AIMS Coordinators Meeting Minutes
Hosted by Overland Park
EOC Command Center
Overland Park Fire training center
May 18th, 2006

Announcements

Next meeting
Hosted by City of Olathe

Overland Park's Emergency Operations Center – Major Tim Lynch

Major Lynch gave a brief history and overview of the EOC facility. The command and control center hosts four departments; Police, Fire, ITS, and Public Works. Police dispatch and traffic services dispatch and relay information from this facility to units located in the field. In addition ITS has a dedicated storage backup so the City can function in the event that operations at City hall are disabled. The main control room has eleven projection screens that host a variety of information, all aimed at making decisions easier and quicker. The WebEOC is one of the tools that benefits Johnson County by allowing access via the web to emergency management information.

GIS in the EOC – Doug Johnson and Steve Brown

In the EOC there are two positions for GIS staff. In addition to the GIS staff, a building/planner and crime analyst have work stations within the EOC. Doug pointed out that the main need for GIS mapping support is at the very beginning of the event. Emergency responders want immediate maps of the area. After the initial maps have been produced, there is some need for updating the maps, but the bulk of the work must be done at the start. In a simulated event it was determined that receiving so many various map request created chaos and confusion. It would be much easier if there was one person handling all of the map requests and that person would be in charge of filtering the requests to appropriate personnel.

Steve Brown looked at how data was transferred and communicated to the various departments. One of the major problems was that everyone used different file servers, so if GIS staff created a map and placed on their server it was possible that the fire or police department would not have access to the map. He created a script which produces a directory that everyone has access to with a unified file naming system.

Several people suggested some kind of mutual aid agreement in which GIS staff from the AIMS coordinator group would be available to assist in extended emergency situations. Steve Gay (MARC) also mentioned that they were looking at an ARCIMS service that would extend the functionality of MapTec. This would allow anyone with web access to see images and maps of the crisis area.

Population estimates using GIS – Mike Nelson and Tim Fitzgibbons

Why Estimate Population?

• The Census Bureau publishes a July 1 population estimate for incorporated cities annually.
Unfortunately, this number is published 8 to 10 months after July 1.
• The population estimate is reported in the Annual Development Report, which lists standard
demographic information about Overland Park by various levels of geography.
• Overland Park is required to adjust ward boundaries every four years and has the option to adjust the
wards every 2 years to equalize population among the wards. A population estimate enables us to use the
most recent information to make a more informative decision on when to redistrict and provides the
redistricting process with a recent population estimate.

2000 and Before

Using the citywide property tiled coverages, label points for residential properties within OP were joined into a
single coverage and duplicate records were removed using aml processes.
Because the property information is "locked" and "certified" as of June 15th, we count Certificate of Occupancy
permits between June 15th and July 1st. The CO's are pulled out of tidemark, geocoded, merged with the
citywide property population data, and categorized by residential land use type (see table below).
The number of units by residential land use type were summarized by precinct, resulting in a table. Vacancy
rate and person per household factors were estimated from prior Census and other demographic analyses.
Population by precinct was estimated by multiplying the number of units in a precinct by the vacancy rate and
persons per household. The result was a table listing the precinct, number of units, and population. These
numbers were then entered into the precinct polygon coverage and summarized by ward.
Residential
Land Use

2001

Counting population by a fixed geography was limiting. Therefore, we applied vacancy rate and person per
household factors to each parcel label point. By spatially joining the parcel point coverage to the precinct
coverage, population could then be summarized by precinct and ward. Applying the population factors to
individual label points allowed us to create population estimates for varying levels of geography.
2000 Census information by census tract became available. Items of interest were persons per household and
vacancy rate for both owner-occupied and renter-occupied dwellings. All points were given a census tract

attribute according to which tract it is within. The census tract information was then joined to the parcel point
dataset in order to calculate the population using the vacancy rate and persons per household factors from the
census tract.
The next spring, the Census Bureau released its July 1 population estimate. Our population estimate was
155,600 and the Census estimated 154,343 (difference of 0.8% resulting in very happy planners).
2002 – 162,592 (OP) – 158,542 (census) – 2.49% difference
2003 – 163,319 (OP) – 160,564 (census) – 1.67% difference
2004 – 166,751 (OP) – 162,728 (census) – 2.41% difference
2005 – 166,917 (OP) – ???????? Not released

2002 - 2005

All procedures remain the same other than dealing with the new parcel model and the vertical polygons. Census
block and block-group numbers became available, but were suspect; we decided to stick with tract-level
information. Because the 2000 Census numbers were over 3 years old, vacancy rates and persons per household
factors are adjusted annually.

Gathering Data

Use County parcel data acquired after June 15th
Select parcels within the OP city limits
Use Certificates of Occupancy (CO's) issued by the city, by address, from June 15th to June 30th

Preparing Data

For Parcel Data:

Get XY of the centroid of each parcel into table
Use Windows Explorer to copy the parcel.dbf to a new dbf table
Map the XY's to get a point shapefile
Delete unwanted fields
"Select by Attributes" the **residential** Land Use codes
Remove duplicate GEOPROP_IDs:
Run a frequency on Geoprop_id field
Join point shapefile to frequency table
Delete unwanted fields
Export to a new shapefile

For CO's:

Report file gets created from Tidemark (bldg permit tracking software)
Export file to Excel, delete unwanted fields, rows, reformat and export to DBF
Map the XY's to get a point shapefile
Compare CO shapefile to the parcel data shapefile, check for duplicates.
Merge with the parcel data shapefile
Calculate Land Use and Geoprop_ID fields for the CO records
Calculate Dwellunits = 1 for SNGL type.

For the Merged/Population shapefile:
Investigate Land Use = (115, 1151, 123, 124, 199, 534, 673, 659)
Use Development layer and Address Pts. layer for help with unit counts
Add fields that will be used for ADR and population equation
Join to census tracts shapefile and assign tract number for all corresponding points
Export to new shapefile, remove any unwanted fields
Summarize on Tract field to get the census variables used for the estimate
Join summarized table to population shapefile and calculate the variables over
Remove the join
Calculate the ADR_TYPE field based on land use

Rough-o-meters and GIS – Mike Ross and Dave Fullerton

Overland Park's Public Works department has been using PAVER for more than 20 years. Originally the Army Corp of engineers used a rating system to analyze the pavement condition on military bases. Overland Park applied this same concept to their roads. At some point during the life of a road, it reaches a point at which it must be rehabilitated. By measuring the PCI of a road it's possible to recondition or replace the roads before they reach a point of no return. One of the struggles with mapping the condition of roads is that a paver section likely does not align with a street centerline segment. The reason for using a rough-o-meter is the speculation that roughness and condition are related. The device is attached to the rear axle of a vehicle and once the speed reaches at least 15mph then it begins recording data.

Dave Fullerton was tasked with disseminating the various files of rough-o-meter data. Again one of the problems was that the rough-o-meter data segment didn't necessarily match the paver section or the street segment. The driver on the vehicle just drove until he hit a traffic light and had to stop. As soon as his speed dropped below 15mph then the rough-o-meter quits collecting data. Dave created a python script that created a route for each segment. He then used dynamic segmentation to join the rough-o-meter data to each place along the line. By choosing the nearest point within the paver section he could join the two attributes. They are currently working with an attached GPS unit that will relate a xy point to every rough-o-meter point.