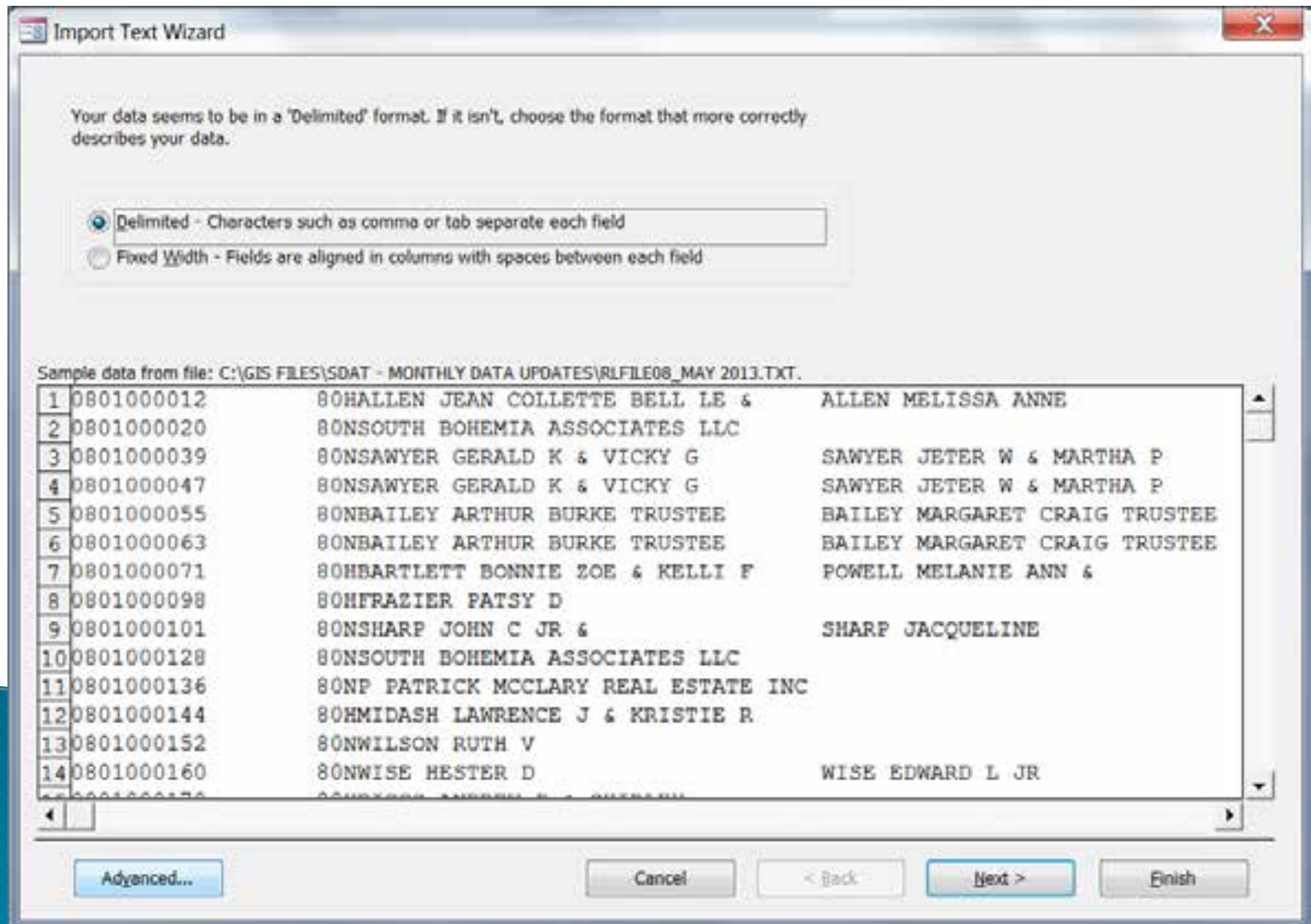
Specify how and where you want to store the data in the current database.

Import the source data into a new table in the current database.
If the specified table does not exist, Access will create it. If the specified table already exists, Access might overwrite its contents with the imported data. Changes made to the source data will not be reflected in the database.

Append a copy of the records to the table: RFile08_July2013
If the specified table exists, Access will add the records to the table. If the table does not exist, Access will create it. Changes made to the source data will not be reflected in the database.

Link to the data source by creating a linked table.
Access will create a table that will maintain a link to the source data. You cannot change or delete data that is linked to a text file. However, you can add new records.

