

DSO 562 Fraud Analytics – HW4 – Inspection Report

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Essential descriptions:

$$\begin{array}{ll} V_1 = \text{FULLVAL} & S_1 = \text{LTFRONT} * \text{LTDEPTH} \\ V_2 = \text{AVLAND} & S_2 = \text{BLDFRONT} * \text{BLDDEPTH} \\ V_3 = \text{AVTOT} & S_3 = S_2 * \text{STORIES} \end{array}$$

$$r_1 = \frac{V_1}{S_1} \quad r_4 = \frac{V_2}{S_1} \quad r_7 = \frac{V_3}{S_1}$$

$$r_2 = \frac{V_1}{S_2} \quad r_5 = \frac{V_2}{S_2} \quad r_8 = \frac{V_3}{S_2}$$

$$r_3 = \frac{V_1}{S_3} \quad r_6 = \frac{V_2}{S_3} \quad r_9 = \frac{V_3}{S_3}$$

$$\text{ri_inverse} = 1/r_i$$

These 18 ratios are then grouped by zip5, zip3, TAXCLASS, borough. Then the average of each ratio r_i for each group g is calculated. Z scaled values (zscores) tell how many standard deviations from the mean is the value.

Criteria for evaluating the high scores:

Color scale conditional formatting of the scores highlights the extreme scores. These extreme scores are then manually evaluated and reported for fraudulent activity.

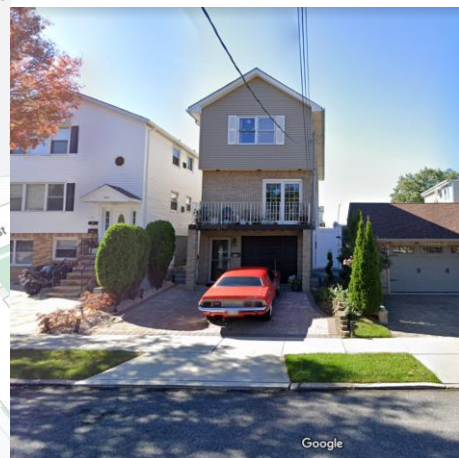
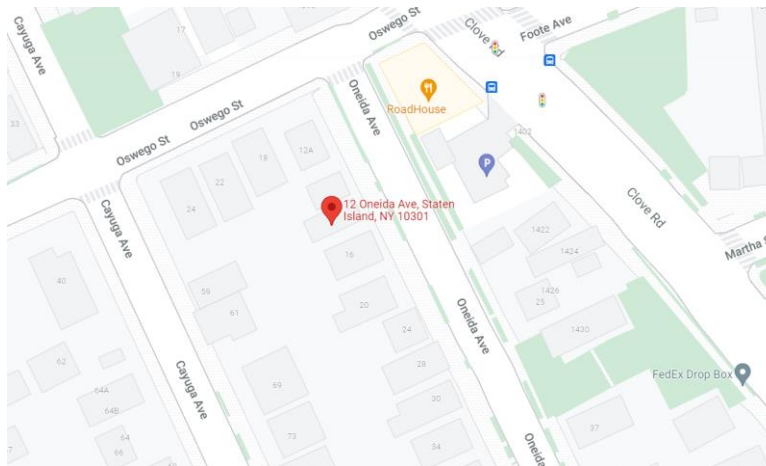
RECORD 917942

Original values:

Variable	Value	Variable	Value
RECORD	917942	EXLAND	1792808947
BBLE	4142600001	EXTOT	4668308947
BORO	4	EXCD1	2198
BLOCK	14260	STADDR	154-68 BROOKVILLE BOULEVARD
LOT	1	ZIP	11422
EASEMENT		EXMPTCL	X4
OWNER	LOGAN PROPERTY, INC.	BLDFRONT	0
BLDGCL	T1	BLDDEPTH	0
TAXCLASS	4	AVLAND2	1644454002
LTFRONT	4910	AVTOT2	4501180002
LTDEPTH	0	EXLAND2	1644454002
EXT		EXTOT2	4501180002
STORIES	3	EXCD2	
FULLVAL	374019883	PERIOD	FINAL
AVLAND	1792808947	YEAR	2010/11
AVTOT	4668308947	VALTYPE	AC-TR

Analysis:

This record is of particular interest as it has high r2inv_taxclass, r3inv_taxclass, r5inv_taxclass, r6inv_taxclass, r8inv_taxclass and r9inv_taxclass values. This indicated that the property has unusually low for its tax class.



