Land Use 2015 Polygons
File Geodatabase Feature Class

Tags
Land Use Survey, Land Use Inventory, Land Use, 2015 Land Use, Dane County Land Use

SUMMARY
Less than parcel based land use inventory for Dane County Wisconsin for the year 2015, This dataset was developed for site specific and regional planning including land use, transportation and environmental resource applications. Parcel boundaries are reflective off April 1st 2015 while agricultural, specifically crop /field delineations and identifications are reflective of June-August 2015.

DESCRIPTION
2015 Land Use Inventory Procedure
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Phase 1 –Basic setup
*Review previous pro/cons of land uses, discuss with planners (primary users of data) their wishes for the dataset

Phase 2 –Data Collection
*Save April 1st 2015 parcel dataset and other datasets that are routinely updated but might yield some assistance in identification
*Finalize land use codes and make comparable (cross-walk table) to previous land uses. Use the same codes as the 2010 inventory which includes crop type.

Phase 3 –Data Creation
*Assign land use codes to blank land use inventory polygons based on field data collected, aerial imagery, employment data, previous land uses, zoning, owner name, Google street view, Bing oblique imagery and other sources as available
*Integrate employer names (Info USA dataset from MAMPO) into the dataset
*Add information about the name of the place (place description) to the polygon/s where possible

Phase 4 –Quality Control
*Check for land use codes of 0, <null>, or codes not in the master list. 9999 was used to mark a site that needed further review
*Run topology looking for overlaps and gaps. Specifically targeting the condominiums since they can report higher acreage amount because of stacking.
*Dissolve polygons that have the same parcel number, land use code, and place description. This process would help shrink the file size and combine many of the unwanted slivers along water or rights of way.
*Add descriptors to the dataset for each LUCODE, rather than the usage of a separate lookup table

Phase 5 –Publication
*Publish dataset to DciMap, DCView, DCView 10 and a separate ArcGIS Online webviewer.
*Create land use acreage breakdowns for individual communities
*Publish a short document on the numbers, procedure and applicability of the dataset

FURTHER PHASE BREAKDOWN
Phase 1 –Basic setup

In coordination between the Capital Area Regional Planning Commission (CARPC) and Dane County Planning and Development (DCPD) with financial assistance from DCPD an inventory to include agricultural crop types for Dane County was started.

Staff from DCPD and CARPC worked collaboratively to identify the need, identify the possibilities, identify the issues, identify the limitations from previous land use inventories and coordinate a plan of attack to generate an inventory that matched the previous land use inventory from 2010 while making the data useful for staff and general public. Because of the detail of data from 2010 and the availability of a 2015 satellite image, it was determined that a complete agricultural site visit to each farm and farm field was not to be done.

Phase 2 –Data Collection

Phase 2 began with collecting an April 2015 parcel dataset from the tax parcels. We also collected a 2015 FSA/NAIP aerial image which was flown in the summer and provided leaf on and farm fields in production. We also used an employment dataset for the zip codes that intersect Dane County from Info USA that the Madison Area Metropolitan Planning Organization purchased.

Phase 3 –Data Creation

Phase 3 is by far the most extensive and exhausting phase of this project. It requires the most attention to detail and the most consistency.

Land use analysts/staff used an ArcMap session to select polygons and insert land use codes based on aerial imagery interpretation, field data if available, owner name, previous land use datasets, zoning, improvement values, address, neighboring land uses and other sources as necessary. The aerial imagery will be the overwhelming decider.

If a land use cannot be determined within a reasonable amount of time a combination of the following might be necessary to correctly determine the land use: site visit, contact with municipality clerk, contact with county zoning inspector, contact with county planner, contact with municipality planner, contact with municipality building inspector.

For the purposes of the agricultural land determination (type and spatial extent) we are to use the 2015 FSA/NAIP imagery from the summer 2015. This will afford us the opportunity to see the crops and fields in full bloom and to assist in crop type determination. For all other areas the usage of other 2015 imagery is authorized to assign a land use code. This includes black and white 2015 (March/April Fly Dane) and color 2015 (March/April Fly Dane). Care should be taken when using any other imagery source as timing and spatial location is likely to change (Bing Maps, Google Earth, Google Maps, Yahoo Maps).

When known a "Place Description" will be added to the polygon/s to indicate what the name of the feature is. For example "Lost Hill Cemetery", "Target", "Mount Horeb Fire Department Bldg #1", "Sweet Pea's Organic Dairy Farm", "Lake Maunesha". Adding this information could lend a more accurate description of the land when needed in future years.

When a road right of way crosses over a river, the land use for that portion that is bridge will be road right of way.

When a road right of way crosses over a railroad right of way, the land use for that portion will be road right of way.

When a railroad right of way crosses a water feature, the land use for that portion will be railroad right of way.

Water features will be displayed as the primary land use for all other occurrences of water.

If water can be seen from an aerial photograph then water is digitized (unless it is a pool, manure pit or less than a tenth of an acre in size) to match the boundaries of the water feature. If a creek bed is dry, or an intermittent stream does not have water in it, then the likely code to use is that of Other Open Land or 9300.