- In the Import Text Wizard, select the “Advanced...” option in the lower left of the screen.



- The first time you do this, you need to create the import specification file using the “field name”, “data type” and “indexed” fields as shown below.

Rfile08_May 2013 Import Specification

File Format: Delimited Fixed Width

Field Delimiter: ,

Text Qualifier: {none}

Language: English

Code Page: OEM United States

Dates, Times, and Numbers

Date Order: MDY Four Digit Years

Date Delimiter: / Leading Zeros in Dates

Time Delimiter: : Decimal Symbol: .

Field Information:

Field Name	Data Type	Indexed	Skip
Field1	Memo	No	<input type="checkbox"/>
Field2	Memo	No	<input type="checkbox"/>
Field3	Memo	No	<input type="checkbox"/>
Field4	Text	No	<input type="checkbox"/>
Field5	Text	No	<input type="checkbox"/>
Field6	Text	No	<input type="checkbox"/>
*			<input type="checkbox"/>

Buttons: OK, Cancel, Save As..., Specs...

- Or, if you already have the import file developed...
In the Advanced screen, select the "Specs..." option on the right side of the screen.

Rifile08_May 2013 Import Specification

File Format: Delimited Fixed Width

Field Delimiter: .

Text Qualifier: {none}

Language: English

Code Page: OEM United States

OK

Cancel

Save As...

Specs...

Dates, Times, and Numbers

Date Order: MDY Four Digit Years

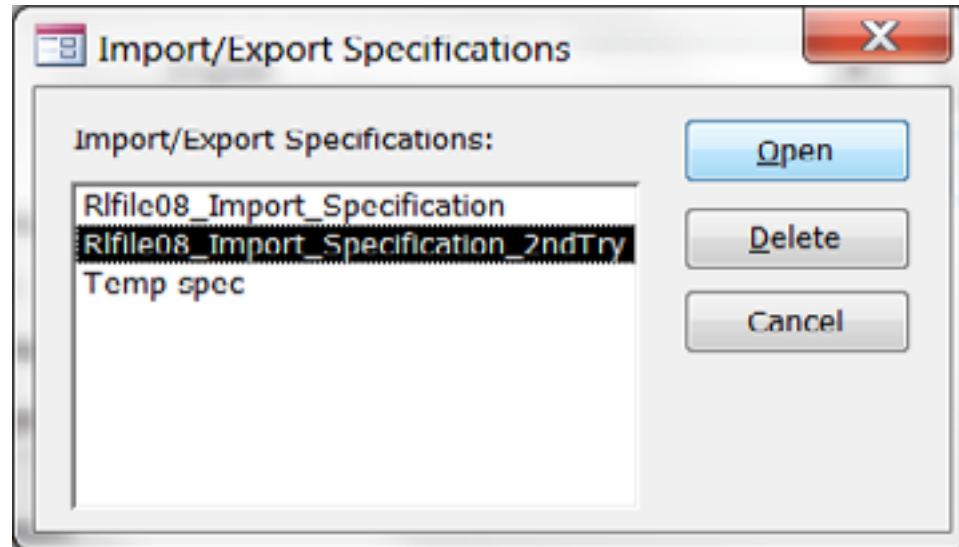
Date Delimiter: / Leading Zeros in Dates

Time Delimiter: : Decimal Symbol: .

Field Information:

Field Name	Data Type	Indexed	Skip
Field1	Memo	No	<input type="checkbox"/>
Field2	Memo	No	<input type="checkbox"/>
Field3	Memo	No	<input type="checkbox"/>
Field4	Text	No	<input type="checkbox"/>
Field5	Text	No	<input type="checkbox"/>
Field6	Text	No	<input type="checkbox"/>
*			<input checked="" type="checkbox"/>

- In the Import Specifications screen, select the name of the import specification file that was created previously and then press "open."



- Access will show a preview of the data import field information...
- Then press "OK," and "next" (four times), and "finish"

Rfile08_Import_Specification_2ndTry

File Format: Delimited Fixed Width

Field Delimiter: [] Text Qualifier: {none}

Language: English Code Page: OEM United States

OK Cancel Save As... Specs...

Dates, Times, and Numbers

Date Order: MDY Four Digit Years

Date Delimiter: / Leading Zeros in Dates

Time Delimiter: : Decimal Symbol: .

