City of

Philadelphia

Licenses and Inspections Appeals

OpenDataPhilly

The Department of Licenses and Inspections
accepts applications for appeals of various violations, refusals, revocations, and denials to the following Boards

- Board of Building Standards
- Licenses and Inspections (L&I) Review Board
- Zoning Board of Adjustments.

The dataset shows the decisions made by these Appeal Boards

The Dataset Size

- The dataset is updated daily
- As of 10/9/2021 it contained 29,884 records
- The dataset has 37 columns.

Some of the columns that were considered in this project

- 'censustract’
- 'opa_owner’
- 'primaryappellant’
- 'relatedpermit’
- 'appealstatus’
- 'applicationtype’
- 'appealgrounds’,
- 'decision’
- 'proviso’
- 'systemofrecord’
- 'geocode_x’
- 'geocode_y’
- 'lat’
- 'lng'

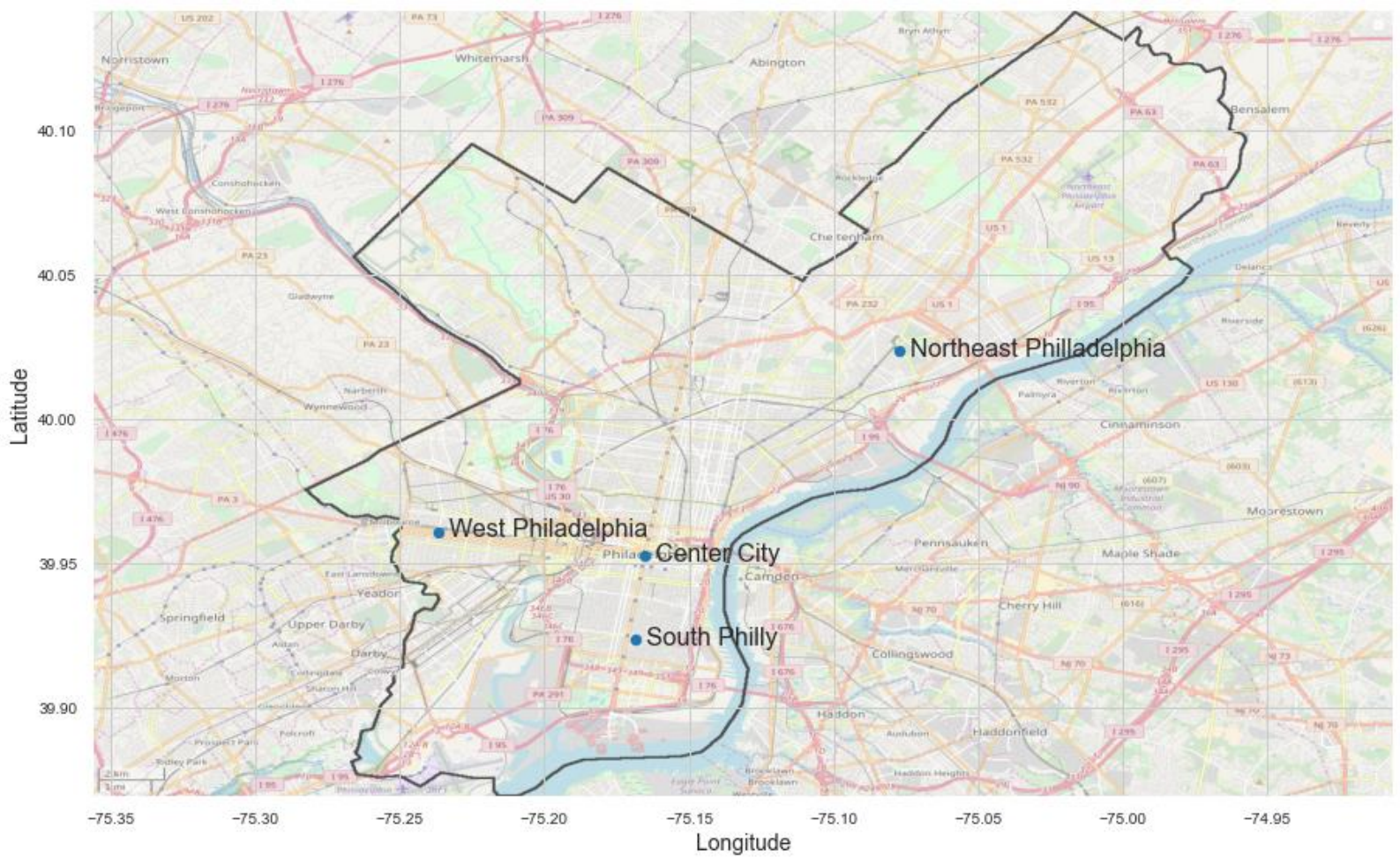
Top 15 Primary Appellants by the number of records in the dataset

SHAWN D. WARD, ESQUIRE	421
ZHEN JIN	288
JOSEPH BELLER, ESQ.	254
DAVID ORPHANIDES, ESQ.	238
SHAWN WARD, ESQ.	228
RONALD PATTERSON, ESQ.	225
ALAN NOCHUMSON, ESQ.	198
RUSTIN OHLER	182
BEDITZA CADILLO	170
BRETT D. FELDMAN, ESQUIRE	165
VERN ANASTASIO, ESQ	162
STEPHEN G. POLLOCK, ESQUIRE	158
CARL PRIMAVERA, ESQUIRE	150
LEO MULVIHILL, JR., ESQ.	147
HENRY M. CLINTON, ESQ	143

It appears that the top appellants are all lawyers. This can't be verified without access to the Philadelphia Bar Association records.

