

When GIS Opportunity Knocks: The Kentucky Schools *Front Door Project*

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“Changes in Latitudes”



Overview

- Background
- The Front Door Project
- The Public Schools Layer
- Improving geocoding/address points
- Future steps
- Acknowledgements

Background

The Front Door Project

- Project Proposal
 - COT came knocking
 - School locations had last been updated by Area Development districts in 2007.
 - Proposal created to define problem and recommended solution
 - biggest hurdle – how do we benefit??
 - Approved data collection 2011
 - Aligned collection with Earth Day in April
 - Easy to follow process – even kids could do it!

The Front Door Project

1. Click on the Draw and Measure button.
2. Click Draw Point
3. Check on the Show Measurements box.
4. Select Decimal Degrees (WGS84) is in the Point Units box.



The Front Door Project

Add a point **CORRESPONDING TO THE MAIN ENTRANCE (FRONT DOOR) TO THE BUILDING** and notice how the geographic coordinates (Latitude,Longitude) are written on the screen.



The Front Door Project

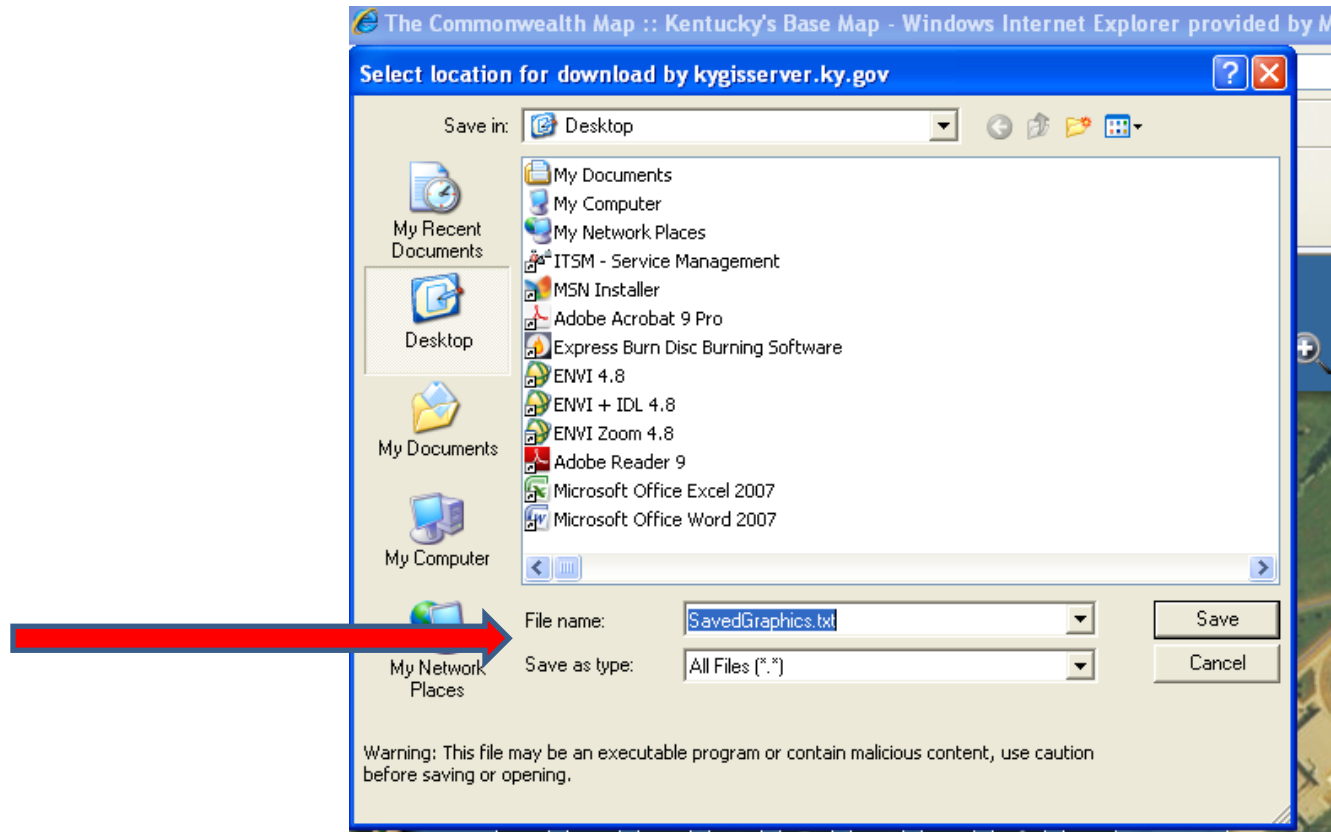
1. Click on the Text button and type the name of the school in the text box.
2. Click on the Save Graphics Layer button.



