
APPENDIX H

STATISTICAL ANALYSES

Statistical Analyses

The correlation coefficient (r) represents the linear relationship between two variables. If the correlation coefficient is squared, then the resulting value (r^2 , the coefficient of determination) will represent the proportion of common variation in the two variables (i.e., the "strength" or "magnitude" of the relationship). In order to evaluate the correlation between variables, it is important to know this "magnitude" or "strength" as well as the significance of the correlation coefficients are significant.

A test is available that will evaluate the significance of differences between two correlation coefficients in two samples. The outcome of this test depends not only on the size of the raw difference between the two coefficients but also on the size of the samples and on the size of the coefficients themselves. Consistent with the previously discussed principle, the larger the sample size, the smaller the effect that can be proven significant in that sample. In general, due to the fact that the reliability of the correlation coefficient increases with its absolute value, relatively small differences between large correlation coefficients can be significant. For example, a difference of .10 between two correlations may not be significant if the two coefficients are .15 and .25, although in the same sample, the same difference of .10 can be highly significant if the two coefficients are .80 and .90.

All data were analyzed using STATISTICA (Statsoft Inc., Tulsa KA). Pearson correlation coefficients and p-values were determined relating distance from three Omnitrans facilities, individuals age, and various health criteria. Health was scored on a scale from 1 (self reported very healthy) to five (self reported very unhealthy) (Tables). The most widely-used type of correlation coefficient is Pearson r (Pearson, 1896). The correlation coefficient determines the extent to which values of two variables are "proportional" to each other. The value of the correlation (i.e., correlation coefficient) does not depend on the specific measurement units used; for example, the correlation between height and weight will be identical regardless of whether inches and pounds, or centimeters and kilograms are used as measurement units. Proportional means linearly related; that is, the correlation is high if it can be approximated by a straight line (sloped upwards or downwards). This line is called the regression line or least squares line, because it is determined such that the sum of the squared distances of all the data points from the line is the lowest possible. Pearson correlation assumes that the two variables are measured on at least interval scales. The Pearson equation for determining r is below:

$$r = \frac{\sum_{i1} (Y_{i1} - \bar{Y}_1) * (Y_{i2} - \bar{Y}_2)}{[\sum_{i1} (Y_{i1} - \bar{Y}_1)^2 * \sum_{i2} (Y_{i2} - \bar{Y}_2)^2]^{(1/2)}}$$

Correlations Introductory Overview - How to Interpret the Values of Correlations

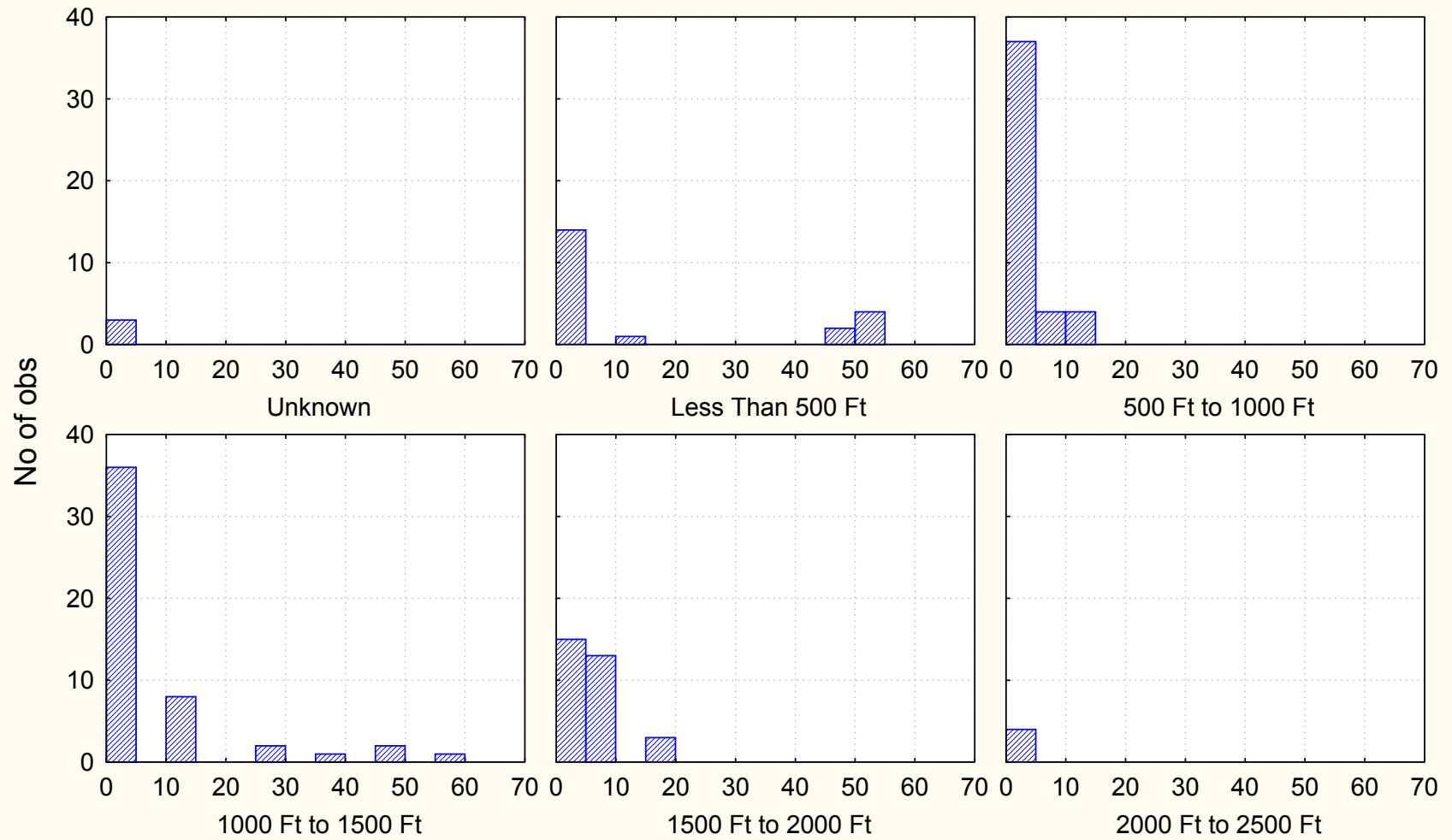
As mentioned before, the correlation coefficient (r) represents the linear relationship between two variables. If the correlation coefficient is squared, then the resulting value (r², the coefficient of determination) will represent the proportion of common variation in the two variables (i.e., the "strength" or "magnitude" of the relationship). In order to evaluate the correlation between variables, it is important to know this "magnitude" or "strength" as well as the significance of the correlation. coefficients are Significant.

A test is available that will evaluate the significance of differences between two correlation coefficients in two samples (see the Probability calculator). The outcome of this test depends not only on the size of the raw difference between the two coefficients but also on the size of the samples and on the size of the coefficients themselves. Consistent with the previously discussed principle, the larger the sample size, the smaller the effect that can be proven significant in that sample. In general, due to the fact that the reliability of the correlation coefficient increases with its absolute value, relatively small differences between large correlation coefficients can be significant. For example, a difference of .10 between two correlations may not be significant if the two coefficients are .15 and .25, although in the same sample, the same difference of .10 can be highly significant if the two coefficients are .80 and .90.

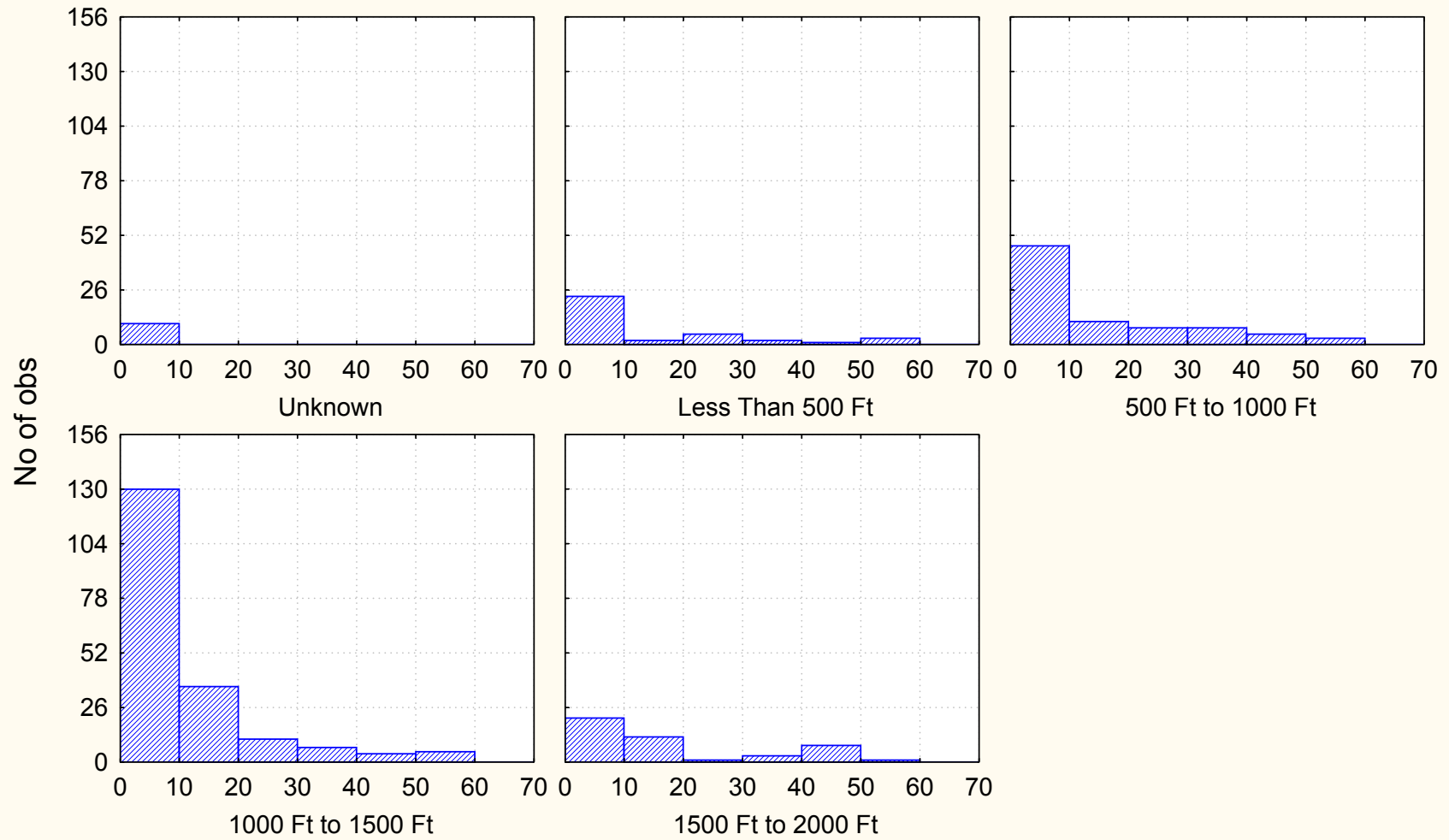
Pearson (1896). Regression, Heredity and Panmixia. Philosophical Transactions in the Royal Society of London. Series A 187 253-318.