Field Information:

Field Name	Data Type	Start	Width	Indexed	Skip
ACCTID	Long Integer	1	10	Yes (Duplicates OK)	<input type="checkbox"/>
Field64	Text	11	8	No	<input type="checkbox"/>
Field2	Text	19	3	No	<input type="checkbox"/>
OwnName1	Text	22	34	No	<input type="checkbox"/>
OwnName2	Text	56	34	No	<input type="checkbox"/>
OwnerAgain	Text	90	25	No	<input type="checkbox"/>
OwnAdd1	Text	115	30	No	<input type="checkbox"/>
OwnAdd2	Text	145	30	No	<input type="checkbox"/>
OwnCity	Text	175	30	No	<input type="checkbox"/>

•The result is a database table that looks like this...

ID	ACCTID	Field1	Field2	OwnName1	OwnName2	OwnerAgain	OwnAdd1	OwnAdd2	OwnCity	OwnState	OwnerZip	Zip1	Legal1
1	801000012	80H		ALLEN JEAN CO	ALLEN MELISSA	ALLEN JEAN CO	PO BOX 337		CECILTON	MD	21913		337 .248 ACRE
2	801000020	80H		SOUTH BOHEM		SOUTH BOHEM	PO BOX 23		CECILTON	MD	21913		23 .1179 ACRE
3	801000029	80H		SAWYER GERAL	SAWYER JETER	SAWYER GERAL	PO BOX 11		CECILTON	MD	21913		11 .14 ACRE
4	801000047	80H		SAWYER GERAL	SAWYER JETER	SAWYER GERAL	PO BOX 11		CECILTON	MD	21913		11 .0474 ACRE
5	801000055	80H		BAILEY ARTHUR	BAILEY MARGA	BAILEY ARTHUR	855 STEMERS		EARLEVILLE	MD	21919		2406 .4625 ACRE
6	801000063	80H		BAILEY ARTHUR	BAILEY MARGA	BAILEY ARTHUR	855 STEMERS		EARLEVILLE	MD	21919		2406 .92 ACRE
7	801000071	80H		BARTLETT BONI	POWELL MELAN	BARTLETT BONI	PO BOX 437		CECILTON	MD	21913		437 .463 ACRE
8	801000098	80H		FRAZIER PATSY		FRAZIER PATSY	PO BOX 731		CECILTON	MD	21913		731 .1069 ACRE
9	801000101	80H		SHARP JOHN C J	SHARP JACQUE	SHARP JOHN C J	PO BOX 618		CECILTON	MD	21913		618 .112 ACRE
10	801000128	80H		SOUTH BOHEM		SOUTH BOHEM	PO BOX 23		CECILTON	MD	21913		23 .1277 ACRE
11	801000136	80H		P PATRICK MCC		P PATRICK MCC	PO BOX 699		CECILTON	MD	21913		699 .245 ACRE
12	801000144	80H		MIDASH LAWRE		MIDASH LAWRE	PO BOX 453		CECILTON	MD	21913		453 .303 ACRE
13	801000152	80H		WILSON RUTH Y		WILSON RUTH Y	C/O SYLVESTER	511 OAKHURST	BRANDON	FL	33511		7227 .213 ACRE
14	801000160	80H		WISE HESTER D	WISE EDWARD	WISE HESTER D	PO BOX 339	225 WATER STR	CECILTON	MD	21913		0 .178 ACRE
15	801000179	80H		BIGGS ANDREW		BIGGS ANDREW	PO BOX 405		CECILTON	MD	21913		405 .217 ACRE
16	801000187	80H		TURNER VILRON		TURNER VILRON	PO BOX 514		CECILTON	MD	21913		514 .2523 ACRE
17	801000195	80H		BIGGS ROBERT F	BIGGS RICHARD	BIGGS ROBERT F	PO BOX 444		CECILTON	MD	21913		444 .402 ACRE
18	801000209	80H		RONEY MARK T		RONEY MARK T	PO BOX 313		CECILTON	MD	21913		313 .3514 ACRE
19	801000217	80H		WILMORE JAMI		WILMORE JAMI	PO BOX 474		CECILTON	MD	21913		474 .169 ACRE
20	801000233	80H		MACKIE G EUGE	MACKIE FRANCI	MACKIE G EUGE	PO BOX 549		CECILTON	MD	21913		549 .28 ACRE
21	801000241	80H		TOKASH ANDRE		TOKASH ANDRE	225 W MAIN ST	PO BOX 541	CECILTON	MD	21913		1002 .6 ACRE
22	801000268	80H		HARVEY GABRIE		HARVEY GABRIE	139 WILSON ST		CECILTON	MD	21913		0 .091 ACRE
23	801000276	80H		DUPHILY STEPH		DUPHILY STEPH	PO BOX 361		CECILTON	MD	21913		361 1.23 ACRE
24	801000284	80H		O'NEAL MARGA	BOULDEN GALE	O'NEAL MARGA	PO BOX 308		CECILTON	MD	21913		308 .336 ACRE
25	801000292	80H		DIXON KIMBERI		DIXON KIMBERI	PO BOX 376		CECILTON	MD	21913		376 .1 ACRE
26	801000306	80H		BOULDEN HARK	BOULDEN JOYC	BOULDEN HARK	PO BOX 376		CECILTON	MD	21913		376 .25 ACRE
27	801000314	80H		NORTHERN BAY LLC		NORTHERN BAY	PO BOX 21		CECILTON	MD	21913		21 .4753 ACRE
28	801000322	80D		MCCOOL CHARL		MCCOOL CHARL	PO BOX 21		CECILTON	MD	21913		21 .276 ACRE
29	801000330	80H		SIOWAN VI LLC		SIOWAN VI LLC	C/O M&T BANK	25 S CHARLES S	BALTIMORE	MD	21201		0 4.8723 ACRE
30	801000357	80H		TEMPLIN STEVE		TEMPLIN STEVE	PO BOX 467		CECILTON	MD	21913		467 .61 ACRE
31	801000365	80H		MAYOR & COUF		MAYOR & COUF	117 W MAIN ST		CECILTON	MD	21913		0 .345 ACRE
32	801000373	80H		ELLS SONIA & W		ELLS SONIA & W	PO BOX 521		CECILTON	MD	21913		521 .37 ACRE
33	801000381	80H		WILSON LYNNE		WILSON LYNNE	PO BOX 345		CECILTON	MD	21913		345 .25 ACRE
34	801000403	80H		BRINKLEY EUGE		BRINKLEY EUGE	PO BOX 359		CECILTON	MD	21913		359 .2293 ACRE
35	801000411	80H		SEXTON BESSIE		SEXTON BESSIE	15 BULL FROG L		EKTON	MD	21921		7758 .219 ACRE

