***IrrLotCode Analysis***

**Goal:** To identify lots categorized as regular, whose shapes are in fact irregular (Lot Area not equal to Lot Front \* Lot Depth). In some cases, these will be lots that were regular, and subdivided.)

**Result:** A process that will update the indicator on 1,096 lots. (I last ran this process a couple of weeks ago using PLUTO 20v2.)

**Process:**

1. Disaggregate PLUTO’s (unclipped version) geometry to points. Exclude sliver lots (generously defined as 15,000 square feet or less), and lots whose envelope is not at least 15% larger than the lot area. Load the results to an intermediate table called pluto\_points.
2. Run a script called Irrlot.py, which counts and measures the angles in each polygon. Bypass angles considered “straight lines”: angles that measure between 160 and 200 degrees in size. Polygons having an angle count of 4 are considered regular. Other polygons are considered irregular. This script writes the output to a csv file.
3. Load the csv to a table. Add the geometry, IrrLotCode, LotArea, LotFront, LotDepth, LotFront \* LotDepth, and the PLUTO Shape\_Area for easy comparison in ArcMap.
4. I also explored the possibility of replacing the LotArea with the Shape\_Area for the affected records. The original LotArea summed to 163,349,455, and the Shape\_Area summed to 158,619,284, for a difference of -4,730,171 square feet.
5. The process also included a break out by land use code. All land uses saw declines in their area save commercial and office space.

**Supporting Documents**

[Jupiter Notebook](https://github.com/NYCPlanning/db-pluto-research/blob/master/irrlotcode%202019-11/notebooks/irrlotcode.ipynb)

[Spreadsheet with List of Affected Lots, LotArea Summary, LandUse Breakout](https://nyco365.sharepoint.com/sites/NYCPLANNING/itd/edm/_layouts/15/Doc.aspx?sourcedoc=%7B7D9251BA-1AF9-41F9-91A7-C945B09CDC36%7D&file=Lots_Identified_As_Irregular%204-2020.xlsx&action=default&mobileredirect=true&CT=1587484069128&OR=ItemsView)

[LandUse Bar Chart](https://nyco365.sharepoint.com/sites/NYCPLANNING/itd/edm/Shared%20Documents/PROJECTS/DATA%20ENGINEERING/Ann's%20Research/IrrLotCode/barchart.png)

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