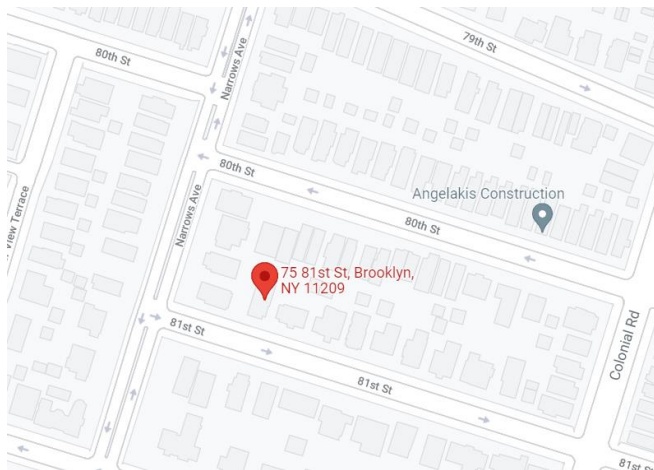
RECORD 459429

Original values:

Variable	Value	Variable	Value
RECORD	459429	EXLAND	0
BBLE	3059930075	EXTOT	0
BORO	3	EXCD1	
BLOCK	5993	STADDR	81 STREET
LOT	75	ZIP	
EASEMENT		EXMPTCL	
OWNER		BLDFRONT	0
BLDGCL	V0	BLDDEPTH	0
TAXCLASS	1B	AVLAND2	
LTFRONT	8	AVTOT2	
LTDEPTH	100	EXLAND2	
EXT		EXTOT2	
STORIES		EXCD2	
FULLVAL	101200	PERIOD	FINAL
AVLAND	1	YEAR	2010/11
AVTOT	1	VALTYPE	AC-TR

Analysis:

This record is of particular interest as it has high r8inv, r9inv, r5inv_zip5, r6inv_zip5, r8inv_zip5, r9inv_zip5, r8inv_zip3, r9inv_zip3, r8inv_bor, and r9inv_boro values. This indicated that the property has unusually low values. This can be caused by the AVTOT, BLDFRONT and BLDDEPTH values, which seem to be unreasonably low. It is also missing address details to confirm, however google maps indicates this to be the address 75 81st St, Brooklyn, NY 11209.



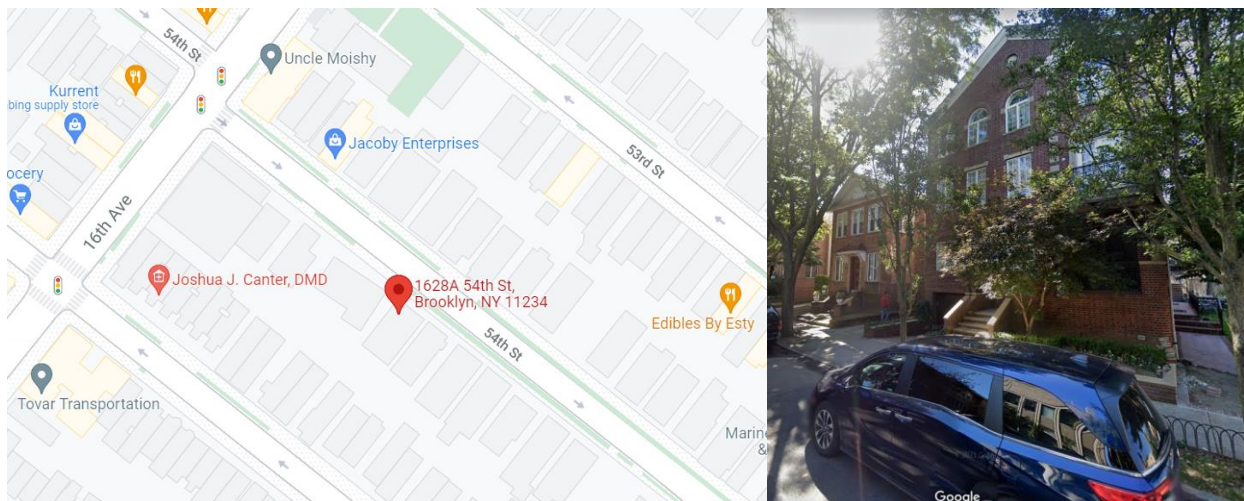
RECORD 435070

Original values:

Variable	Value	Variable	Value
RECORD	435070	EXLAND	0
BBLE	3054850020	EXTOT	0
BORO	3	EXCD1	
BLOCK	5485	STADDR	1628A 54 STREET
LOT	20	ZIP	11204
EASEMENT		EXMPTCL	
OWNER	KLEIN HARRY	BLDFRONT	0
BLDGCL	V0	BLDDEPTH	0
TAXCLASS	1B	AVLAND2	
LTFRONT	2	AVTOT2	
LTDEPTH	100	EXLAND2	
EXT		EXTOT2	
STORIES		EXCD2	
FULLVAL	5730	PERIOD	FINAL
AVLAND	10	YEAR	2010/11
AVTOT	10	VALTYPE	AC-TR

Analysis:

This record is of particular interest as it has high r8inv_zip5 and r9inv_zip5 values and mildly higher values for r8inv_zip3 and r9inv_zip3. This indicated that the property has unusually low values for that zip. This can be caused by the AVTOT value which seem to be unreasonably low.