Years Living At Current Residence

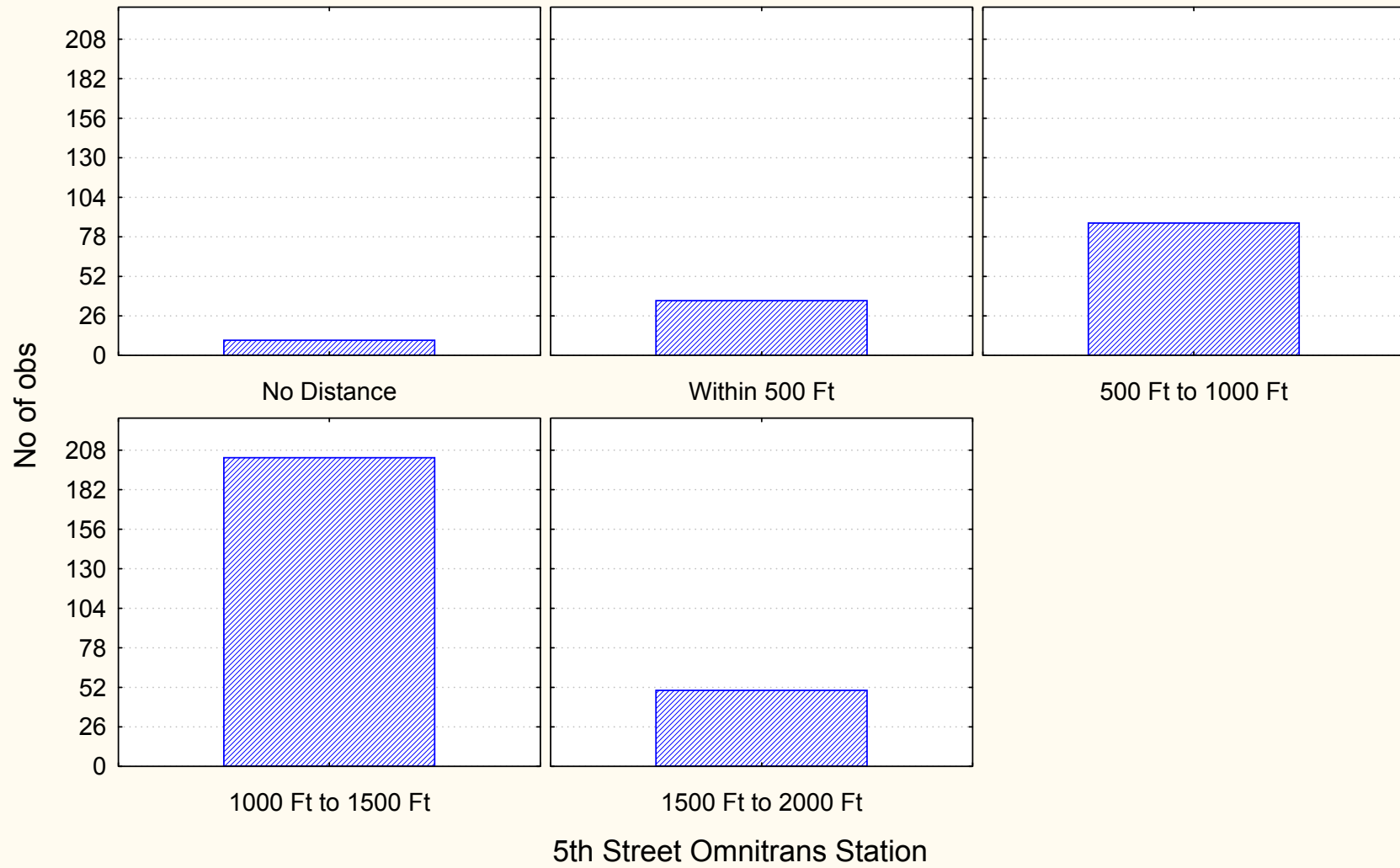
I Street Residents



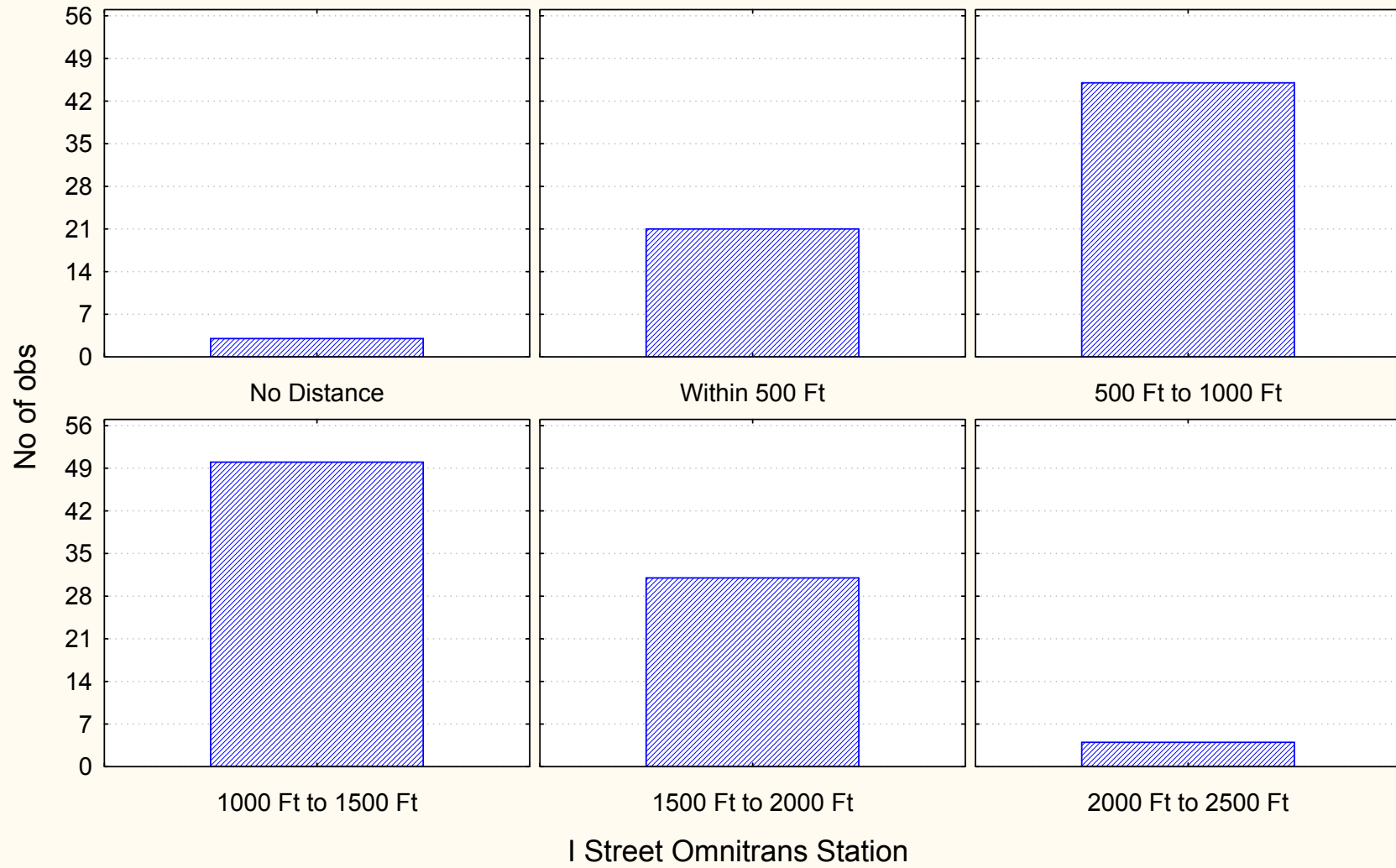
Years Living In Residence 5th Street Residents



Number of Respondents Surveyed Near 5th Street



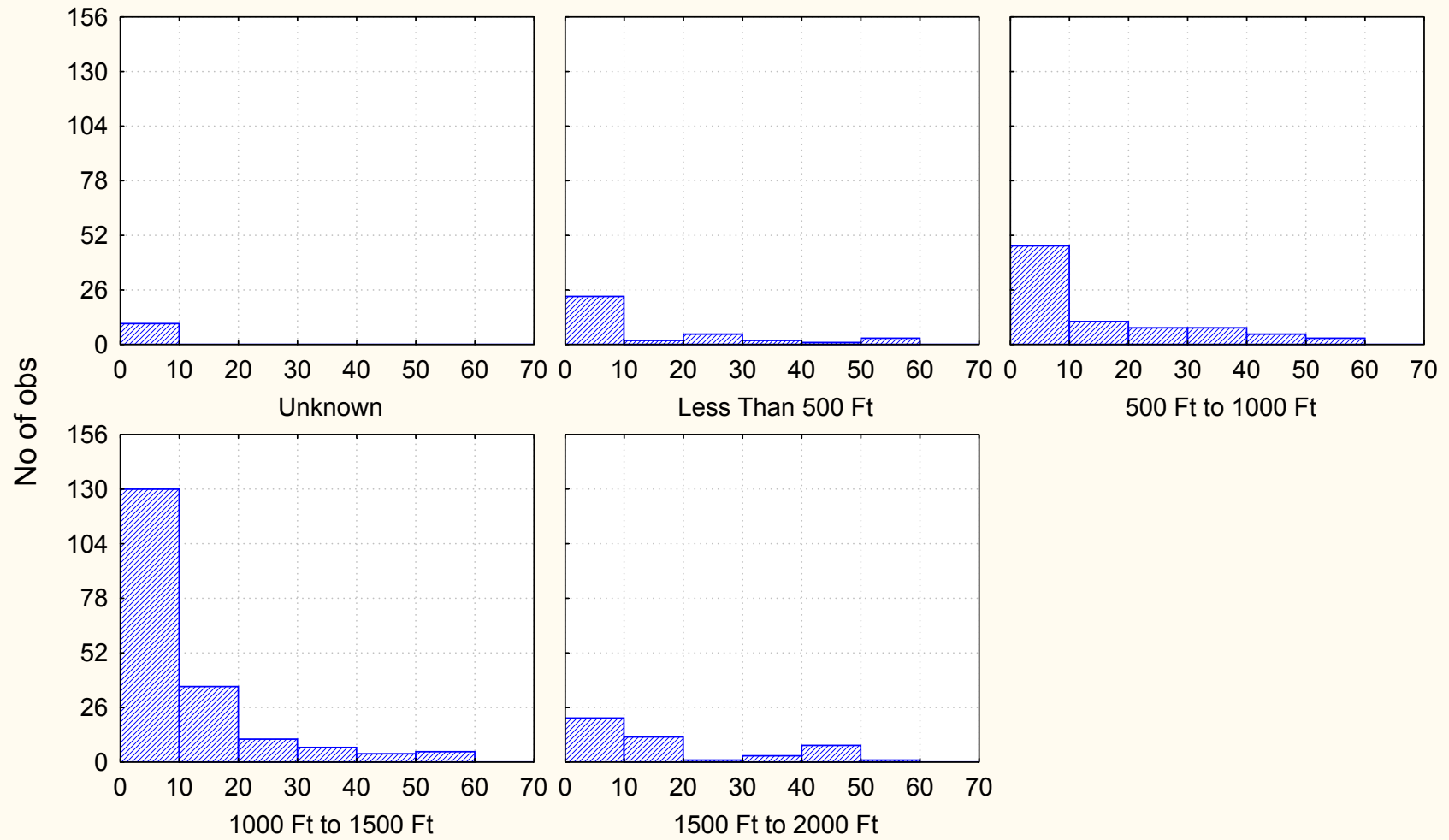
Number of Respondents Surveyed Near I Street