Front Door Project

Save the coordinates:

- Change the name of the file to: DistrictID_SchoolName.txt



Front Door Project

KDE Data Capture through existing system.

- Oracle System
- Two new codes in “Org_param” table for latitude and longitude

The screenshot shows the Kentucky Department of Education website. At the top, there is a navigation bar with "Kentucky.gov" on the left and "KY Agencies | KY Services" on the right. Below this is a banner with the "EVERY CHILD PROFICIENT & PREPARED FOR SUCCESS" logo and the text "KENTUCKY DEPARTMENT OF EDUCATION". The main content area is titled "School Locations" and includes a "Home" link and a "Logged in as: [SSRINEN1] Logout" indicator. A dropdown menu is set to "Floyd County". Below the dropdown is a table of schools with columns for "School", "Date Verified", and "Verified By". A red arrow points to the "Allen Central High School" link in the table, with the text "click on the school link to report coordinates" next to it. The footer contains "Site Compatibility", "Copyright © 2011 Kentucky Department of Education", and "Privacy | Disclaimer | Contact Us | Help".

School	Date Verified	Verified By
Allen Central High School	-	-
Allen Central Middle School	-	-
Allen Elementary School	-	-
Betsy Layne Elementary School	-	-
Betsy Layne High School	-	-
James A. Duff Elementary School	-	-
James D. Adams Middle School	-	-
John M. Stumbo Elementary School	-	-
May Valley Elementary School	-	-
McDowell Elementary School	-	-
Opportunities Unlimited Alternative Sch	-	-
Prestonsburg Elementary School	-	-
Prestonsburg High School	-	-
South Floyd High School	-	-
South Floyd Middle School	-	-
W.D. Osborne Elementary School	-	-

Front Door Project

KDE data capture through existing system – coordinates are uploaded individually.

Please verify your school information listed below. If the school details are incorrect, contact [KETS Service Desk](#) for corrections.

District	Floyd County
School	Allen Central High School
School Code	175025
Ownership	Public District School
School Type	General program or multi-grade
<u>Classification</u>	A1
Low Grade	9th
High Grade	12th

If the address is missing or incorrect, enter/update the address.

Address Line 1	442 KY Rt 550
Address Line 2	
City	Eastern
State	KY
ZIP	41622

Geographic Coordinates File	C:\Documents and Settings\ssrineni\Desktop\AllenElementa	<input type="button" value="Browse..."/>	<input type="button" value="Upload"/>
Latitude			
Longitude			
Date Verified			
Verified By			

Browse to locate the file on your computer.

After you select the file, click the upload button to submit the file to KDE

Approved by SSRINEN1

The Front Door Project

- Final Data Capture:
 - Latitude/Longitude
 - Date Verified
 - Verified by

The screenshot shows a web form with the following elements:

- A text input field labeled "Geographic Coordinates File" with a "Browse..." button to its right and an "Upload" button further right.
- Below the input field, the coordinates are displayed: "Latitude -84.888289" and "Longitude 38.178193". This area is circled in red.
- Below the coordinates, there are labels for "Date Verified" and "Verified By".
- Under the "Verified By" label, there is a button that says "Approved by SSRINEN1". This button is also circled in red.

