

Appendix F:
Addendum to Process Narrative: Creating Version 2.0

Version 2 of the 2010 CMAP Land Use Inventory was created in conjunction with the 2013 Land Use Update to correct errors identified in the course of working on the 2013 Update. After posting corrections at the parcel level, a new “dissolved” version was created for public release. Both of these processes are described below.

I. Identifying and Correcting Parcel-Level Errors

Examples of errors in the 2010 Inventory that were addressed:

- Systematic miscoding Confusion over coding of certain land use types caused those land uses to be inconsistently classified. The biggest example is the handling of stalled residential subdivisions, where a subdivision was platted and work begun years earlier but has obviously sat idle since the collapse of the housing market in 2008. Initially these were coded as Residential Construction, but later instructions recommended that they be coded Residential Vacant unless there was evidence of current construction activity. This version re-classifies several thousand “under construction” residential parcels as “residential vacant” due to the lack of any progress on those sites as of 2013. To a lesser extent some Commercial and Industrial properties were also changed from construction to vacant as well.
- General coding errors Staff working on coding parcels for the 2013 Update (who use the 2010 layer as a reference) spotted and flagged erroneous 2010 parcels.
- Topological errors For the most part, the all-parcel version ignores topological errors because they are too numerous and are for the most part sliver overlaps found in the original parcel GIS files forwarded by the counties (there are also overlaps between counties, some fairly egregious, which are also not corrected in the all-parcel set). Certain topological errors were corrected for v.2 where there was serious overlap within a county, either due to incomplete processing of “stack” parcels for Cook County, or a serious overlap of two distinct parcels with differing land uses.

A 2010 “error point” feature class was created to handle the first two issues. These were created at the individual county level and merged afterwards. Many of these points were manually entered (with the help of an error-point tool), where the user drops a point in the parcel, gives the correct land use, and (usually) an explanation of the error. Two large automated processes augmented this set:

- **Lake County Multi-Family:** Updated (2013) Lake County Assessor data identified a large number of parcels as “Multi-Family Residential” which were classed as “Residential Improved” in 2010 (over 2,500 parcels). In the 2010 Inventory, many of these parcels received a Single-Family Detached classification due to the absence of supplementary data that would identify the buildings as multi-family. On closer inspection, most of these buildings fell into two categories: older homes split up into multiple units, and duplexes. Not included in this group are larger apartment buildings, which are classed as Commercial by the Assessor. The corrective action was to select all parcels with a 2013 Multi-Family designation which were coded 1111 Single-Family Detached in 2010, and assign the 1130 Multi-Family code. Parcels coded 1112 Single-Family Attached remain unchanged (obvious townhomes and symmetrical duplexes). While this resulted in many two-unit “multi-family” dwellings which might be better described as “attached” due to the presence of a separate entry for each unit, having these coded as multi-

family is less-misleading than coding them single-family detached. This is also consistent with how two-flats in older Cook County neighborhoods were handled.

- Also, parcels coded vacant (4100-series) in 2013 but were coded 4200-series in 2010 were appended.

One other source for corrections was a separate point feature class to which was created for CMAP staff to suggest changes based on personal knowledge, as well as for LUI staff to make notes for corrections that are more complex than simply changing the land use code.

Applying corrections from the Error Point feature class involved a simple point-in-polygon spatial join to associate the corrected information with each parcel's ID (the CO_PIN field) and erroneous land use code. While changing the land use codes was fairly simple, there are several combinations of changes which required follow-up to ensure that associated attributes were consistent with the new coding. For example, if a recreational space which was coded as RES_COMMON in 2010 but later discovered to be a village park, not only would the code change from 1151 to 3100, but a value is now needed in the OS_OWNCODE field. All V1-to-V2 combinations were assessed for impacts to the RES_UNITS, HAS_RES_EST, OS_OWNCODE, FAC_NAME, PLATTED and MODIFIER fields.

Below is a summary table of changes in acreage at the parcel level:

LU Code	Land Use	v1 - v2 change: parcel count	v1 - v2 change: acres
1111	RES_SF_DETACHED	-2,426	-277
1112	RES_SF_ATTACHED	120	266
1130	RES_MF	2,160	240
1140	RES_MOBILE	-3	-1
1151	RES_COMMON	52	2
	<i>Total Residential</i>	<i>-97</i>	<i>230</i>

1211	COM_MALL	-11	-143
1212	COM_REGIONAL	11	164
1214	COM_BIGBOX	4	76
1215	COM_URBMIX	-199	-222
1216	COM_URBMIXwRES	49	36
1220	COM_OFFICE	55	102
1240	COM_CULT_ENT	18	108
1250	COM_HOTEL	-2	-9
	<i>Total Commercial</i>	<i>-75</i>	<i>111</i>