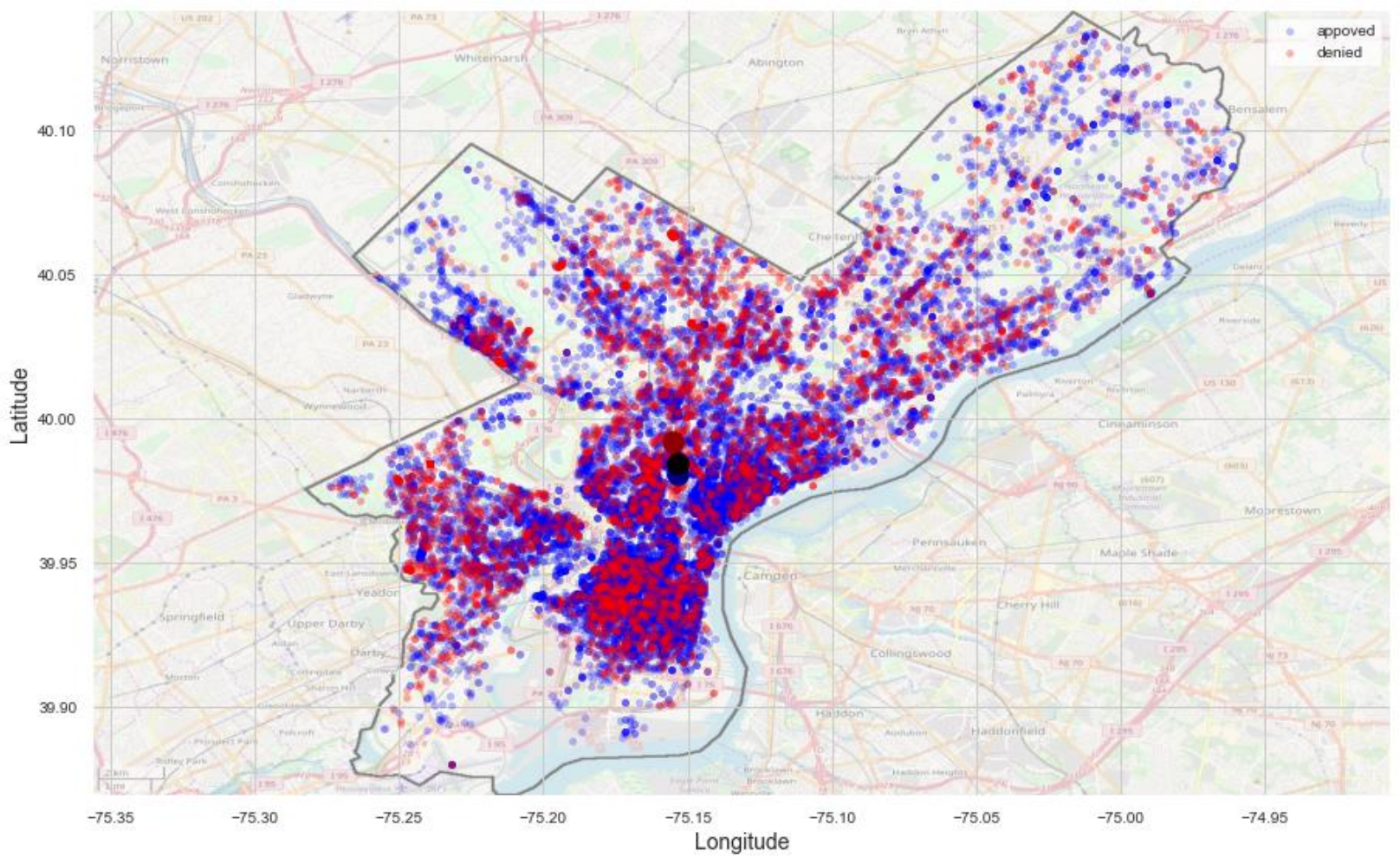
An assumption has been made that ESQ or ESQUIRE in the field identifies the primary appellant as a lawyer.

Landmarks used in Modeling



Following four landmarks were created to assist in the feature generation.