Number of Respondents Surveyed Near Montclair

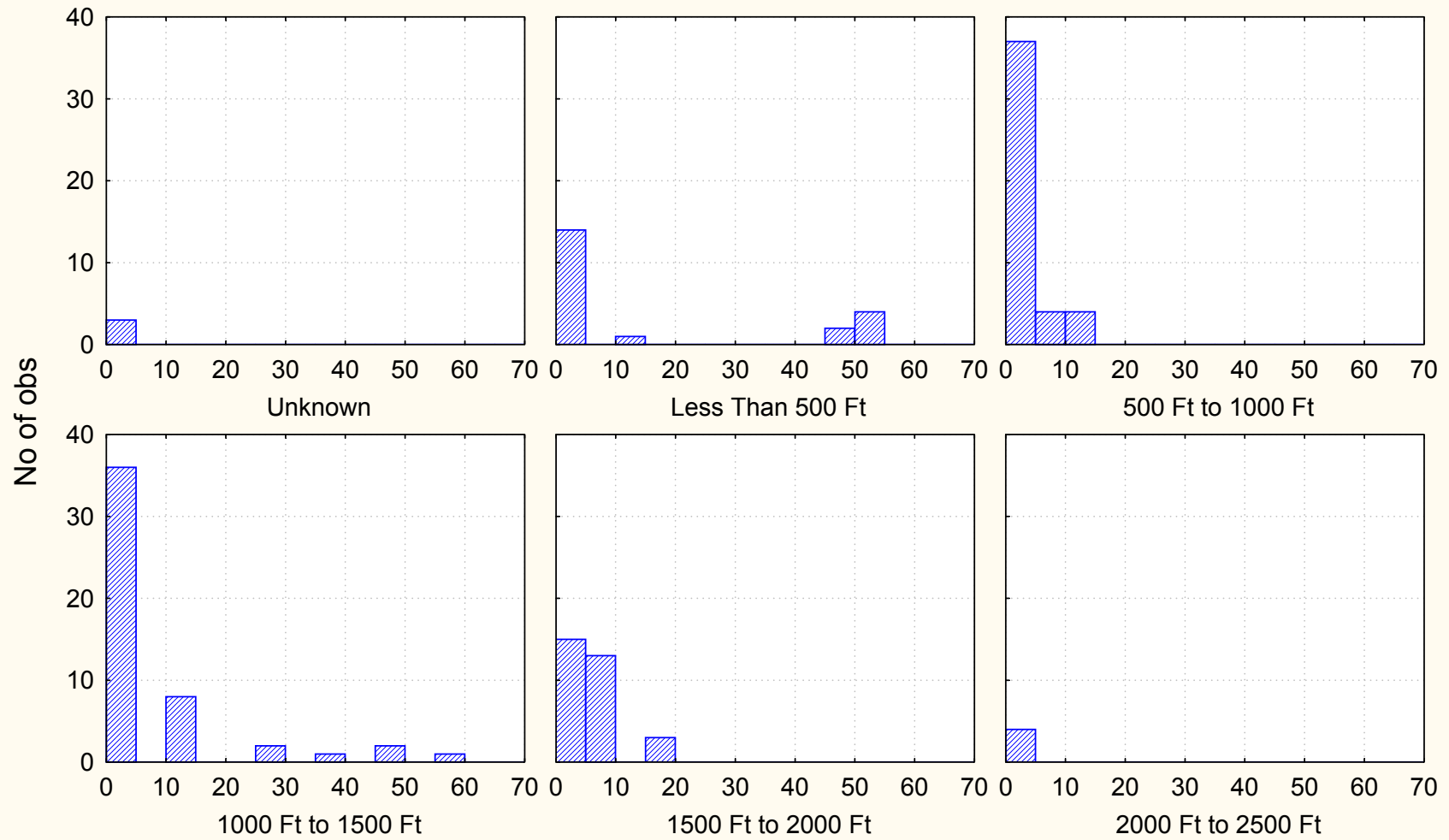


Years Living In Residence 5th Street Residents

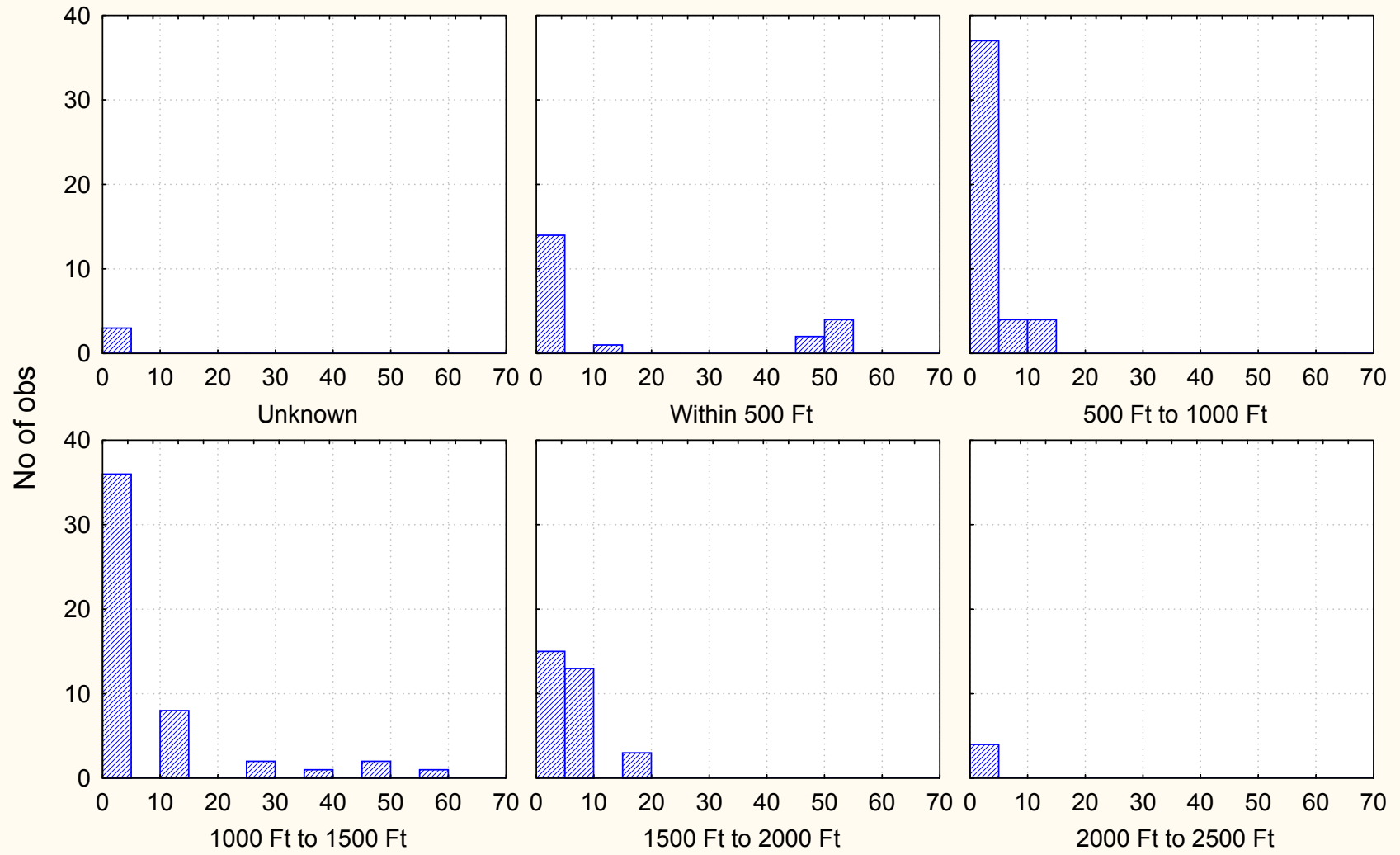


Years Living At Current Residence

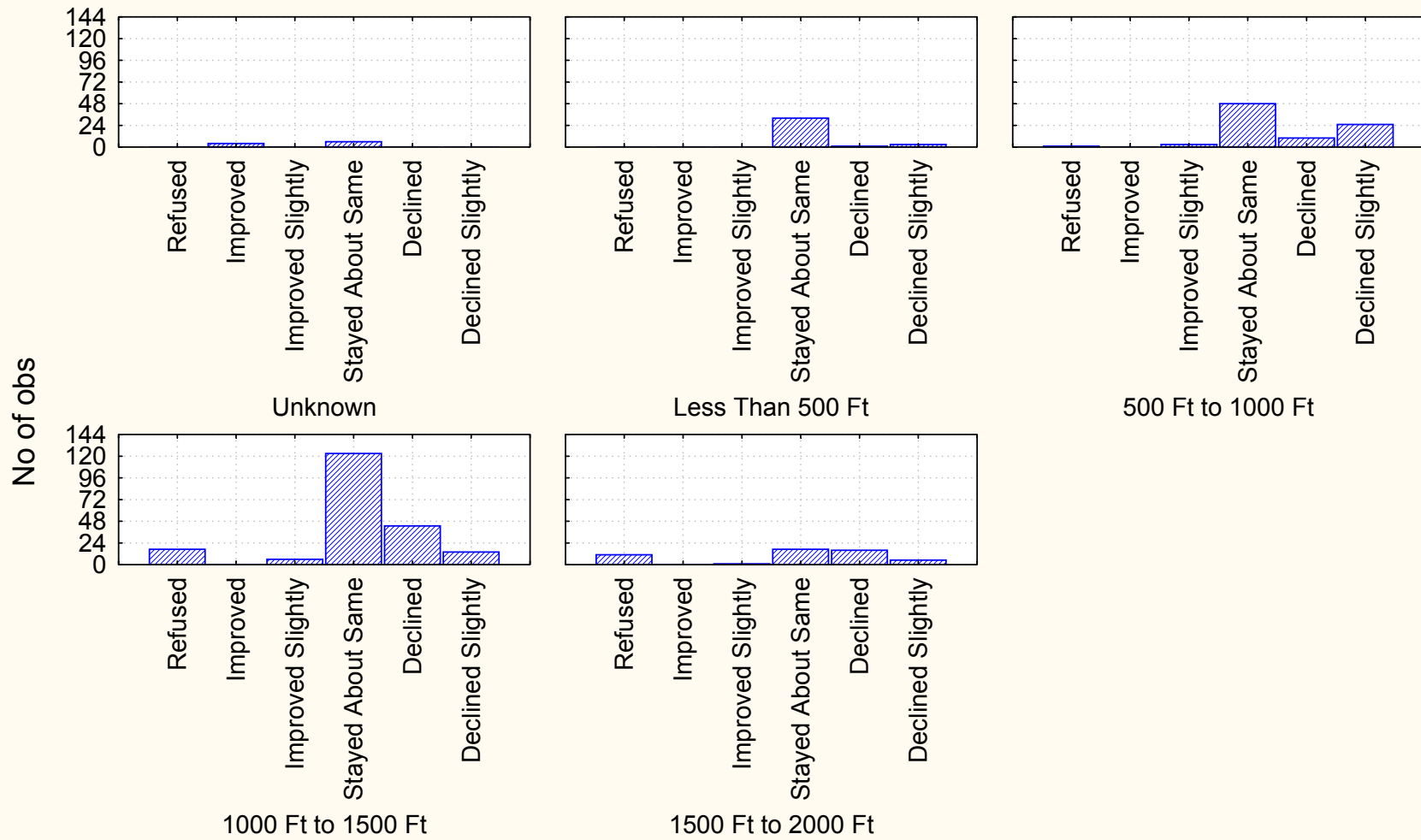
I Street Residents



Years Living at Current Residence Near Montclair

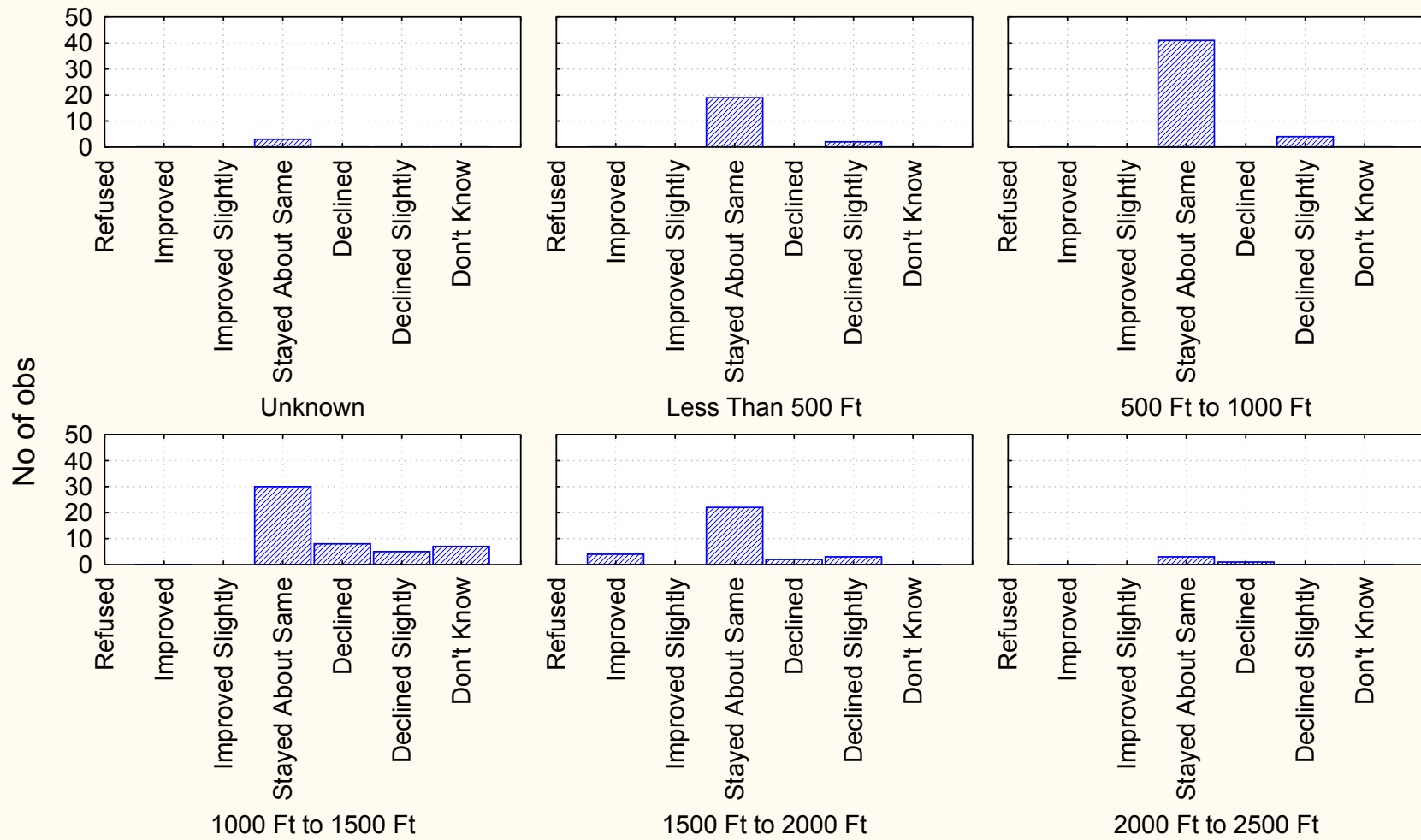


Self Reported 5 Year Health Status 5th Street Residents

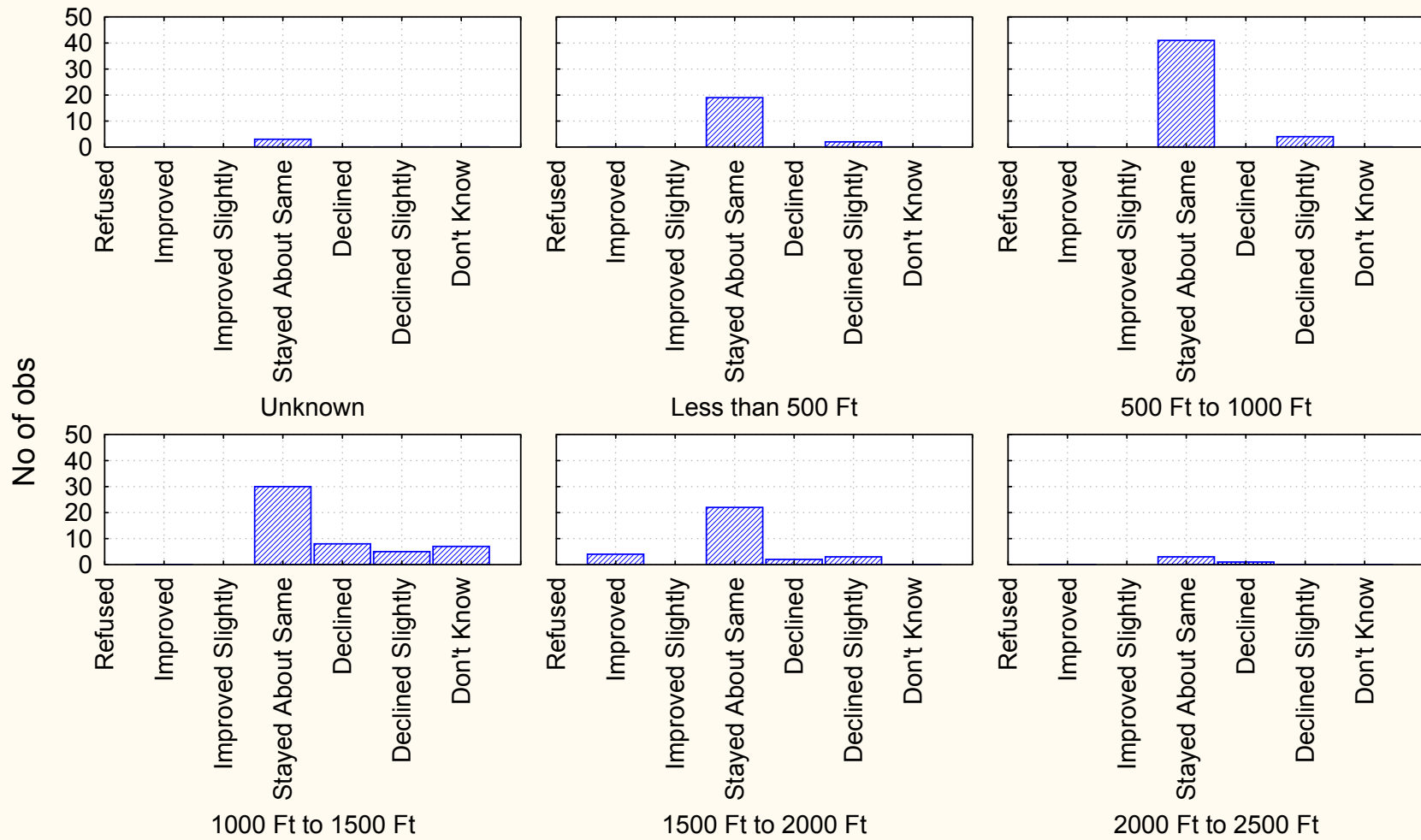


Self Reported 5 Year Health Status

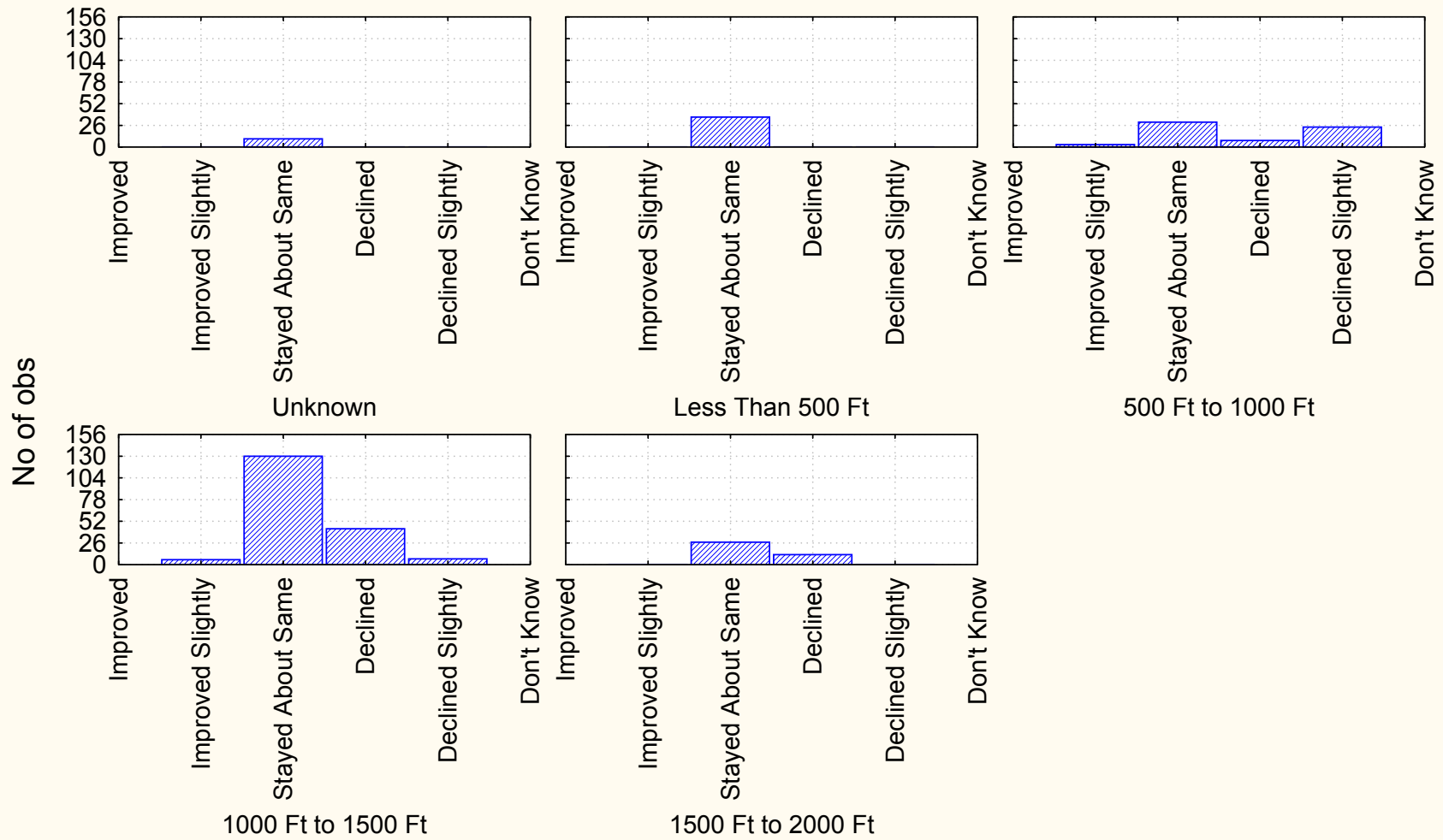
I Street Residents



Self Reported 5 Year Health Status Arrow Highway Residents

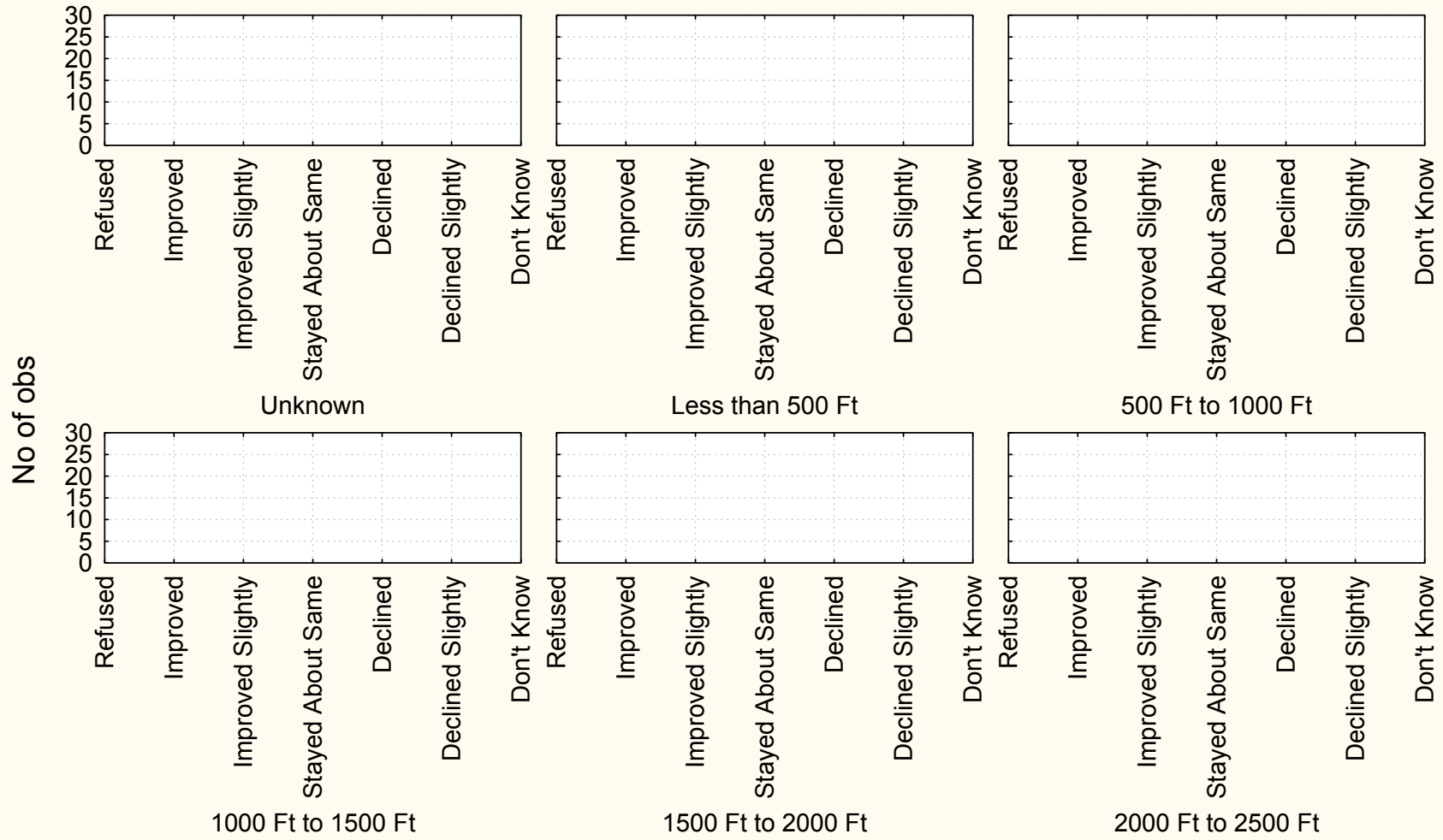


Self Reported 3 Year Health Status 5th Street Residents