1310	INST_MEDICAL	-13	-23
1321	INST_EDU_K12	-2	-190
1322	INST_EDU_HIGHER	2	1
1330	INST_GOV'T	-10	-18
1340	INST_PRISON	0	0

LU Code	Land Use	v1 - v2 change: parcel count	v1 - v2 change: acres
1350	INST_RELIGIOUS	-25	-61
1360	INST_CEMETERY	1	2
1370	INST_OTHER	30	436
1380	INST_NATLAB	0	0
	<i>Total Institutional</i>	-17	147

1410	IND_MINERAL	-8	-117
1420	IND_GENERAL	-42	-55
1431	IND_MANUF_100K	-23	-90
1432	IND_WAREH_100K	3	14
1433	IND_FLEX_100K	0	34
1450	IND_STORAGE	8	3
	<i>Total Industrial</i>	-62	-210

1511	TCU_ROW_RAIL	20	14
1512	TCU_ROW_ROAD	-8	-37
1520	TCU_OTH_LINEAR	4	49
1530	TCU_AIR	0	-14
1540	TCU_PARKING	4	0
1550	TCU_COMM	6	37
1561	TCU_ROW_UTIL	-4	-2
1562	TCU_WWTP	4	26
1563	TCU_LANDFILL	6	574
1564	TCU_OTH_UTIL	0	-469
1565	TCU_STORMWATER	-1	21
1570	TCU_INTERMODAL	0	0
	<i>Total Trans/Comm/Util</i>	31	199

2000	AG	278	-603
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3100	OS_REC	29	3
3200	OS_GOLF	0	50
3300	OS_CONS	-57	-2
3400	OS_PRIVATE	2	2
3500	OS_TRAIL	-8	-37
	<i>Total Open Space</i>	-34	17

4110	VACANT_RES	7,815	2,684
4120	VACANT_COM	266	585
4130	VACANT_IND	61	54

LU Code	Land Use	v1 - v2 change: parcel count	v1 - v2 change: acres
4140	VACANT_OTHER	87	239
	<i>Total Vacant</i>	8,229	3,562
4210	CONST_RES	-7,937	-2,713
4220	CONST_COM	-198	-537
4230	CONST_IND	-33	-84
4240	CONST_OTHER	-111	-154
	<i>Total Construction</i>	-8,279	-3,488
5000	WATER	0	28
9999	UNCODEABLE	-1	-7
	<i>Grand Total</i>	-27	-13

II. Generating a New Dissolved Version for Public Release

Final steps in the creation of this public release version include:

1. Developing categorized estimates of residential density (units/acre). This was done by counting the estimated number of residential units (as reported in the RES_UNITS field) for all parcels coded **1111 Residential, Single-Family Detached** within each grouping of parcel blocks (PIN numbers common to the first seven digits). This figure was divided by the total size (in acres) of these parcels to calculate density. These values were then coded to ranges "A" through "E." See metadata for further information. NOTE: while these codes were provided in the Version 1 release, they are not included in Version 2. This is because the estimates were not consistently reliable and could lead to faulty interpretations of land use conditions. The sole function of this step for Version 2 is to distinguish between residential areas of different densities, without attempting to quantify them.
2. Parcels were dissolved on common land uses within PLS (PIN-4 common) sections. This involved creating a new field that concatenated the Land Use, Density Class, PIN-4, Facility Name, Open Space Management, Platted and Modifier fields. Dissolves were based on this field, with multi-part polygons not allowed.
3. All county-associated attribute information was removed from the attribute table, with the exception of the first four digits of the PIN (township and section number).
4. "Gap" areas (parcel-less rights-of-way) were carried over from Version 1 (see *Appendix E, Land Use Inventory Gap Assignment* from the original documentation for details of this layer) and loaded into the dissolved parcels feature class. This was followed by creating a topology that would flag all gaps and overlaps within the full Dissolved + Gap feature class. While gap/overlap errors were numerous, they consisted primarily of slivers and other "nuisance" features. Topological errors were converted into polygon features and then merged with larger, adjacent

features using the Eliminate function in ArcGIS (polygons were merged with the neighboring poly with the longest shared edge).

5. Several hundred “orphan” polygons, or remnants of multi-part parcels that were disassociated from their parent parcel during the dissolve process, were removed from this feature class using the Eliminate function. The threshold for elimination was 500 square feet; all parcels below that size were subsumed into the adjacent polygon with the longest shared edge.