Two red dashed arrows with text provide instructions:

- One arrow points from the text "After you upload the file, the coordinates will be displayed next to the lat/long labels" to the coordinate display area.
- Another arrow points from the text "If you agree to the coordinates, click the button to submit to KDE." to the "Approved by SSRINEN1" button.

The Front Door Project

- Data file transferred from KDE to COT periodically as updates are received.
- **SUCCESSFUL PROJECT!**
 - Great Collaboration – KDE and COT/DGI
 - Worked together to create documentation defining how to update coordinates – options for collection.
 - Created database collection tool to collect coordinates @ KDE.

The Front Door Project

- Over 95% of schools participated in 2011.
 - Collected coordinates to front door of each school
 - Communication is key
 - Follow-up and get leadership to push.
 - Used maps to demonstrate those that had/hadn't been updated – *Peer Pressure*
- First year collection schools only
- Second year added district offices
- Annual data collection – aligned with Earth Day each year.

Front Door Project

- Information available on-line @ www.education.ky.gov – Search Front Door Project

The screenshot shows a Microsoft Internet Explorer browser window displaying the Kentucky Department of Education website. The browser's address bar shows the URL: <http://www.education.ky.gov/KDE/Administrative+Resources/Data+and+Research/Data+Requests/Front+Door+Project.htm>. The website header includes the Kentucky Department of Education logo and navigation links. The main content area is titled "Front Door Project" and contains the following text:


Front Door Project
Last Updated on Tuesday, April 17, 2012 at 8:31 AM

Annually, the Kentucky Department of Education collects geographical coordinates from the front door of each public school in Kentucky. Originally, this collection updated the geographical coordinates that had been previously collected by Area Development Districts in 2007. Schools and districts participated in the Front Door Project as an Earth Day activity. This was the first data collection of this type by the department.

[Kentucky's Commonwealth Map](#) now reflects the latest Global Positioning System (GPS) coordinates for Kentucky Public Schools. You can search schools on the Commonwealth Map link to see the mapped coordinates. The Commonwealth Office of Technology shares these coordinates on request to public and private entities.

As a school location changes or new school's open, schools are asked to complete a School Change Request Form located [here](#), and also follow the instructions below to update the GPS coordinates. School location files will be generated at the end of each quarter for Commonwealth Maps as updates are received. Completed School Change Request forms should be sent to lori.davis@education.ky.gov.

As coordinates change, schools can update the coordinates by following the attached instruction document using the Commonwealth Map.

 School Geographic Location_2012

For more information contact:

The Front Door Project

- Using the data...School Report Card

The screenshot shows a web browser window displaying the Kentucky School Report Card website. The browser's address bar shows the URL <http://app1.education.ky.gov/src/Profile.aspx>. The website header features a banner with a red apple, a star, and the text "EVERY CHILD UNBRIDLED LEARNING SUCCESS" and "KENTUCKY SCHOOL REPORT CARD". Below the banner is a navigation menu with links: "View Report Cards", "About Report Card", "Report Card Glossary", "Contact Us", and "FAQ". A "Back To Report Card Search" button is also present. The main content area is divided into sections: "Profile", "Accountability", "Assessment", "Learning Environment", and "Delivery Targets". The "Profile" section is active and displays information for Adair County High School, including its address (526 Indian Drive, Columbia, KY 42728), phone number (270) 384-2751, fax number (270) 384-6900, school year (2011-12), school code (001010), and principal (Mr. Troy Young). Below this, a section titled "Our Current School Council Members" lists Kevin Robertson, Marsha Reddick, Melinda Franklin, Michael Godsey, Sandy Pyles, and Troy Young. The bottom of the page features a footer with copyright information (© 2012 Kentucky Department of Education) and links for "KY Agencies | KY Services", "Privacy | Disclaimer | Contact Us | Help". A red circle highlights an aerial satellite image of the school building, and a large red arrow points to it from the right side of the page.