Importing the database into GIS

- 1) Export the database to an Excel Spreadsheet
- 2) Clean up the data in Excel to make sure column names, positions, etc are to your liking...

Certain fields have unique quirks...

In order to reduce the # of import fields, we often combined zeroes used as filler with other data.

So, the sq ft column has entries like "000002093"

Dividing the column by 1 in Excel eliminates all the leading zeroes

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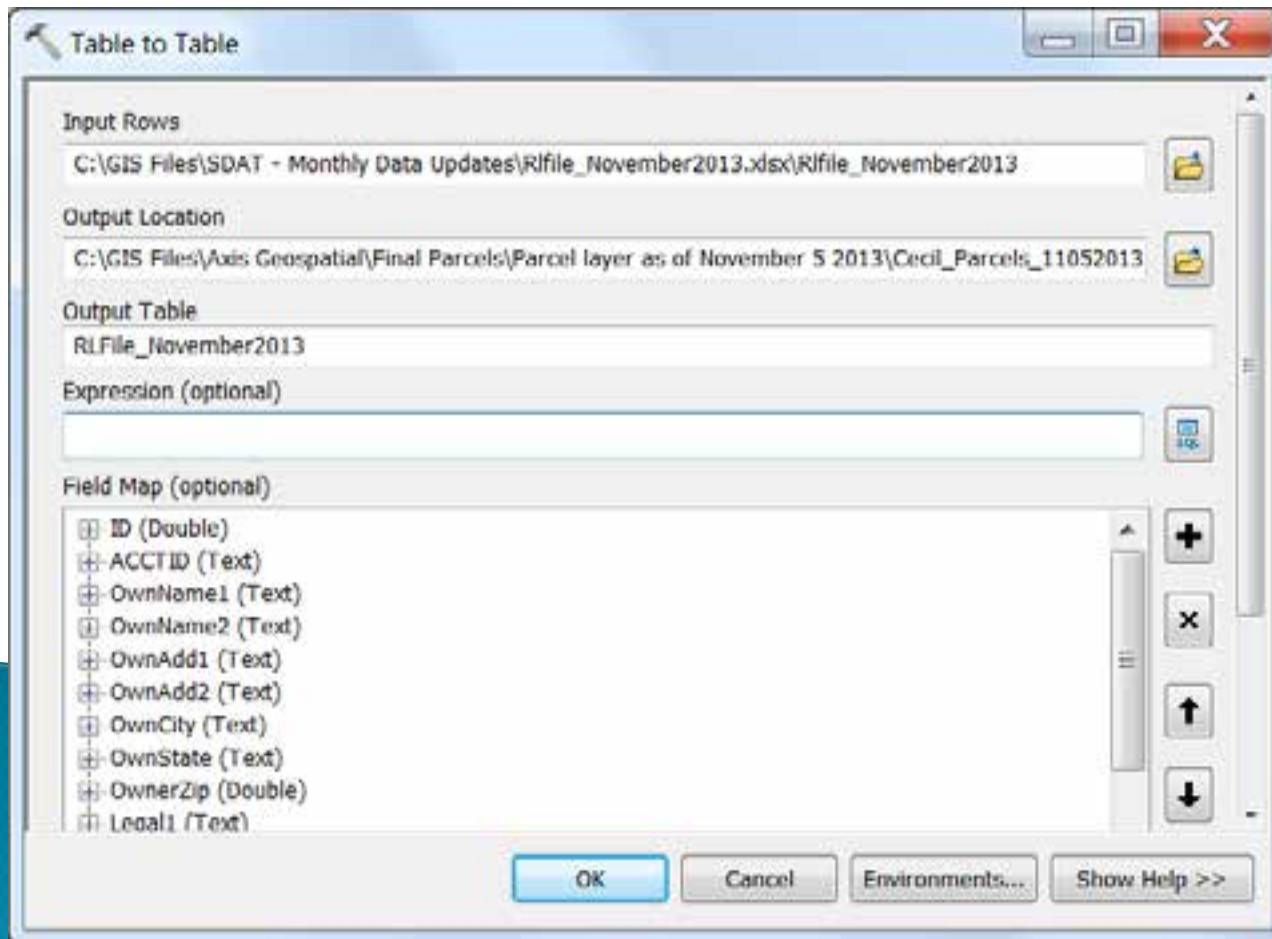
The acreage field is especially quirky ...