Woodlands are coded as a land use. For all instances of wooded areas, greater than 80% tree canopy cover on the FSA/NAIP image and 2 or more acres in contiguous size and more than 2 trees wide at its narrowest point use the code 9200. Often times it is necessary to include portions of adjoining areas into a woodland. For example a rural

subdivision might abut a wooded area and the subdivision lots might be large enough to digitize a portion of it as woods. There may also be occurrences of large rural lots (5+ acres) that are predominantly wooded with a small single family home on it. In that type of situation the home and driveway are coded as 1110 while the remainder of the lot is coded as 9200. There may also be occurrences of exurban type areas that have connective woods on them while the predominant land use is single family. In those cases select the single family lot (generally these are 1 acre or less) and code the entire polygon 1110. Cut the polygon along the woodland boundary and code the wooded area with a secondary land use code as 9200.

For areas that are platted but not yet built upon take special care. For road right of way that is platted but not yet built, code that as 4501. For subdivision lots that are not yet built upon use the code 9100. Often times these areas are still being actively farmed and it may be necessary to cut the polygons and assign a secondary land use code to reflect the type of crops being grown there. For example a rural subdivision or CSM lot might have a primary land use code of 9100 but a secondary land use code of 8120 because the farmer had planted corn. There are also likely to be instances where the subdivision lot would be wooded and therefore it's secondary land use code would be 9200.

The 2015 land use inventory dataset began as a combination/union of the following: tax parcel polygons from April 1st 2015 (no polygon was digitized for ROW), hydrography polygons, a 10 foot buffer of hydrography polylines, municipalities, and 2010 land use inventory. The 2010 land use inventory was included to bring forward place names and provide a base for determining land uses. Generally speaking a single family home in 2010 will be a single family home in 2015 and having that code as a quick reference would expedite the coding process. Also including the 2010 land use inventory gave us the opportunity to use the 2010 crop boundaries if those boundaries did not change in 2015.

Because the base polygon dataset is a combination of datasets often times there are slivers/small polygons of water features within and/or outside of a water feature. In these areas use the underlying aerial imagery to assist in water delineation.

Farms are digitized as follows: the farm residence and it's portion of the driveway and adjoining lands (swing set, garage, front yard etc..) are coded as 8110, the farm buildings are coded with the appropriate code (8119, 8141, 8142 etc..), any pasture lands that adjoin the farm buildings are coded as 8148.

Often times there will be single family homes with a detached barn and pasture area for horses. In that case code the pasture land as 8148 and the buildings and land around it associated with the residence as 1110 with a secondary land use of 8147. Horses alone do not constitute a farm unless the buildings, pasture and associated lands are greater than 10 acres and it appears that there are more than 5 horses.

When coding it is recommended that you work on a municipality. A definition query limiting the polygons to just that municipality can be used. When the town is complete it is recommended that you open the attribute table and sort ascending by LUCODE. This will place the null or 0 values at the top and help to zoom or pan to them easily. Once all the null or 0's are filled in with a correct LUCODE within the municipality the definition query can be changed and the municipality is ready for review.

Phase 4 – Quality Control

During phase 4 staff worked towards identifying and correcting areas within the dataset that were missed, omitted, miscoded, shifted, out of place etc… This often took the form of checking for land use codes of 0 or <null>. Also drawing a municipality at a time with a set symbology and visually looking for clues of misidentification (an entire section of water, square water features, large single family polygons surrounded by agriculture, commercial lands inside a field of corn etc..).

Staff also worked at identifying and eliminating overlapping polygons (especially condominiums) as a tally of acreage for these land uses would be reported erroneously. Topology was run to identify overlapping polygons. These were merged into one polygon.

Topology was run to identify large holes in the dataset (it happened a few times where the analyst would accidentally delete the polygon or tax parcels were missing).

Where possible staff would merge polygons that have the same parcel number, land use code, and place description. The intent of this step is to eliminate the large number of slivers and speed up the drawing process.

Also during this phase staff populated the columns of GENERALIZED LANDUSE, CATEGORY, SUBCATEGORY, DESCRIPTION PREVIOUS SERIES CODE, CITY OF MADISON CODE and DEVELOPED. This is based on the a land use table.

Phase 5 –Publication

Phase 5 is where the data is converted to an SDE feature class and published to the Dane County Enterprise Data Repository (EDR) where it is accessible to staff and available for purchase. A layer file was created to be drawn using the same symbology as previous land uses. An agricultural specific layer file was created to visualize the crop diversity, all non-agricultural LUCODEs were drawn with a dull, pale grey color.

The intent is to gain feedback from staff about usage, limitations etc... from this land use and incorporate these into land uses done on a 5 year increment, or whenever possible. A detailed agricultural land use is only possible when a summer aerial photograph can be taken, the spring flight does not capture the crop growth in the fields.

Once the Dane County portion was completed staff was asked to complete further land use for the immediate area surrounding Dane County as well as the remaining portion of the Yahara River Watershed. Tax parcel data was downloaded from the state cartographers officer website. A statewide NAIP image was used to assist in determining crop type. Since there are differences in how tax parcels are mapped in the surrounding counties, specifically road right of way, staff had to correct a roads polyline dataset, then buffer that dataset based on average road right of way of type of road, then copy that dataset into the master dataset and run topology. This would introduce road right of way into the tax parcels where road right of way was not previously digitized.

CREDITS
Capital Area Regional Planning Commission, Madison Area Metropolitan Planning Board, Dane County Land Information Office, Dane County Planning & Development.

USE LIMITATIONS
There are no access and use limitations for this item.

EXTENT

West	-89.846647	**East**	-89.004614
North	43.296906	**South**	42.839234

Scale Range
Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:500,000