- Shape
- KDEID
- NAME
- TYPE
- CLASSIFICA
- LOW_GRADE
- HIGH_GRADE
- CONTACT
- XY_SOURCE
- XY_ISSUES
- ATT_SOURCE
- ATT_ISSUES
- COMMENTS
- ADDNAME
- DATEMODIFI
- DATECREATE

Legacy Primary Schools Layer

Table								
PrimarySchools								
FID	Shape *	KDEID	NAME	TYPE	CLASSIFICA	LOW_GRADE	HIGH_GRADE	
539	Point	115100	CHRISTIAN COUNTY ALTERNATIVE SCHOOL	PUBLIC	ALTERNATIVE SCHOOL	6	12	
540	Point	115901	CHRISTIAN COUNTY CAREER TECHNOLOGY CENTER	PUBLIC	HIGH SCHOOL	9	12	
541	Point	115030	CHRISTIAN COUNTY HIGH SCHOOL	PUBLIC	HIGH SCHOOL	9	12	
542	Point	115035	CHRISTIAN COUNTY MIDDLE SCHOOL	PUBLIC	MIDDLE SCHOOL	6	8	
543	Point	135100	CRITTENDEN COUNTY ELEMENTARY SCHOOL	PUBLIC	ELEMENTARY SCHOOL	PS	5	
544	Point	445011	MUHLENBERG COUNTY CAREER ALTERNATIVE HIGH SCHOOL	PUBLIC	ALTERNATIVE SCHOOL	9	12	
545	Point	445035	RENAISSANCE CENTER	PUBLIC	OTHER	7	12	
546	Point	115410	SAINTS PETER AND PAUL ELEMENTARY SCHOOL	PRIVATE	OTHER	PS	8	
547	Point	445012	MUHLENBERG SOUTH ELEMENTARY SCHOOL	PUBLIC	ELEMENTARY SCHOOL	PS	5	
548	Point	515040	CLEARFIELD ELEMENTARY SCHOOL	PUBLIC	ELEMENTARY	K	5	
549	Point	515043	MCBRAYER ELEMENTARY SCHOOL	PUBLIC	ELEMENTARY	5	5	
550	Point		ROWAN COUNTY CHRISTIAN ACADEMY	PRIVATE	OTHER	PS	9	
551	Point	515130	MOREHEAD YOUTH DEVELOPMENT CENTER	OTHER	HIGH SCHOOL	7	12	

CONTACT	XY_SOURCE	XY_ISSUES	ATT_SOURCE	ATT_ISSUES	COMMENTS	ADDNAME	DATEMODIFI	DATECREATE
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	GPS		E911 PT FILE, EDUCATION.K			PEADD	3/30/2007	9/25/2006
PAT LEE	NAIP 2004		SCHOOL SECRETARY, EDU			PEADD	3/30/2007	9/26/2006
DEWAYNE SIMS	FSA IMAGERY		KY DEPARTMENT OF EDUC			GADD	12:00:00 AM	11/1/2006
DEWAYNE SIMS	FSA IMAGERY		KY DEPARTMENT OF EDUC			GADD	12:00:00 AM	11/1/2006

- FID
 - Shape
 - KDEDIST_ID
 - KDEDIST_NM
 - KDESCH_ID
 - KDEID
 - SCHNAME
 - STREETADDR
 - CITY
 - STATE
 - ZIP
 - SCHTYPE
 - CLASSIFICA
 - LOW_GRADE
 - HIGH_GRADE
 - CONTACT
- LATDDWGS84
 - LONDDWGS84
 - XY_SOURCE
 - XY_ISSUES
 - ATT_SOURCE
 - ATT_ISSUES
 - ADDNAME
 - DATEMODIFI
 - DATECREATE
 - COUNTY
 - REGION
 - PIC_URL
 - LAST_UPDT_
 - LAST_UPDT1
 - LAST_UPD_1
 - COMMENTS