- 1) Size of parcel data is contained in two fields
 - a) Actual numeric value (i.e. 10.93); and
 - b) Unit of Area (i.e. "A" for acres and "S" for sq ft)
- 2) We sort the database by Unit of Area (so all the "A" and "S" values are in order.
- 3) Then we divide the "A" values by 1 (to remove the leading 00000) and divide the "S" values by 43,560 (to obtain a universal measurement in acres)

Importing the database into GIS (continued...)

3) Add the data into ArcGIS...

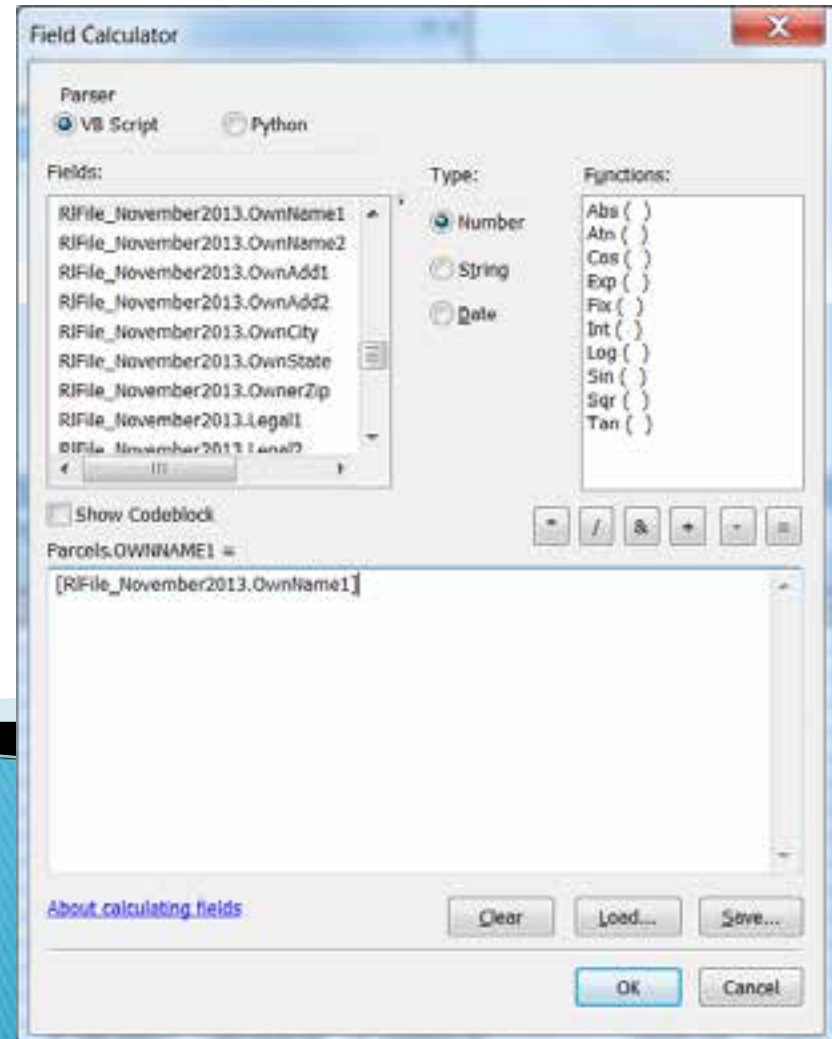
4) Load the data into the parcel geodatabase...