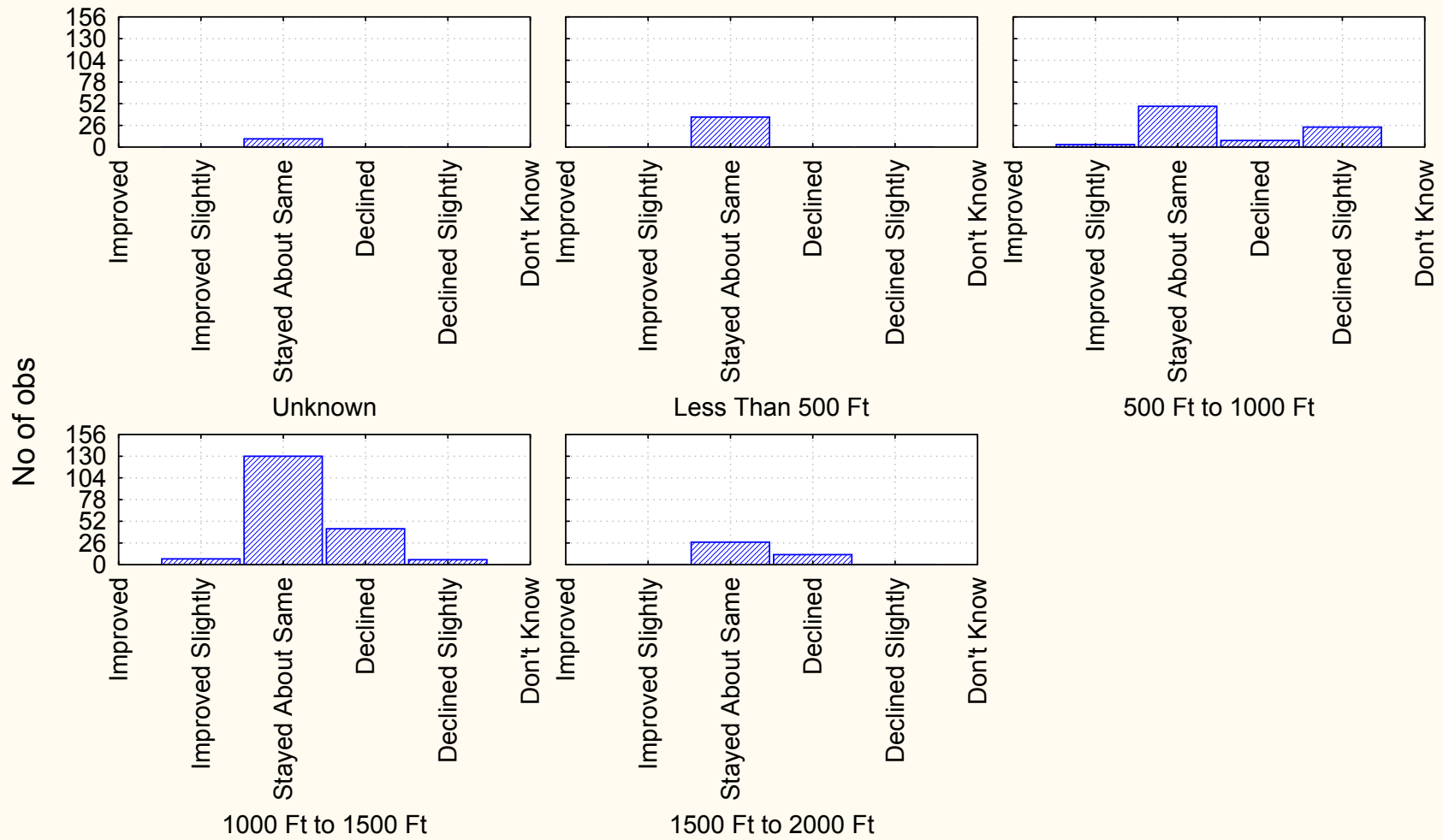


Self Reported 3 Year Health Status

I Street Residents

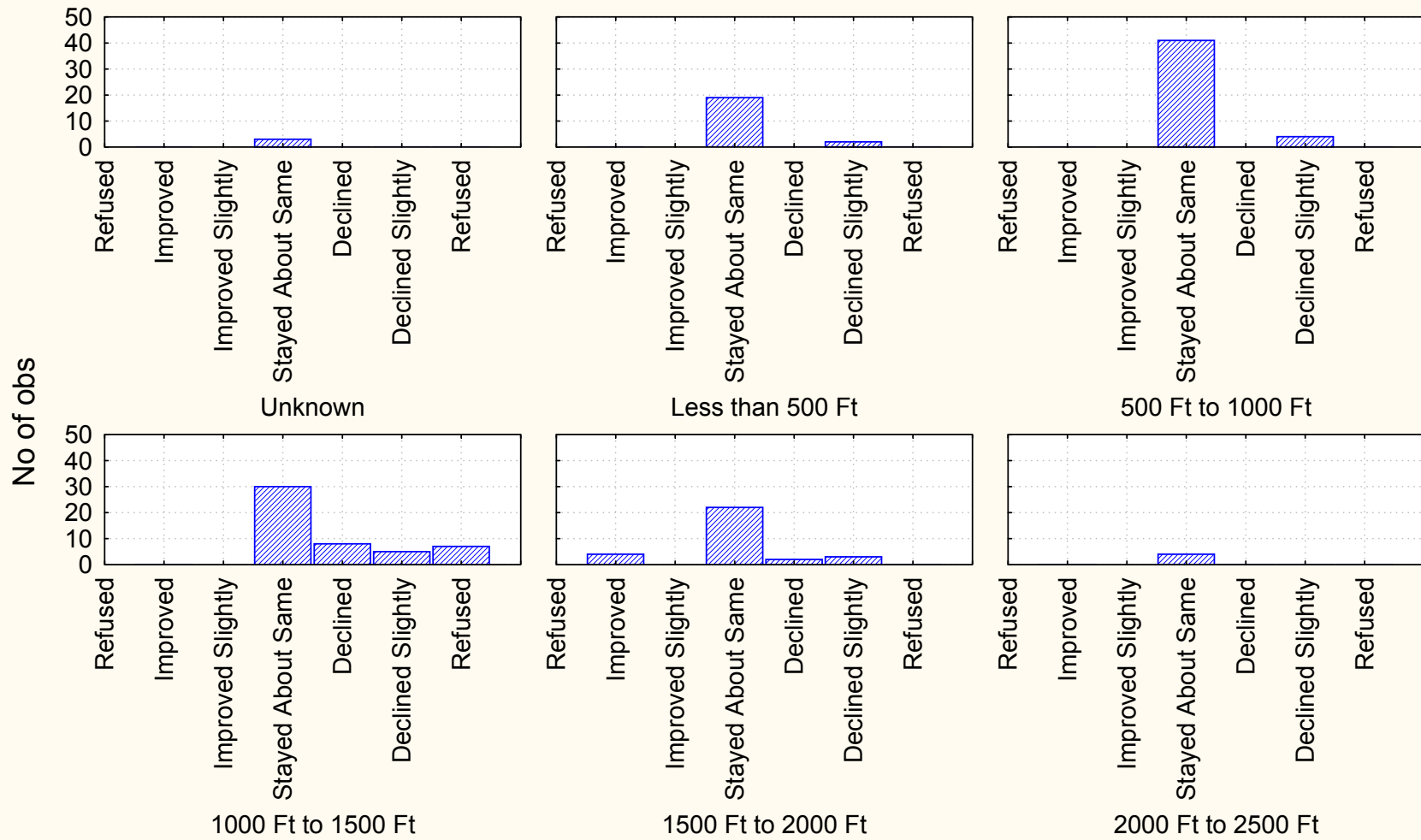


Self Reported 1 Year Health Status 5th Street Residents



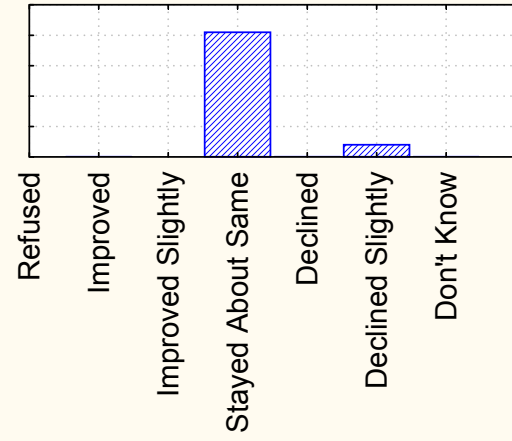
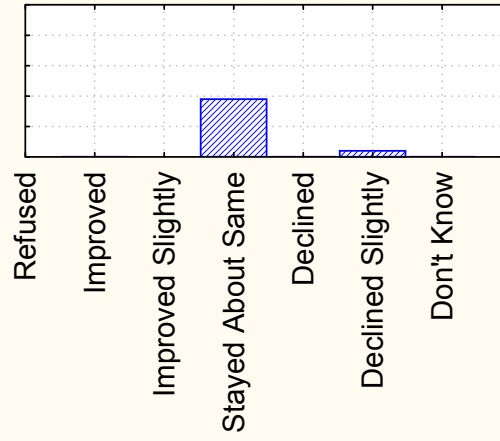
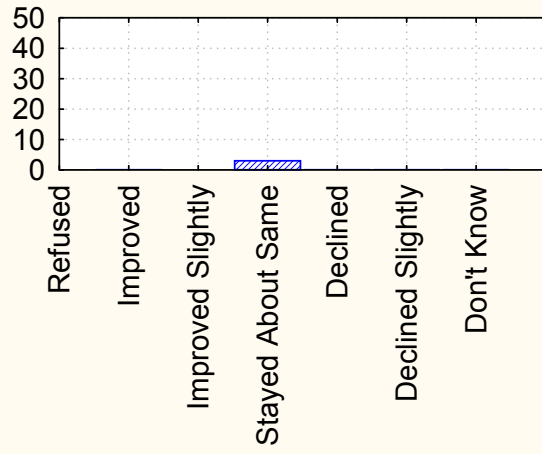
Self Reported 1 Year Health Status

I Street Residents



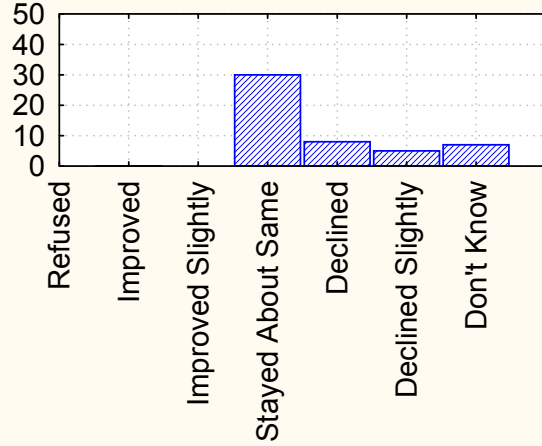
Self Reported 1 Year Health Status

Arrow Highway

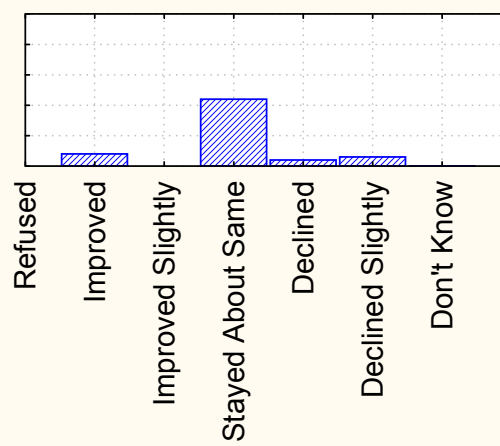


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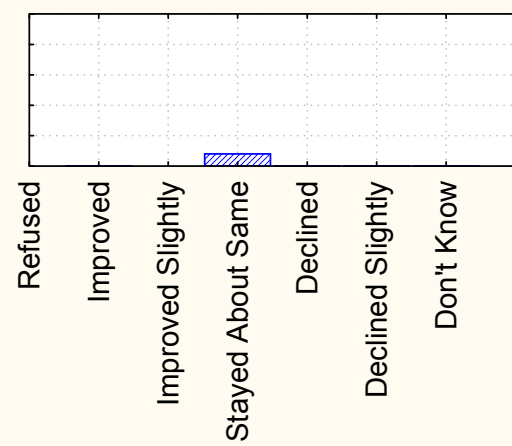
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Less Than 500 Ft