KY Public Schools Layer

Table

Kentucky_Public_Schools_09092011


FID	Shape *	KDEDIST_ID	KDEDIST_NM	KDESCH_ID	KDEID	SCHNAME	STREETADDR	CITY	STATE	ZIP	SCHTYPE	CLASSIFICA
0	Point	186	Fulton Independent	018	186018	Fulton Independent School	700 Stephen Beale Dr	Fulton	KY	42041	Public	Elementary/High School Combination
1	Point	185	Fulton County	020	185020	Fulton County Elementary/Middle School	2750 Moscow Ave	Hickman	KY	42050	Public	Elementary School
2	Point	185	Fulton County	030	185030	Fulton County High School	2740 Moscow Ave	Hickman	KY	42050	Public	Four-year High School
3	Point	205	Graves County	010	205010	Cuba Elementary School	92 Cuba School Rd	Mayfield	KY	42066	Public	Elementary School
4	Point	085	Calloway County	045	085045	Southwest Calloway Elementary School	3426 Wiswell Rd	Murray	KY	42071	Public	Elementary School
5	Point	031	Bell County	390	031390	Yellow Creek School Center	4840 W Cumberland Ave	Middlesboro	KY	40965	Public	Elementary School
6	Point	446	Murray Independent	050	446050	Murray High School	501 Doran Rd	Murray	KY	42071	Public	Four-year High School
7	Point	591	Whitley County	060	591060	Boston Elementary School	3291 Hwy 1804	Williamsburg	KY	40769	Public	Elementary School
8	Point	426	Middlesboro Independent	030	426030	West End Primary School	3400 W Cumberland Ave	Middlesboro	KY	40965	Public	Elementary School


LOW_GRADE	HIGH_GRADE	CONTACT	LATDDWGS84	LONDDWGS84	XY_SOURCE	XY_ISSUES	ATT_SOURCE	ATT_ISSUES
Preschool	12th		36.509441	-88.890061	COMMONWEALTH MAP COORDINATES	Geographic coordinates were digitized by Open Door Project participants.	Tracye Fisette	
Preschool	8th		36.567498	-89.156845	COMMONWEALTH MAP COORDINATES	Geographic coordinates were digitized by Open Door Project participants.	Craig Turner	
9th	12th		36.567897	-89.156901	COMMONWEALTH MAP COORDINATES	Geographic coordinates were digitized by Open Door Project participants.	Craig Turner	
Preschool	6th		36.583662	-88.624348	COMMONWEALTH MAP COORDINATES	Geographic coordinates were digitized by Open Door Project participants.	John McMillen	
Entry	5th		36.584794	-88.385095	COMMONWEALTH MAP COORDINATES	Geographic coordinates were digitized by Open Door Project participants.	Susan Carol Taylor	


NAME	DATEMODIFI	DATECREATE	COUNTY	REGION	PIC_URL	LAST_UPDT_	LAST_UPDT1	LAST_UPD_1	COMMENTS
DD	5/4/2011	5/4/2011	FULTON	1	http://applications.education.ky.gov/schoolimages/186018.jpg	9/9/2011	Demetrio Zourarakis	COT-DGI	
DD	4/26/2011	4/26/2011	FULTON	1	http://applications.education.ky.gov/schoolimages/185020.jpg	9/9/2011	Demetrio Zourarakis	COT-DGI	
DD	4/26/2011	4/26/2011	FULTON	1	http://applications.education.ky.gov/schoolimages/185030.jpg	9/9/2011	Demetrio Zourarakis	COT-DGI	
DD	5/31/2011	5/31/2011	GRAVES	1	http://applications.education.ky.gov/schoolimages/205010.jpg	9/9/2011	Demetrio Zourarakis	COT-DGI	
DD	5/3/2011	5/3/2011	CALLOWAY	1	http://applications.education.ky.gov/schoolimages/085045.jpg	9/9/2011	Demetrio Zourarakis	COT-DGI	
DD	11/20/2006	11/20/2006	BELL	6	http://applications.education.ky.gov/schoolimages/031390.jpg	9/2/2011	Demetrio Zourarakis	COT-DGI	Legacy DGI layer information compiled by Kim Anness based on diverse sources and used by KDE as foundation for the current layer


