Lessons Learned with Parcel Data Processing

INRCOG Case Study

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- Request data
- Explore data and determine fields needed in model
- Cleanup
- Determine non-residential activity
- Determine households

Request Data

MPO Travel Demand Model Update Data Needs List

- 1. Planned projects
 - a. A shapefile and/or list of planned project amenities including:
 - i. Highway
 - ii. Bicycle/Pedestrian (new bike/ped overpass)
 - iii. Transit routes
- 2. Intersection Control
 - a. Control type (link and node field metadata provided on following page for reference)
- 3. Parcel (ISMS land use data needs provided later in this document for reference)
 - a. Spatial data (.SHP format) including addresses by parcel
 - b. Tax assessment information for residential, commercial, industrial (if available, may be combined with commercial), and exempt uses by parcel
 - c. Land use attribute data by parcel provided in units of households for residential land uses and building square footage (KSF/1000 ft²) for non-residential land uses
 - i. Need this data within the spatial portion of the parcels or available via join

4 Collogo/University

Black Hawk County Parcel Data Received

File Received	Fields
2017-01-16- BHC_parcel_number.shp (points)	OBJECTID, PIN, PINTEXT, TYPE, Point_Type, Label_Clas, Acreage, Txt_Angle, CONDOID
2017-01-16-parcel_poly.shp (polygons)	OID_, PIN, Shape_area, Shape_len
Current Deedholder and property address ag acres.xlsx	PARCEL, DEEDH1, DEEDH2, CONTRACTH1, CONTRACTH2, ACRES, HOUSE_NO, HOUSE_HIGHEST, HOUSE_HALF, HOUSE_DIR, STREET_NAME, STREET_SUFFIX, APTNO, HOUSE2_NO, HOUSE2_NO_HIGH, HOUSE2_HALF, HOUSE2_DIR, STREET_NAME_2, STREET_SUFFIX_2, APTNO2, CITY, STATE
Priced as Commercial.xlsx	gis_num, comdescr, comyearbuilt, grossbldgarea, combasearea, occtablecode, motelunits
Priced as Residential.xlsx	gis_num, geninfo_occ, mn_yrblt, mn_area, mn_tla

Explore Data and Determine Fields Needed in Model

- Figure out...
 - difference between two shapefiles provided
 - how files should join
 - and understand ISMS parcel-based process
 - if have or can obtain all required inputs
- Explore data
- Aerial photos
- Assessor's website: <u>http://www2.co.black-hawk.ia.us/website/bhmap/viewer.htm</u>
- Ask questions

Explore Data and Determine Fields Needed in Model – ISMS Required Fields

CATEGORY OF INFO	ISMS FIELDS	Description
ID	SEQID, PFILE, PID, PIN	Unique ID numbers
LOCATIONAL	ADDNUM, ADDNAME, ADDCITY, ADDZIP, X, Y	Address information and parcel centroid coordinates
LAND USE	CLASSCODE, LUC1, LUNAME	General and more specific land use of a parcel
QUANTITY	ACRES, HU1, AMT1	Amount of activity within a parcel
BASE OR FUTURE	YEAR1, YEAR2, YEAR3, LUC2, LUC3, HU2, HU3, AMT2, AMT3, OCC2, OCC3	Fields used to determine whether and how many trips parcel should generate in a given model year
OTHER	DEEDHOLDER, OCCODE, OCC1, TAZ	Deedholder information, Occupancy information, and TAZ parcel nests within

Red = Critical information that couldn't be easily manually or automatically determined without parcel data

Explore Data and Determine Fields Needed in Model



Cleanup

- Ensure parcels have LUNAME
 - Assigned LUNAME to exempt parcels
 - Parks, ROW, utilities, cemetery
 - Reviewed w/ aerial photo or assessors website
- Assigned ISMS LUC1 code
 - Created crosswalk table
 - Vague codes required additional review
 - "Clubhouse" could be Golf Course, Public Assembly, Recreational Use
- Anomalies in County Coding
 - BHC Jail coded as "Fraternity"
 - Time consuming filtering/screening process
- Other edits
 - Add acres/KSF
 - Convert **ft**² to **KSF**
 - Split/merge weird parcels
 - A city park had 40+ separate parcels flood buyouts

Crosswalk Table for Black Hawk County Codes

ISMS Land Use Codes

APPENDIX A: PARCEL LAND USE CODES

Table 1: Land Use Code Brief Description

CODE	LABEL	DESCRIPTION	PREDICTIVE VARIABLE	
10	RES	Residential	Housing Units	
11	SFD	Single-Family Detached	Housing Units	
19	МНР	Mobile Home Park	Housing Units	
20	SFA	Single Family Attached	Housing Units	
21	APT	Apartment Building	Housing Units	
22	DOR	Dormitory	Students	
23	STUD	Student Housing	Housing Units	
24	RET	Retirement Community	Housing Units	
25	SNF	Skilled Nursing Facility/Assisted Living	KSF	
26	нот	Hotel/Motel	KSF	
27	GQ	Group Quarters/Residence Hotel	Housing Units	
28	FRAT	Fraternity/Sorority	Students	
30	MFG	Manufacturing	KSF	
31	IPK	Industrial Park/Light Industry	KSF	
32	WAR	Warehousing	KSF	

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Determine Households

- 1. Aggregate residential points from parcel point file to parcel polygon file (HU1 field)
- Add additional units for single-family to multi-family conversions (e.g., geninfo_occ field description "Five-Family Conversion" should have 5 total units in the parcel polygon layer HU1 field
- 3. Add commercial multifamily households for appropriate land uses (e.g., for land use "Apartments" add motelunits field to HU1 field)
- 4. Manual count mobile homes and add to HU1 field

Determine Households - Check

City	Parcel 2014	Census 2014 (5-yr est. – DP05)
Waterloo	31,558	31,266 (+/-399)
Cedar Falls	15,471	15,229 (+/442)
Hudson	913	970 (+/-75)
Evansdale	2,045	1,921 (+/-192)
Elk Run Heights	450	494 (+/-69)
Raymond	330	325 (+/-43)
Gilbertville	348	317 (+/-56)

Model	Source	Households
2014 Update	2014 Parcels	52,883
2010 Current	2010 Census Blocks	51,961

Lessons Learned with Parcel Data Processing

INRCOG Case Study

November 14, 2017



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