500 Ft to 1000 Ft



1000 Ft to 1500 Ft

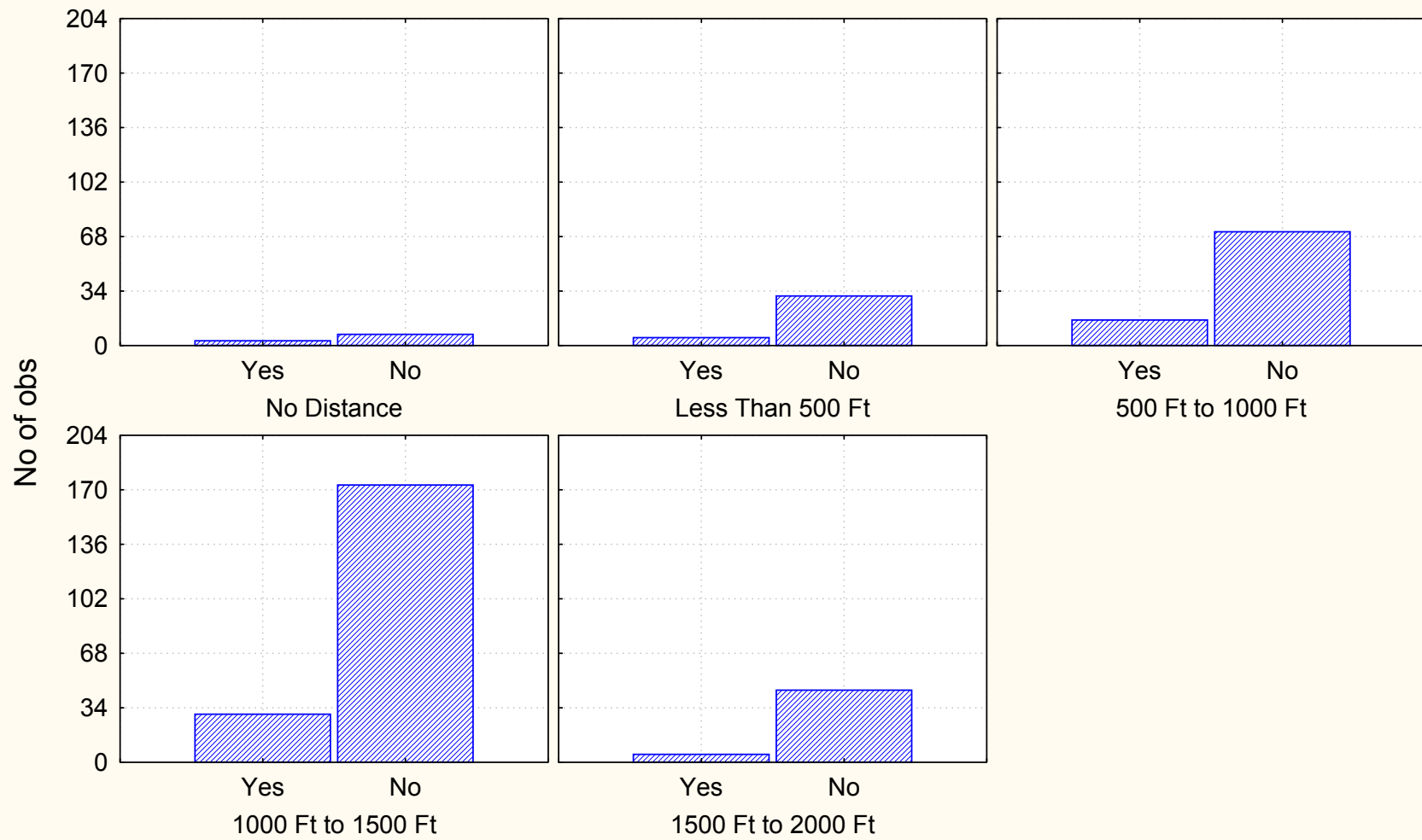
1500 Ft to 2000 Ft

2000 Ft to 2500 Ft

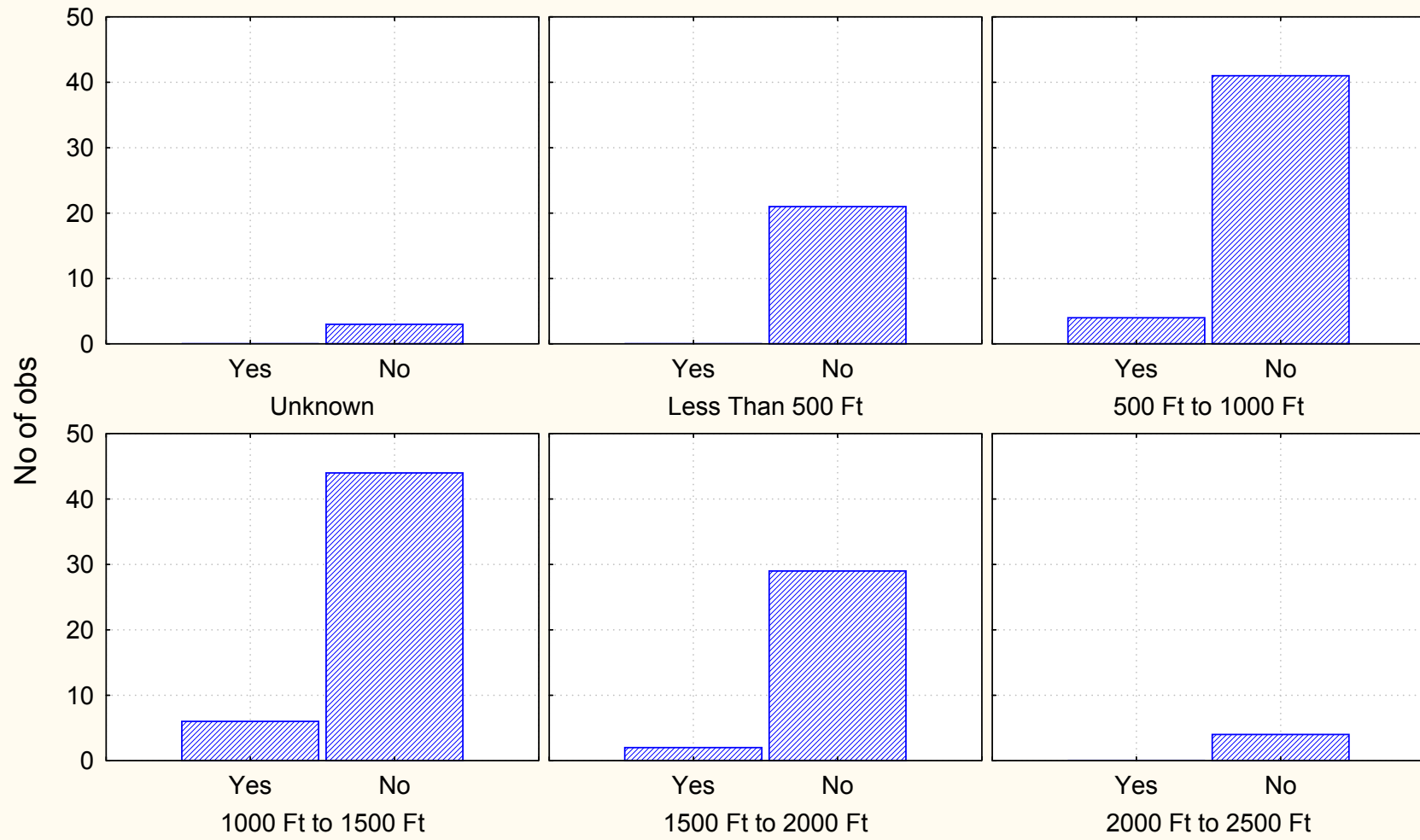
Have Activities Become Limited 5th Street Residents



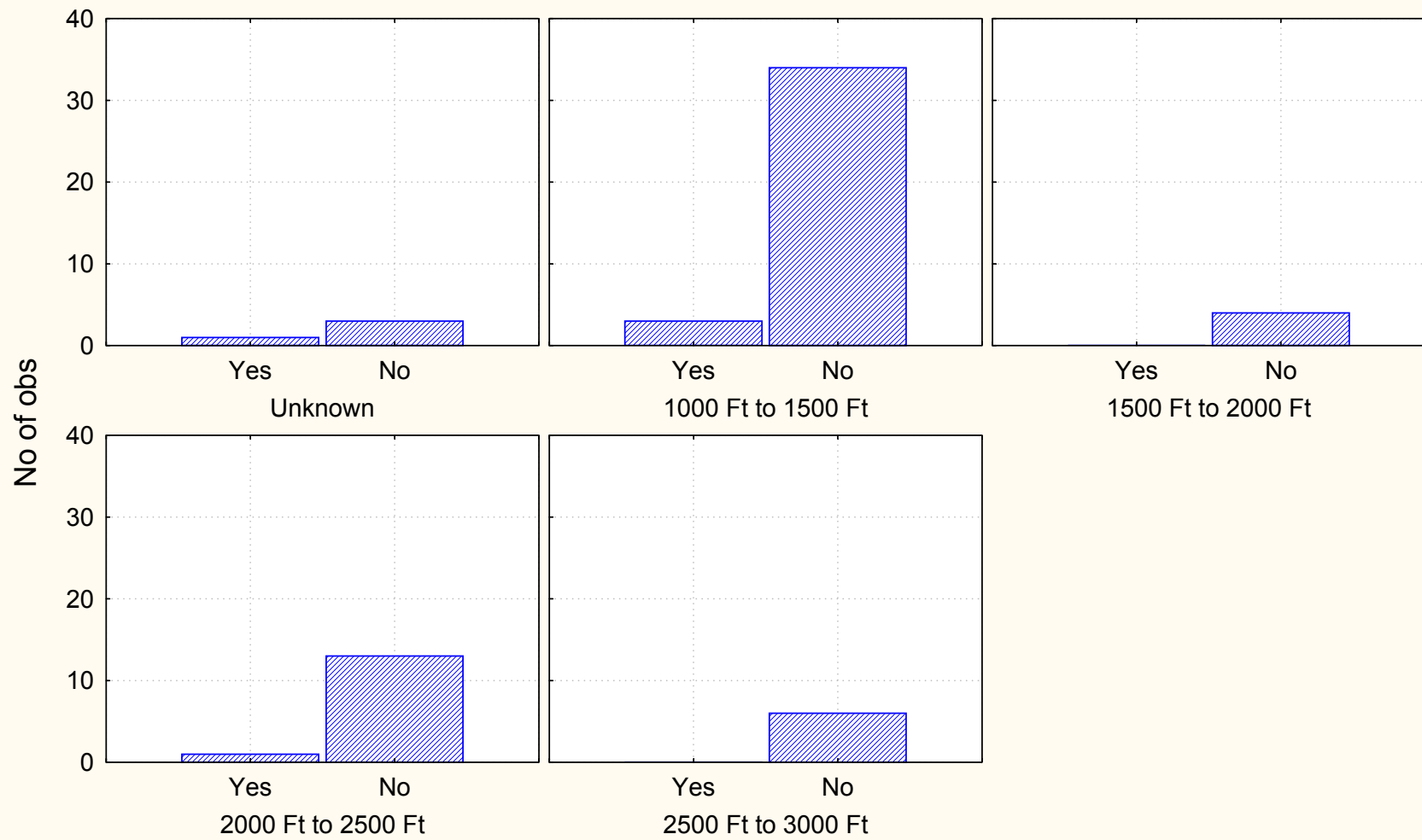
Self Reported Asthma 5th Street Residents



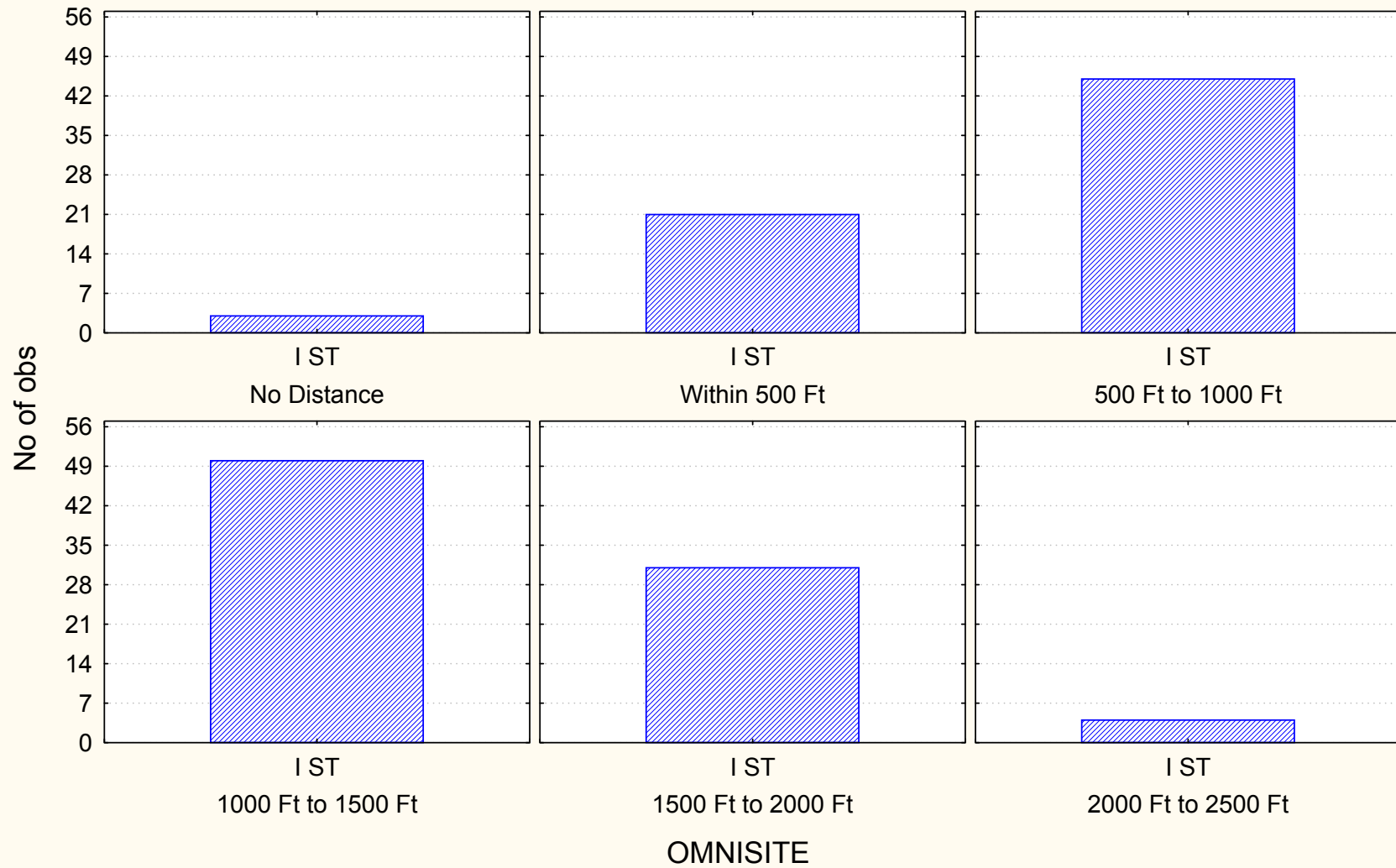
Self Report Asthma I Street Residents



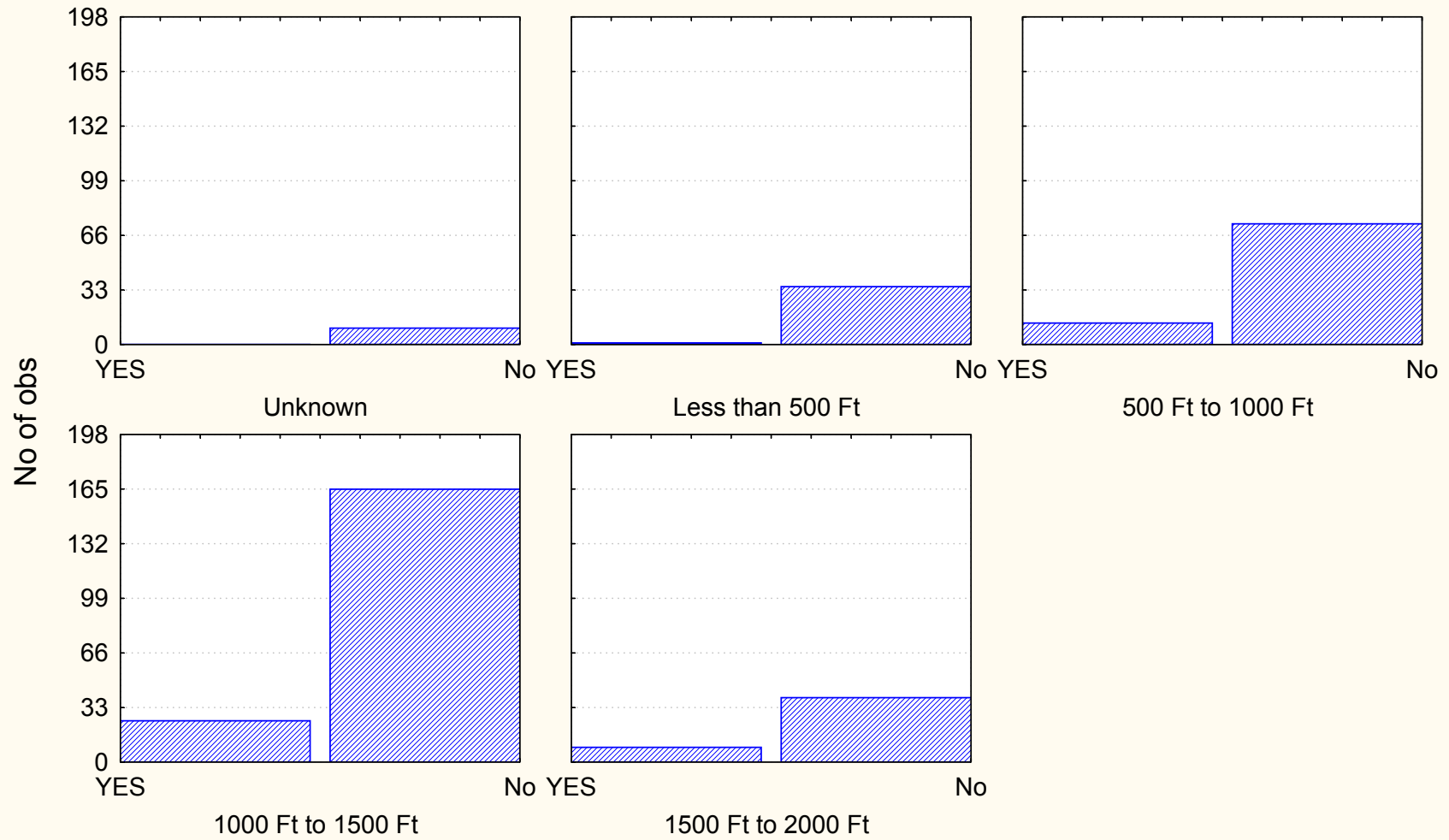
Self Reported Asthma Montclair Residents