Anchorage Independent Public School





 Early Child Education School


 Elementary School


 Elementary/High School Combination


 Four-year High School


 Incomplete Regular High School


 Junior High School

 Junior-Senior combined or Undivided HS

 Middle or Upper Elementary Schools

 Programs in College

 Senior High School

 Voc-Ed, Ext Center and Health

Middletown Elementary School



Eastern High School



Crosby Middle School



Hite Elementary School



Accessing the Public Schools Layer

1. *Kentucky Geoportal:*

<http://kygisserver.ky.gov/geoportal/catalog/main/home.page>

2. *ArcGIS Server service:*

http://kygisserver.ky.gov/ArcGIS/rest/services/WGS84WM_Services/Ky_Schools_WGS84WM/MapServer

...ArcGIS Desktop

Identify from: <Top-most layer>

Schools
Flemingsburg Elementary School

Location: -9,321,823.732 4,639,739.610 Meters

Field	Value
ADDNAME	BTADD
ATT_ISSUES	
ATT_SOURCE	Bonnie L Deatley
CITY	Flemingsburg
CLASSIFICA	Elementary School
COMMENTS	
CONTACT	
County	Fleming
DATECREATE	4/19/2011
DATEMODIFI	4/19/2011
HIGH_GRADE	6th
KDEDIST_ID	171
KDEDIST_NM	Fleming County
KDEID	171040
KDESCH_ID	040
LAST_UPD_1	COT-DGI
LAST_UPDT1	Demetrio Zourarakis
LAST_UPDT_	9/9/2011
LATDDWGS84	38.425702
LONDDWGS84	-83.73938
LOW_GRADE	Preschool
NAME	Flemingsburg Elementary School
OBJECTID	1124
PIC_URL	http://applications.education.ky.gov/schoolimages/171040.jpg
REGION	7
Shape	Point
STATE	KY
STREETADDR	245 W Water St
TYPE	Public
XY_ISSUES	Geographic coordinates were digitized by Open Door Project participants.
XY_SOURCE	COMMONWEALTH MAP COORDINATES
ZIP	41041

Identified 1 feature



Accuracy Assessment

1. Photoverification – spot check/grass-roots

2. Reverse QA/QC: IBM Geolocator

IBM GeoLocator 2.0.1

(acquired from Vality/Ascential software)