Importing the database into GIS (continued...)

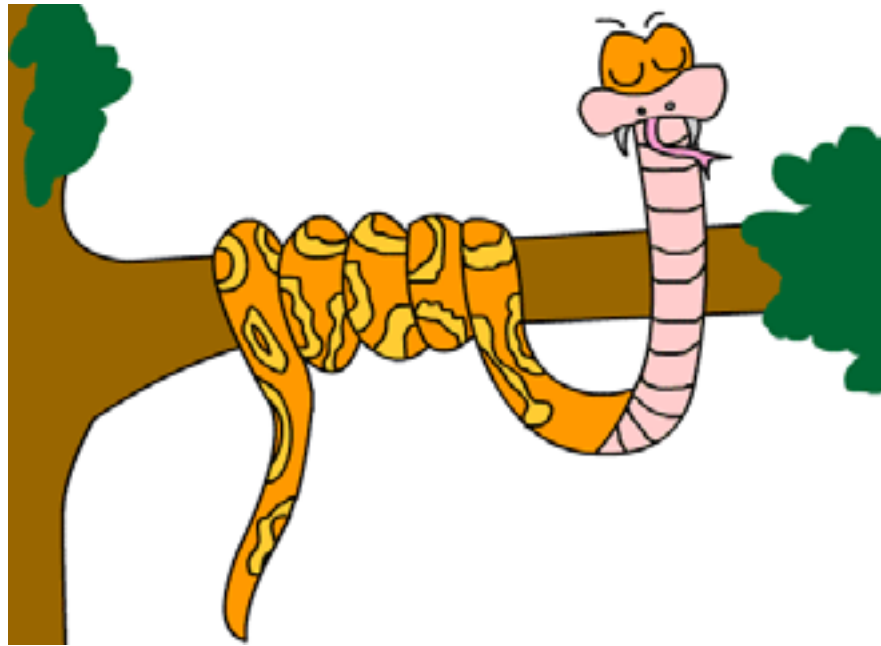
5) Using the Account ID field, join the data to the parcel feature class (keep only matching records).

6) Use field calculator to transfer the new data into the appropriate column in the feature class.



Importing the database into GIS (continued...)

7) Repeat for all individual data columns



8) Remove the joined data (undo Step 5)

Results = Updated Information for...

- Owner Name
- Owner Address
- Premises Location
- Legal Description
- Deed Reference
- Town Code
- Subdiv. Plat Ref.
- Map, Parcel, Lot
- Acreage
- Transfer Date
- Consideration
- Mortgage
- How Conveyed
- Deed Reference
- Year Built
- Structure sq. ft
- Assessed Values
(Land & Improvmts)

Data Fields Not Updated...

- Description of land use (DESCCLU)
- Dwelling description (DESCDWEL)
- # of Apartment Units

This information is in the 2000 character data release, but we're still determining the best way to adjust the import specification file to extract it.

Are the results worth the effort?

How this improves customer service...

- All of the County's GIS platforms now have current, up to date parcel ownership and attribute information.
- This includes:
 - 1) Cecil Maps (public facing website)
 - 2) Vela & CAD (911 operations)
 - 3) Master Map (internal GIS applications)

Having confidence in data is HUGE!

Questions? Comments?

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410-996-5305 (fax)