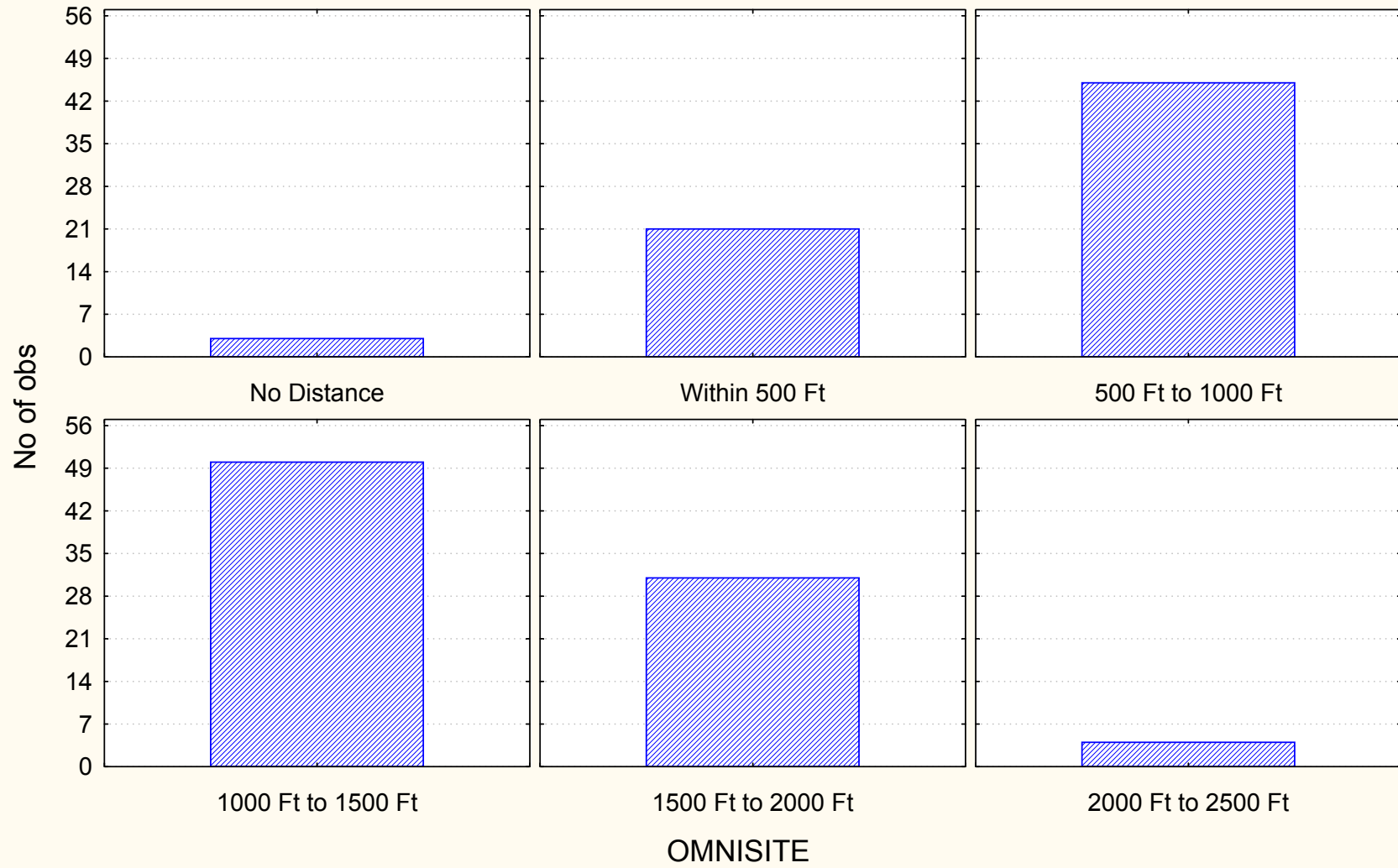
Number of Respondents Surveyed Near Montclair



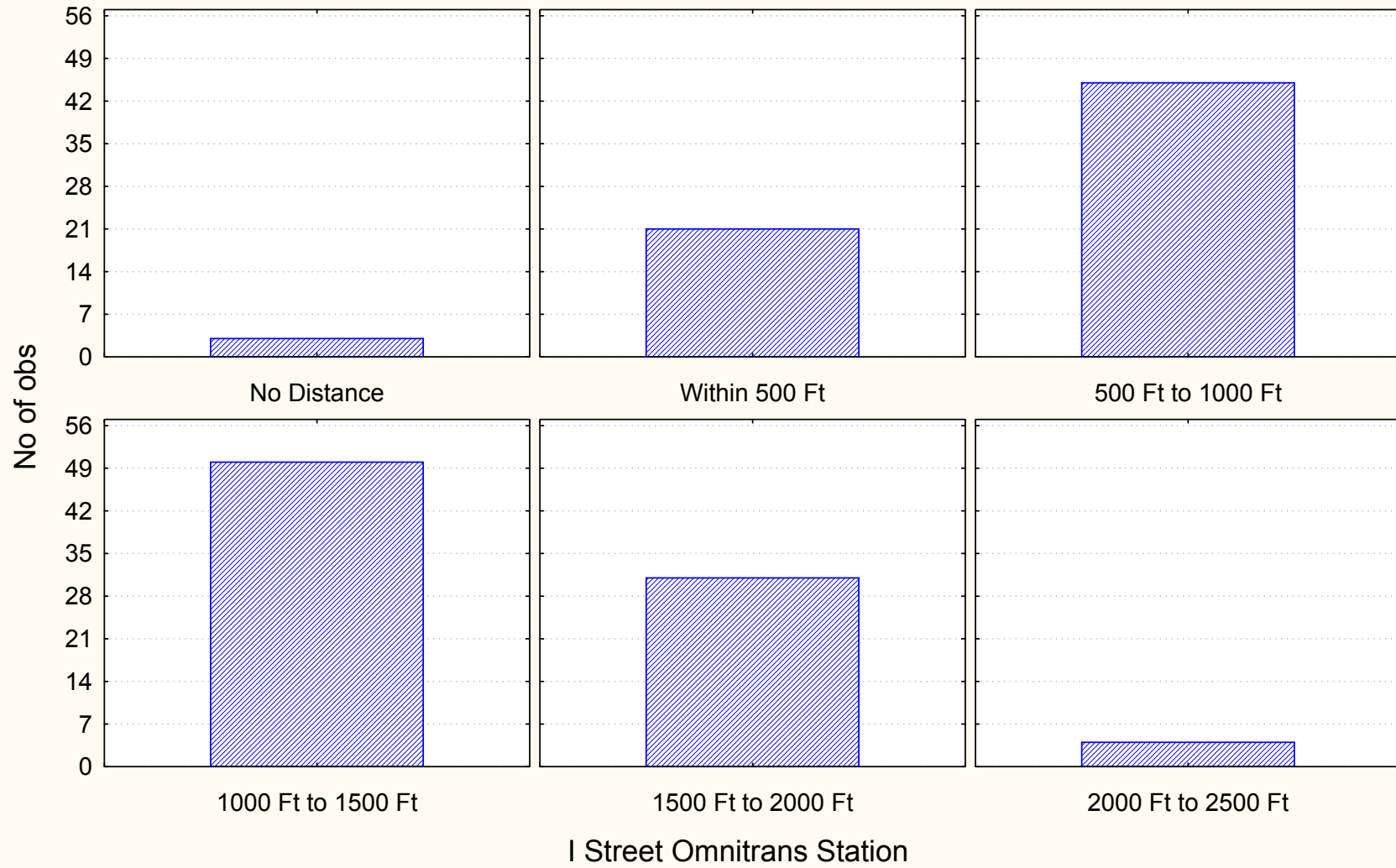
Have Activities Become Limited 5th Street Residents



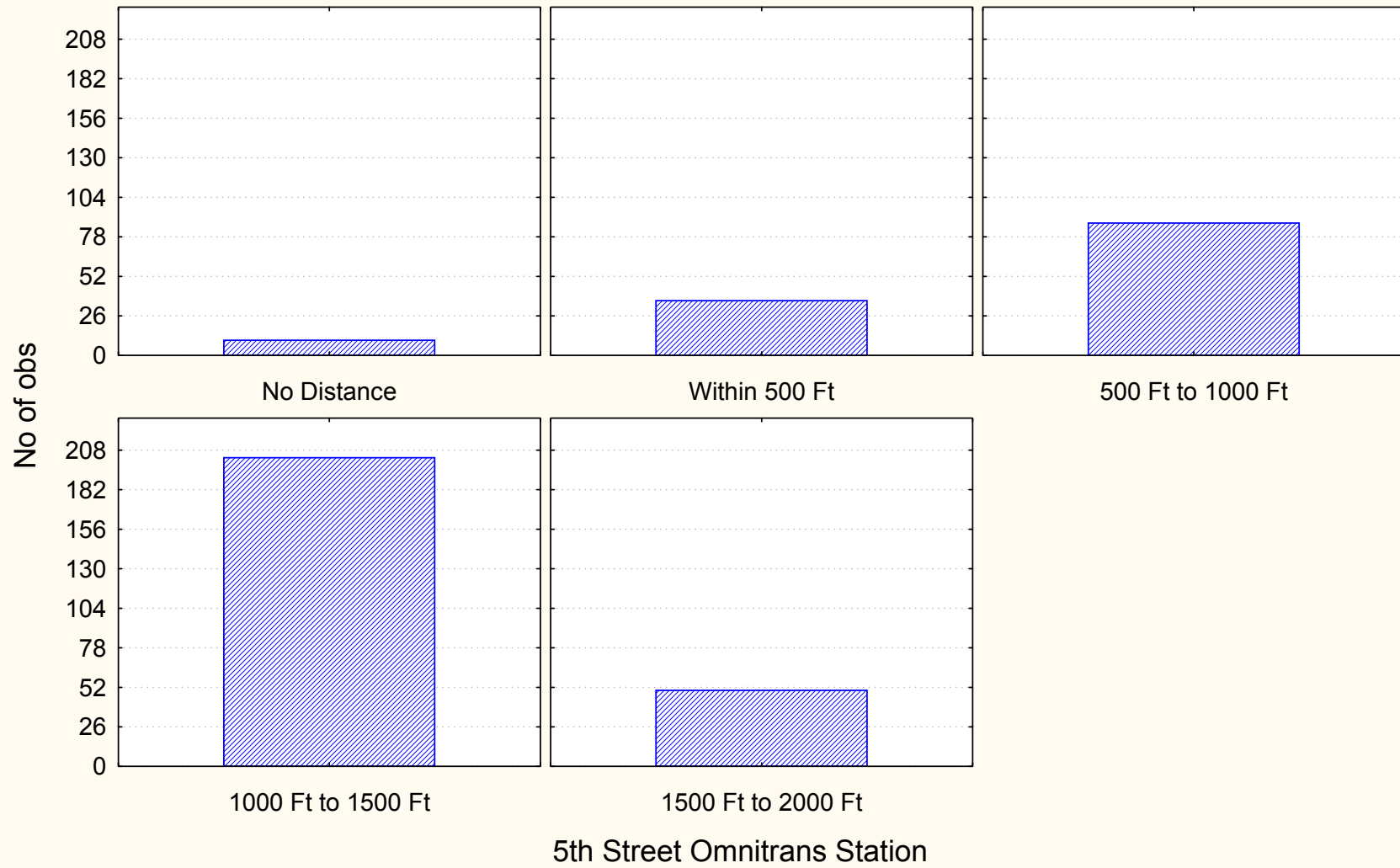
Number of Respondents Surveyed Near Montclair



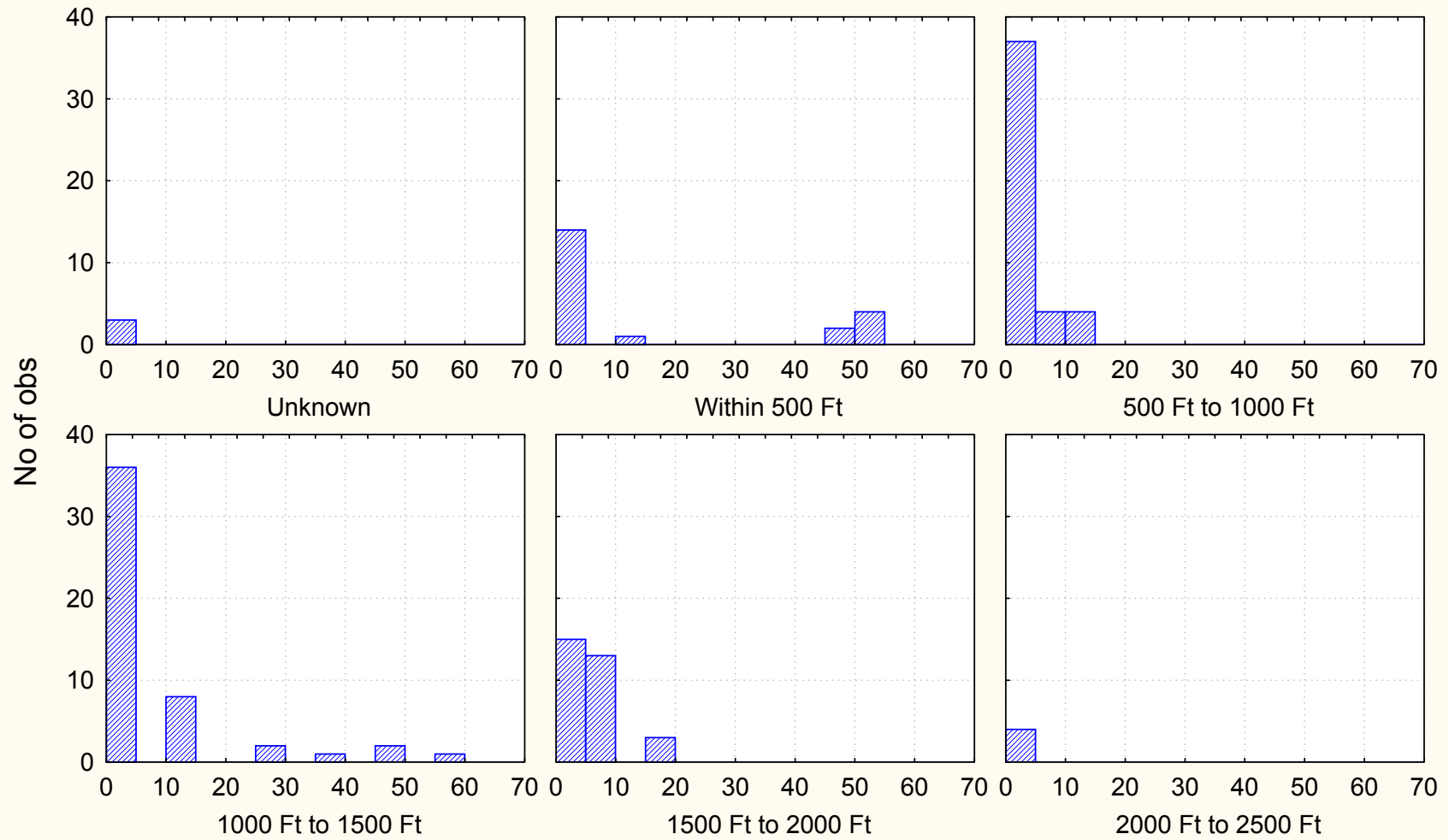
Number of Respondents Surveyed Near I Street