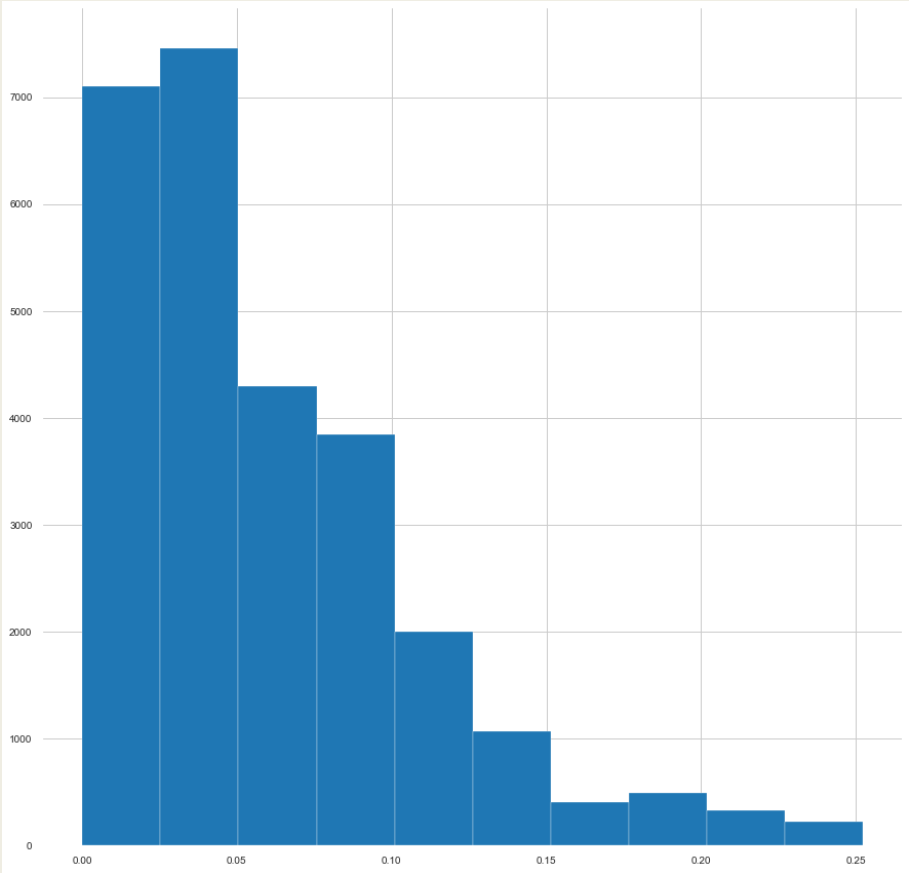
Appeals Map



The more densely populated areas of the city have higher density of appeals. City parks, airports and other non-populated areas do appear empty on the map as well.

Approved and Denied centroids are very close to each other.

Distances to Center City



Most of the records are concentrated closer to Center City and the number gradually drops further away. This is consistent with the Center City being more densely built and more densely populated.

Model Comparison

	Model	Features	F1 score		Accuracy		Precision		Recall	
			Test	Train	Test	Train	Test	Train	Test	Train
1.	K Neighbors Classifier	['Board of Building Standards', 'L&I Review Board Codes', 'Zoning Board of Adjustment', 'lawyer', 'fromCC', 'from_general_center', 'fromSouth', 'fromWest', 'fromNE', 'fromCC_Sq', 'fromSouth_Sq', 'fromWest_Sq', 'fromNE_Sq']	0.708	0.735	0.742	0.765	0.707	0.744	0.742	0.765
2.	K Neighbors Classifier	['Board of Building Standards', 'L&I Review Board Codes', 'Zoning Board of Adjustment', 'lawyer', 'fromCC', 'from_general_center', 'fromSouth', 'fromWest', 'fromNE']	0.707	0.735	0.741	0.765	0.706	0.744	0.741	0.765
3.	K Neighbors Classifier	['Board of Building Standards', 'L&I Review Board Codes', 'Zoning Board of Adjustment', 'lawyer', 'fromCC', 'from_general_center', 'fromSouth', 'fromWest', 'fromNE', 'from_approved_center', 'from_denied_center']	0.707	0.735	0.742	0.764	0.706	0.743	0.742	0.764
4.	Decision Tree Classifier	['Board of Building Standards', 'L&I Review Board Codes', 'Zoning Board of Adjustment', 'lawyer', 'fromCC', 'from_general_center', 'fromSouth', 'fromWest', 'fromNE', 'fromCC_Sq', 'fromSouth_Sq', 'fromWest_Sq', 'fromNE_Sq'] **with TFIDF Vectorizer**	0.707	0.709	0.756	0.757	0.722	0.734	0.756	0.757

Model Comparison

K Neighbors Classifier model without TFIDF vectorizer with the number of neighbors set to 10 has produced the most accurate results.

No model produced better results while using TFIDF vectorizer compared to the models without it. The best one with TFIDF vectorizer was Decision Tree Classifier model