Tom Tom reference database

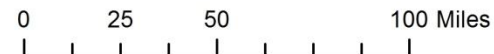
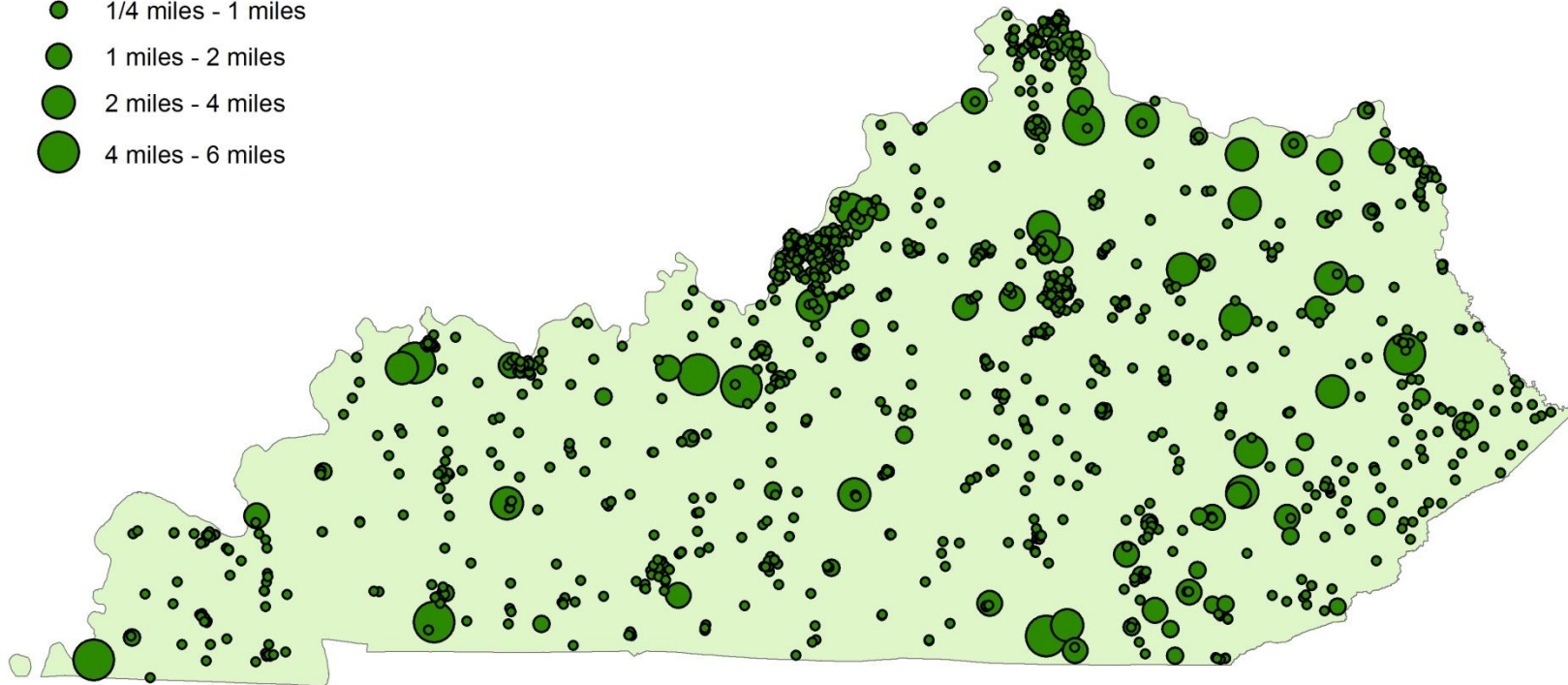
2010-2012 Geocoding Shift

1374 locations - 92% <= 100 feet shift



Miles

- 0 - 1/4 mile
- 1/4 miles - 1 miles
- 1 miles - 2 miles
- 2 miles - 4 miles
- 4 miles - 6 miles



IBM GeoLocator Inter-version Consistency Analysis

MatchCode1	M = matched U = unmatched X = matched, but house # not in range or no input house number Z = matched only the Zip Code - returned X/Y centroids
MatchCode2	S = single street I = intersection V = single street vicinity record
MatchCode3	S = single match M = multiple matches
MatchCode4	L = left side of segment R = right blank = indeterminate

			2012					TOTAL
			MATCHED		ZIPCODE	HNIR/NIHN	UNMATCHED	
			SINGLE	MULTIPLE		SINGLE		
2010	MATCHED	MULTIPLE SINGLE	995	128		8	1131	
		MULTIPLE MULTIPLE	2	35		1	38	
	ZIPCODE		3		108	2	113	
	HNIR/NIHN	SINGLE	5	1	1	85	92	
	UNMATCHED						1	
TOTAL			1005	164	109	96	1	1375

Geocoded Addresses vs. Front Door

- 361 geocoded locations near some **other** school
- 966 geocoded locations in the vicinity

<i>Geocoding Shift</i>	<i>Frequency</i>
0 – 1/100 mile	6
1/100 – 1/10 mile	474
1/10 – 1/4 mile	272
1/4 – 1/2 mile	95
1/2– 1 mile	43
Over 1 mile	76

Future steps...

Acknowledgments

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- *Eric Dodson (OAD-COT)*
- *Kim Anness (COT-DGI)*
- *Kent Anness (COT-DGI)*