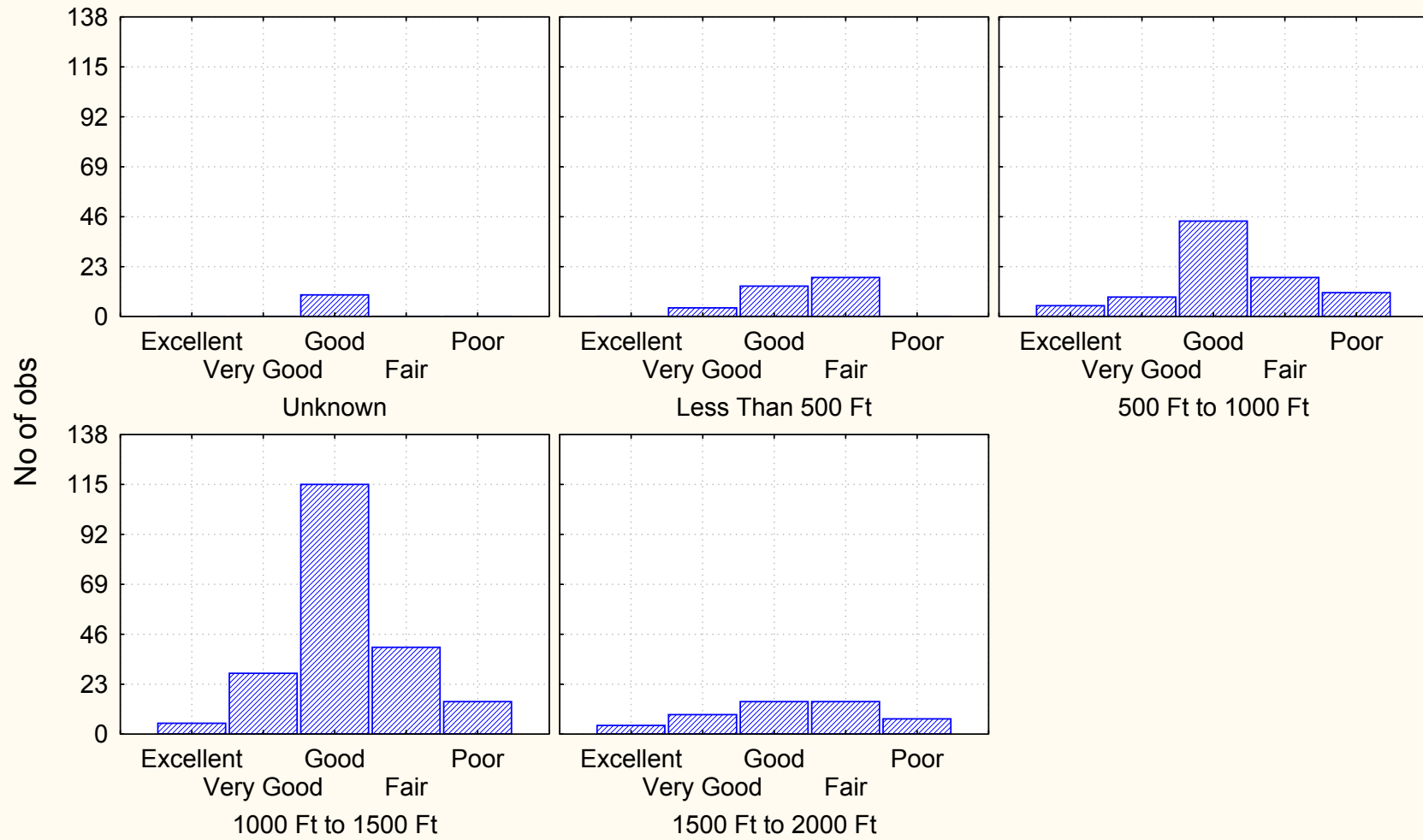
Number of Respondents Surveyed Near 5th Street



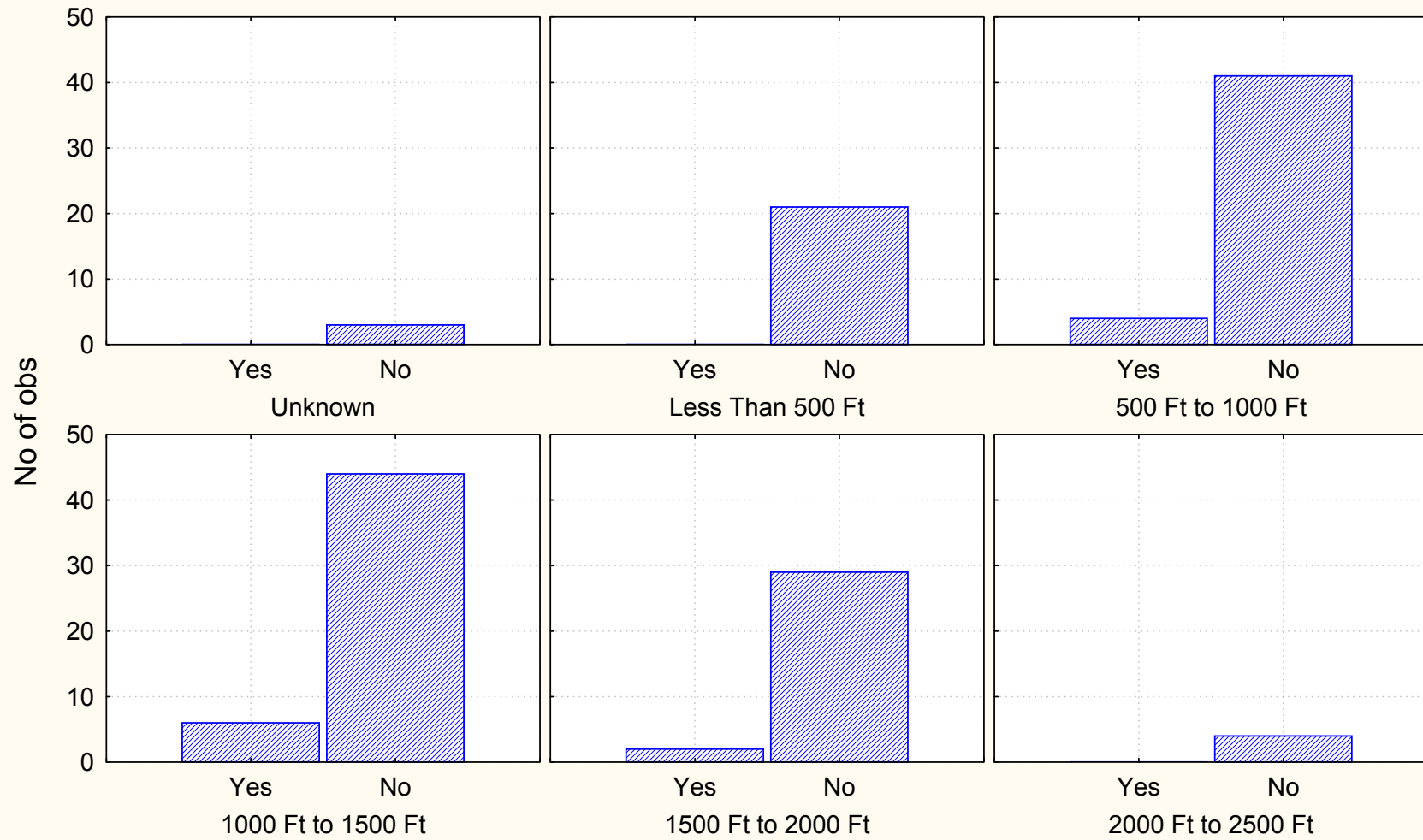
Years Living at Current Residence
Arrow Highway Residents



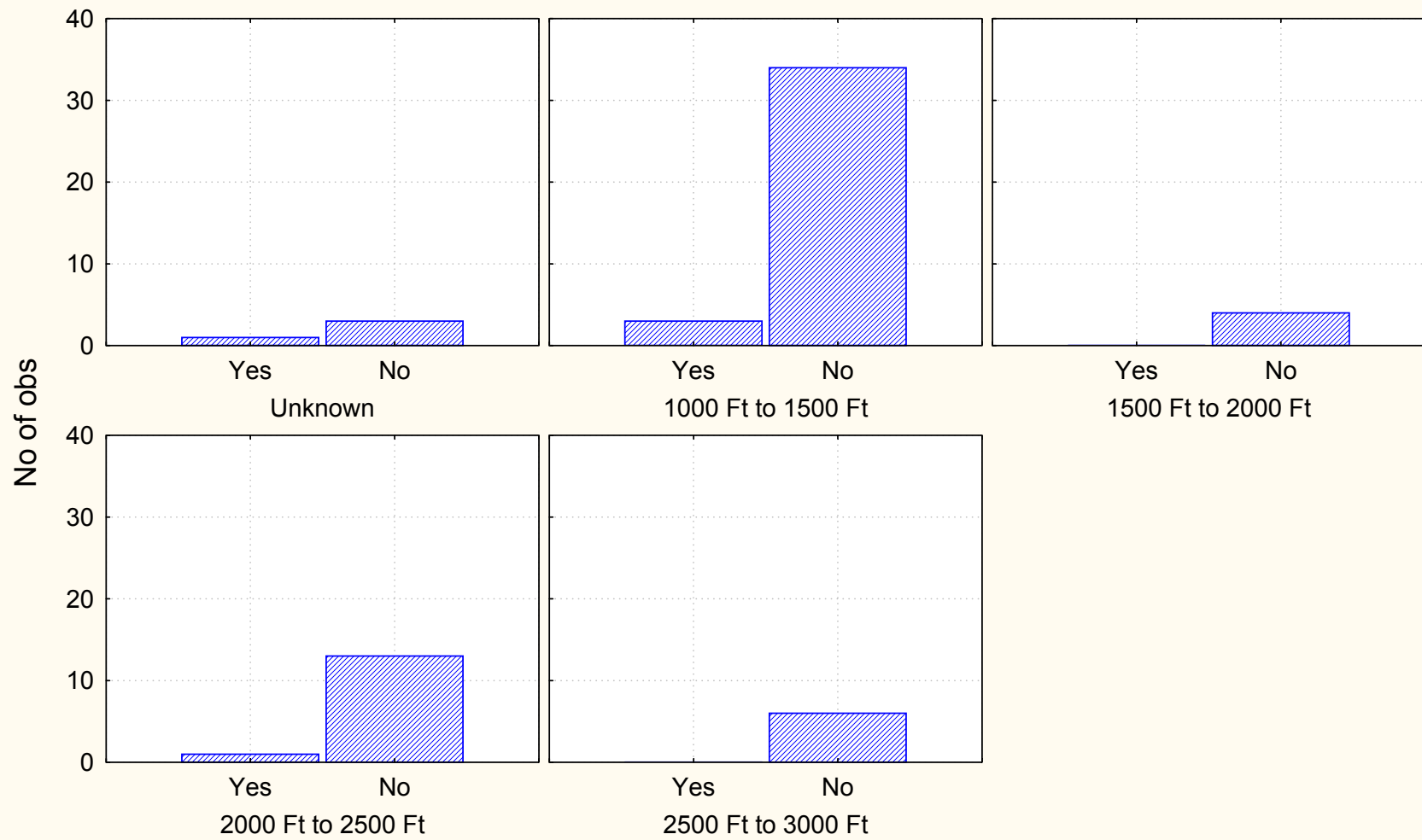
Self Reported Health Status 5th Street Residents



Self Report Asthma I Street Residents



Self Reported Asthma Montclair Residents



VISION (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	332	332	86.01	86.01
Yes	54	386	13.99	100.00
Missing	0	386	0.00	100.00

VISION YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	340	340	88.08	88.08
1.00000	5	345	1.30	89.38
2.00000	7	352	1.81	91.19
3.00000	6	358	1.55	92.75
4.00000	1	359	0.26	93.01
5.00000	4	363	1.04	94.04
7.00000	2	365	0.52	94.56
8.00000	3	368	0.78	95.34
9.00000	1	369	0.26	95.60
10.0000	5	374	1.30	96.89
13.0000	3	377	0.78	97.67
15.0000	1	378	0.26	97.93
20.0000	3	381	0.78	98.70
32.0000	1	382	0.26	98.96
40.0000	2	384	0.52	99.48
58.0000	1	385	0.26	99.74
61.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

VISION (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	60	60	15.54	15.54
Yes	5	65	1.30	16.84
Missing	321	386	83.16	100.00

VISION YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	60	60	15.54	15.54
4.00000	1	61	0.26	15.80
12.0000	2	63	0.52	16.32
17.0000	1	64	0.26	16.58
20.0000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

VISION (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	140	140	36.27	36.27
Yes	14	154	3.63	39.90
Missing	232	386	60.10	100.00

VISION YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	140	140	36.27	36.27
.500000	1	141	0.26	36.53
2.00000	1	142	0.26	36.79
5.00000	2	144	0.52	37.31
6.00000	2	146	0.52	37.82
10.0000	3	149	0.78	38.60
13.0000	1	150	0.26	38.86
14.0000	1	151	0.26	39.12
21.0000	1	152	0.26	39.38
30.0000	1	153	0.26	39.64
41.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

ARTHRITIS (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	361	361	93.52	93.52
Yes	25	386	6.48	100.00
Missing	0	386	0.00	100.00

ARTHRITIS YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	363	363	94.04	94.04
1.00000	2	365	0.52	94.56
2.00000	2	367	0.52	95.08
3.00000	2	369	0.52	95.60
4.00000	5	374	1.30	96.89
5.00000	3	377	0.78	97.67
10.0000	2	379	0.52	98.19
12.0000	1	380	0.26	98.45
13.0000	1	381	0.26	98.70
15.0000	2	383	0.52	99.22
18.0000	1	384	0.26	99.48
20.0000	1	385	0.26	99.74
30.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

ARTHRITIS (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

ARTHRITIS YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

ARTHRITIS (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	150	150	38.86	38.86
Yes	4	154	1.04	39.90
Missing	232	386	60.10	100.00

ARTHRITIS YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	150	150	38.86	38.86
.666667	1	151	0.26	39.12
2.00000	1	152	0.26	39.38
5.00000	1	153	0.26	39.64
10.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

HEARING (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	367	367	95.08	95.08
Yes	19	386	4.92	100.00
Missing	0	386	0.00	100.00

HEARING YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	370	370	95.85	95.85
1.00000	1	371	0.26	96.11
2.00000	1	372	0.26	96.37
3.00000	1	373	0.26	96.63
5.00000	2	375	0.52	97.15
10.0000	3	378	0.78	97.93
12.0000	1	379	0.26	98.19
15.0000	1	380	0.26	98.45
19.0000	1	381	0.26	98.70
20.0000	2	383	0.52	99.22
30.0000	2	385	0.52	99.74
70.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

HEARING (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

HEARING YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

HEARING (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	150	150	38.86	38.86
Yes	4	154	1.04	39.90
Missing	232	386	60.10	100.00