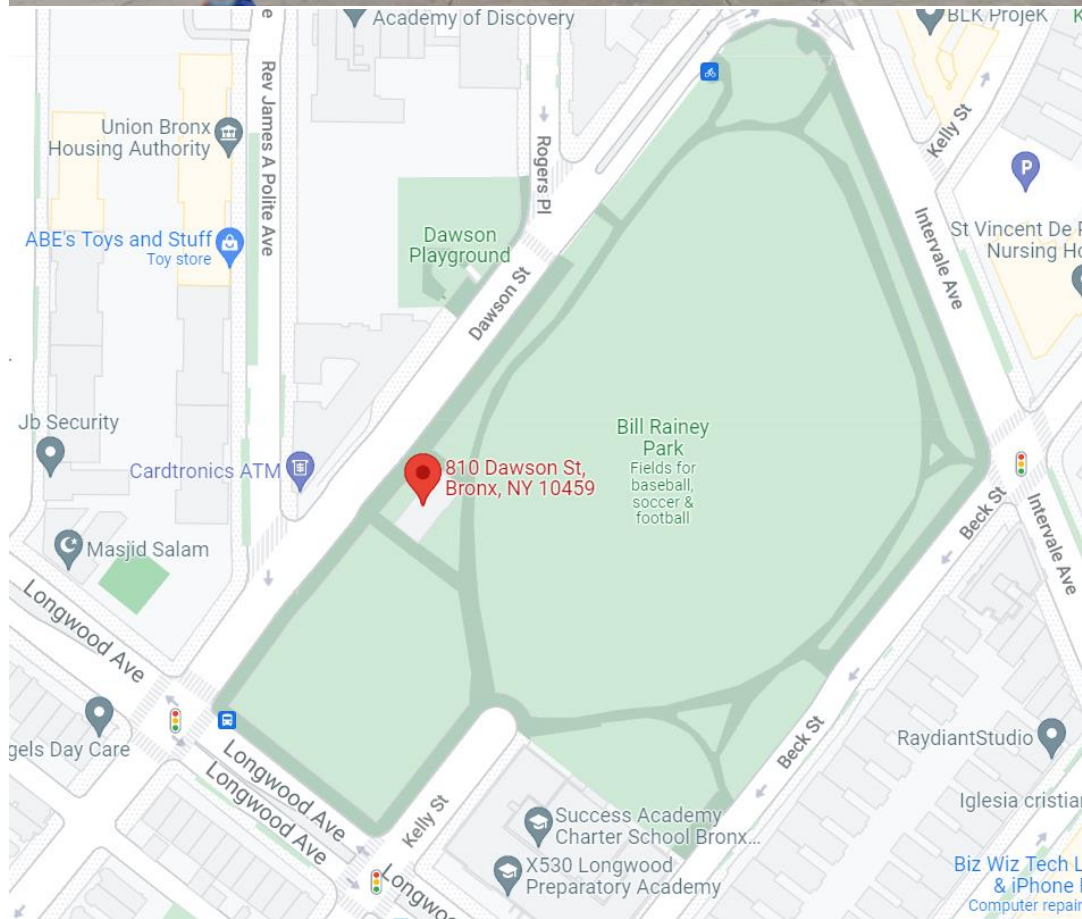
RECORD 155893

Original values:

Variable	Value	Variable	Value
RECORD	155893	EXLAND	1075500
BBLE	2027020001	EXTOT	1386000
BORO	2	EXCD1	2231
BLOCK	2702	STADDR	810 DAWSON STREET
LOT	1	ZIP	10459
EASEMENT		EXMPTCL	
OWNER	ATTRACTIVE HOME, INC.	BLDFRONT	73
BLDGCL	Q1	BLDDEPTH	31
TAXCLASS	4	AVLAND2	961200
LTFRONT	4	AVTOT2	1237500
LTDEPTH	31	EXLAND2	961200
EXT		EXTOT2	1237500
STORIES	1	EXCD2	
FULLVAL	3080000	PERIOD	FINAL
AVLAND	1075500	YEAR	2010/11
AVTOT	1386000	VALTYPE	AC-TR

Analysis:

This record is of particular interest as it has high r1, r4 and r7 values for all groups, zip5, zip3, TAXCLASS and borough. This indicated that the property has unusually high values for its neighborhood and its tax-class. This can be caused by the AVLAND, AVTOT, LTFRONT and LTDEPTH value which seem to be unreasonably low.



RECORD 252834

Original values:

Variable	Value	Variable	Value
RECORD	252834	EXLAND	0
BBLE	2059200130E	EXTOT	0
BORO	2	EXCD1	
BLOCK	5920	STADDR	4510E DOUGLAS AVENUE
LOT	130	ZIP	10471
EASEMENT	E	EXMPTCL	
OWNER		BLDFRONT	0
BLDGCL	V9	BLDDEPTH	0
TAXCLASS	4	AVLAND2	
LTFRONT	6	AVTOT2	
LTDEPTH	6	EXLAND2	
EXT		EXTOT2	
STORIES		EXCD2	
FULLVAL	0	PERIOD	FINAL
AVLAND	0	YEAR	2010/11
AVTOT	0	VALTYPE	AC-TR

Analysis:

This record is of particular interest as it has high r4 and r7 values for zip5, zip3, and borough. This indicated that the property has unusually high values for its neighborhood. This can be caused by the LTFRONT and LTDEPTH value which seem to be unreasonably low. Below street view is a picture of Douglas Avenue.