HEARING YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	150	150	38.86	38.86
.500000	1	151	0.26	39.12
5.00000	1	152	0.26	39.38
20.0000	2	154	0.52	39.90
Missing	232	386	60.10	100.00

BACK (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	365	365	94.56	94.56
Yes	21	386	5.44	100.00
Missing	0	386	0.00	100.00

BACK YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	367	367	95.08	95.08
.666670	1	368	0.26	95.34
2.00000	2	370	0.52	95.85
3.00000	1	371	0.26	96.11
4.00000	4	375	1.04	97.15
5.00000	2	377	0.52	97.67
7.00000	2	379	0.52	98.19
8.00000	1	380	0.26	98.45
10.0000	2	382	0.52	98.96
12.0000	1	383	0.26	99.22
20.0000	2	385	0.52	99.74
96.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

BACK (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

BACK YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

BACK (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	150	150	38.86	38.86
Yes	4	154	1.04	39.90
Missing	232	386	60.10	100.00

BACK YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	150	150	38.86	38.86
.500000	1	151	0.26	39.12
3.00000	1	152	0.26	39.38
5.00000	1	153	0.26	39.64
8.00000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

BONE (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	376	376	97.41	97.41
Yes	10	386	2.59	100.00
Missing	0	386	0.00	100.00

BONE YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	376	376	97.41	97.41
.250000	1	377	0.26	97.67
2.00000	4	381	1.04	98.70
3.00000	1	382	0.26	98.96
5.00000	2	384	0.52	99.48
10.0000	1	385	0.26	99.74
12.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

BONE (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

BONE YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

BONE (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

BONE YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
2.00000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

OTHER (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	383	383	99.22	99.22
Yes	3	386	0.78	100.00
Missing	0	386	0.00	100.00

OTHER YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	383	383	99.22	99.22
4.00000	2	385	0.52	99.74
10.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

OTHER (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

OTHER YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

OTHER (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

OTHER YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
4.00000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

HEART (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	375	375	97.15	97.15
Yes	11	386	2.85	100.00
Missing	0	386	0.00	100.00

HEART YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	375	375	97.15	97.15
1.00000	1	376	0.26	97.41
3.00000	1	377	0.26	97.67
4.00000	3	380	0.78	98.45
5.00000	2	382	0.52	98.96
9.00000	1	383	0.26	99.22
13.0000	1	384	0.26	99.48
30.0000	1	385	0.26	99.74
40.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

HEART (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

HEART YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
8.00000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

HEART (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

HEART YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

STROKE (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	382	382	98.96	98.96
Yes	4	386	1.04	100.00
Missing	0	386	0.00	100.00

STROKE YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	382	382	98.96	98.96
5.00000	3	385	0.78	99.74
7.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

STROKE (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

STROKE YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

STROKE (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

STROKE YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

HYPERENSION (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	353	353	91.45	91.45
Yes	33	386	8.55	100.00
Missing	0	386	0.00	100.00

HYPERENSION YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	353	353	91.45	91.45
.666670	1	354	0.26	91.71
1.00000	1	355	0.26	91.97
2.00000	2	357	0.52	92.49
3.00000	1	358	0.26	92.75
4.00000	5	363	1.30	94.04
5.00000	5	368	1.30	95.34
7.00000	1	369	0.26	95.60
8.00000	3	372	0.78	96.37
9.00000	4	376	1.04	97.41
10.0000	2	378	0.52	97.93
11.0000	1	379	0.26	98.19
12.0000	1	380	0.26	98.45
15.0000	4	384	1.04	99.48
20.0000	1	385	0.26	99.74
40.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

HYPERENSION (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	62	62	16.06	16.06
Yes	3	65	0.78	16.84
Missing	321	386	83.16	100.00

HYPERENSION YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	62	62	16.06	16.06
2.00000	1	63	0.26	16.32
3.00000	1	64	0.26	16.58
10.0000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

HYPERENSION (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	144	144	37.31	37.31
Yes	10	154	2.59	39.90
Missing	232	386	60.10	100.00

HYPERENSION YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	144	144	37.31	37.31
2.00000	1	145	0.26	37.56
5.00000	3	148	0.78	38.34
6.00000	1	149	0.26	38.60
7.00000	1	150	0.26	38.86
10.0000	3	153	0.78	39.64
26.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

DIABETES (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	354	354	91.71	91.71
Yes	32	386	8.29	100.00
Missing	0	386	0.00	100.00

DIABETES YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	358	358	92.75	92.75
.250000	1	359	0.26	93.01
1.00000	3	362	0.78	93.78
1.50000	1	363	0.26	94.04
3.00000	4	367	1.04	95.08
4.00000	2	369	0.52	95.60
5.00000	6	375	1.55	97.15
7.00000	2	377	0.52	97.67
8.00000	1	378	0.26	97.93
10.0000	1	379	0.26	98.19
11.0000	1	380	0.26	98.45
13.0000	1	381	0.26	98.70
15.0000	1	382	0.26	98.96
17.0000	1	383	0.26	99.22
20.0000	3	386	0.78	100.00
Missing	0	386	0.00	100.00

DIABETES (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	61	61	15.80	15.80
Yes	4	65	1.04	16.84
Missing	321	386	83.16	100.00

DIABETES YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	61	61	15.80	15.80
4.00000	2	63	0.52	16.32
22.0000	1	64	0.26	16.58
32.0000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

DIABETES (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	150	150	38.86	38.86
Yes	4	154	1.04	39.90
Missing	232	386	60.10	100.00

DIABETES YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	150	150	38.86	38.86
4.00000	1	151	0.26	39.12
6.00000	1	152	0.26	39.38
10.0000	2	154	0.52	39.90
Missing	232	386	60.10	100.00

LUNG (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	351	351	90.93	90.93
Yes	35	386	9.07	100.00
Missing	0	386	0.00	100.00

LUNG YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	356	356	92.23	92.23
1.00000	10	366	2.59	94.82
2.00000	3	369	0.78	95.60
3.00000	3	372	0.78	96.37
4.00000	7	379	1.81	98.19
5.00000	2	381	0.52	98.70
6.00000	1	382	0.26	98.96
9.00000	1	383	0.26	99.22
10.0000	3	386	0.78	100.00
Missing	0	386	0.00	100.00

LUNG (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

LUNG YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

LUNG (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	151	151	39.12	39.12
Yes	3	154	0.78	39.90
Missing	232	386	60.10	100.00

LUNG YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	151	151	39.12	39.12
3.00000	2	153	0.52	39.64
14.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

CANCER (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	380	380	98.45	98.45
Yes	6	386	1.55	100.00
Missing	0	386	0.00	100.00

CANCER YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	380	380	98.45	98.45
1.00000	2	382	0.52	98.96
5.00000	1	383	0.26	99.22
7.00000	1	384	0.26	99.48
10.0000	1	385	0.26	99.74
11.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

CANCER (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

CANCER YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
1.00000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

CANCER (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

CANCER YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
14.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

WEIGHT (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	372	372	96.37	96.37
Yes	14	386	3.63	100.00
Missing	0	386	0.00	100.00

WEIGHT YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	374	374	96.89	96.89
1.00000	1	375	0.26	97.15
3.00000	1	376	0.26	97.41
4.00000	1	377	0.26	97.67
7.00000	3	380	0.78	98.45
9.00000	1	381	0.26	98.70
10.0000	1	382	0.26	98.96
12.0000	1	383	0.26	99.22
25.0000	1	384	0.26	99.48
50.0000	2	386	0.52	100.00
Missing	0	386	0.00	100.00

WEIGHT (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

WEIGHT YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
12.0000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

WEIGHT (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	152	152	39.38	39.38
Yes	2	154	0.52	39.90
Missing	232	386	60.10	100.00

WEIGHT YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	152	152	39.38	39.38
10.0000	1	153	0.26	39.64
45.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

KIDNEY (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	377	377	97.67	97.67
Yes	9	386	2.33	100.00
Missing	0	386	0.00	100.00

KIDNEY YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	377	377	97.67	97.67
2.00000	5	382	1.30	98.96
4.00000	2	384	0.52	99.48
5.00000	1	385	0.26	99.74
9.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

KIDNEY (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

KIDNEY YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
2.00000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

KIDNEY (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

KIDNEY YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

CIRCULATION (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	370	370	95.85	95.85
Yes	16	386	4.15	100.00
Missing	0	386	0.00	100.00

CIRCULATION YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	370	370	95.85	95.85
1.00000	1	371	0.26	96.11
3.00000	2	373	0.52	96.63
4.00000	3	376	0.78	97.41
5.00000	3	379	0.78	98.19
6.00000	2	381	0.52	98.70
9.00000	1	382	0.26	98.96
10.0000	2	384	0.52	99.48
11.0000	1	385	0.26	99.74
20.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

CIRCULATION (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

CIRCULATION YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

CIRCULATION (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

CIRCULATION YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

TUMOR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	380	380	98.45	98.45
Yes	6	386	1.55	100.00
Missing	0	386	0.00	100.00

TUMOR YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	380	380	98.45	98.45
.250000	1	381	0.26	98.70
1.00000	1	382	0.26	98.96
4.00000	1	383	0.26	99.22
5.00000	1	384	0.26	99.48
9.00000	2	386	0.52	100.00
Missing	0	386	0.00	100.00

TUMOR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

TUMOR YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

TUMOR (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

TUMOR YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

LUPUS (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	382	382	98.96	98.96
Yes	4	386	1.04	100.00
Missing	0	386	0.00	100.00

LUPUS YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
1.00000	1	1	0.26	0.26
5.00000	1	2	0.26	0.52
9.00000	1	3	0.26	0.78
30.0000	1	4	0.26	1.04
YEARS	1	5	0.26	1.30
Missing	381	386	98.70	100.00

LUPUS (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

LUPUS YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

LUPUS (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

LUPUS YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

TENDONITIS (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	383	383	99.22	99.22
Yes	3	386	0.78	100.00
Missing	0	386	0.00	100.00

TENDONITIS YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	383	383	99.22	99.22
2.00000	1	384	0.26	99.48
3.00000	1	385	0.26	99.74
5.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

TENDONITIS (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

TENDONITIS YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

TENDONITIS (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

TENDONITIS YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
10.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

SEIZURE (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	384	384	99.48	99.48
Yes	2	386	0.52	100.00
Missing	0	386	0.00	100.00

SEIZURE YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	384	384	99.48	99.48
3.00000	1	385	0.26	99.74
9.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

SEIZURE (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

SEIZURE YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

SEIZURE (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	152	152	39.38	39.38
Yes	2	154	0.52	39.90
Missing	232	386	60.10	100.00

SEIZURE YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	152	152	39.38	39.38
4.00000	2	154	0.52	39.90
Missing	232	386	60.10	100.00

MULTIPLE SCLEROSIS (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	386	386	100.00	100.00
Missing	0	386	0.00	100.00

MULTIPLE SCLEROSIS YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	386	386	100.00	100.00
Missing	0	386	0.00	100.00

MULTIPLE SCLEROSIS (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

MULTIPLE SCLEROSIS YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

MULTIPLE SCLEROSIS (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

MULTIPLE SCLEROSIS YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

POLIO (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	385	385	99.74	99.74
Yes	1	386	0.26	100.00
Missing	0	386	0.00	100.00

POLIO YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	385	385	99.74	99.74
20.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

POLIO (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

POLIO YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

POLIO (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

POLIO YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

PARKINSON (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	383	383	99.22	99.22
Yes	3	386	0.78	100.00
Missing	0	386	0.00	100.00

PARKINSON YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	383	383	99.22	99.22
3.00000	1	384	0.26	99.48
5.00000	2	386	0.52	100.00
Missing	0	386	0.00	100.00

PARKINSON (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

PARKINSON YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

PARKINSON (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	154	154	39.90	39.90
Missing	232	386	60.10	100.00

PARKINSON YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	154	154	39.90	39.90
Missing	232	386	60.10	100.00

CARPAL TUNNEL (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	377	377	97.67	97.67
Yes	9	386	2.33	100.00
Missing	0	386	0.00	100.00

CARPAL TUNNEL YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	377	377	97.67	97.67
1.00000	2	379	0.52	98.19
2.00000	3	382	0.78	98.96
3.00000	1	383	0.26	99.22
4.00000	1	384	0.26	99.48
19.0000	1	385	0.26	99.74
20.00	1	386	0.26	100.00
Missing	0	386	0.00	100.00

CARPAL TUNNEL (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

CARPAL TUNNEL YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
6.00000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

CARPAL TUNNEL (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

CARPAL TUNNEL YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

HERNIA (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	382	382	98.96	98.96
Yes	4	386	1.04	100.00
Missing	0	386	0.00	100.00

HERNIA YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	382	382	98.96	98.96
5.00000	1	383	0.26	99.22
10.0000	2	385	0.52	99.74
15.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

HERNIA (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

HERNIA YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

HERNIA (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	150	150	38.86	38.86
Yes	4	154	1.04	39.90
Missing	232	386	60.10	100.00

HERNIA YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	150	150	38.86	38.86
1.00000	1	151	0.26	39.12
3.00000	1	152	0.26	39.38
8.00000	1	153	0.26	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

ULCER (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	382	382	98.96	98.96
Yes	4	386	1.04	100.00
Missing	0	386	0.00	100.00

ULCER YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	382	382	98.96	98.96
1.00000	1	383	0.26	99.22
3.00000	1	384	0.26	99.48
4.00000	1	385	0.26	99.74
5.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

ULCER (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	65	65	16.84	16.84
Missing	321	386	83.16	100.00

ULCER YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	65	65	16.84	16.84
Missing	321	386	83.16	100.00

ULCER (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	148	148	38.34	38.34
Yes	6	154	1.55	39.90
Missing	232	386	60.10	100.00

ULCER YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	148	148	38.34	38.34
1.00000	1	149	0.26	38.60
2.00000	1	150	0.26	38.86
10.0000	1	151	0.26	39.12
15.0000	1	152	0.26	39.38
17.0000	1	153	0.26	39.64
20.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

GRAVES DISEASE (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	380	380	98.45	98.45
Yes	6	386	1.55	100.00
Missing	0	386	0.00	100.00

GRAVES DISEASE YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	380	380	98.45	98.45
4.00000	2	382	0.52	98.96
5.00000	1	383	0.26	99.22
6.00000	2	385	0.52	99.74
9.00000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

GRAVES DISEASE (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

GRAVES DISEASE YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
5.00000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

GRAVES DISEASE (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	153	153	39.64	39.64
Yes	1	154	0.26	39.90
Missing	232	386	60.10	100.00

GRAVES DISEASE YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	153	153	39.64	39.64
10.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

MIGRAINE (5th Street Station)

	Count	Cumulative Count	Percent	Percent
No	342	342	88.60	88.60
Yes	44	386	11.40	100.00
Missing	0	386	0.00	100.00

MIGRAINE YR (5th Street Station)

	Count	Cumulative Count	Percent	Percent
0.00	342	342	88.60	88.60
.500000	1	343	0.26	88.86
1.00000	5	348	1.30	90.16
2.00000	6	354	1.55	91.71
3.00000	6	360	1.55	93.26
4.00000	13	373	3.37	96.63
5.00000	5	378	1.30	97.93
6.00000	2	380	0.52	98.45
9.00000	1	381	0.26	98.70
10.0000	2	383	0.52	99.22
20.0000	1	384	0.26	99.48
30.0000	1	385	0.26	99.74
40.0000	1	386	0.26	100.00
Missing	0	386	0.00	100.00

MIGRAINE (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
No	64	64	16.58	16.58
Yes	1	65	0.26	16.84
Missing	321	386	83.16	100.00

MIGRAINE YR (Arrow Highway Station)

	Count	Cumulative Count	Percent	Percent
0	64	64	16.58	16.58
30.0000	1	65	0.26	16.84
Missing	321	386	83.16	100.00

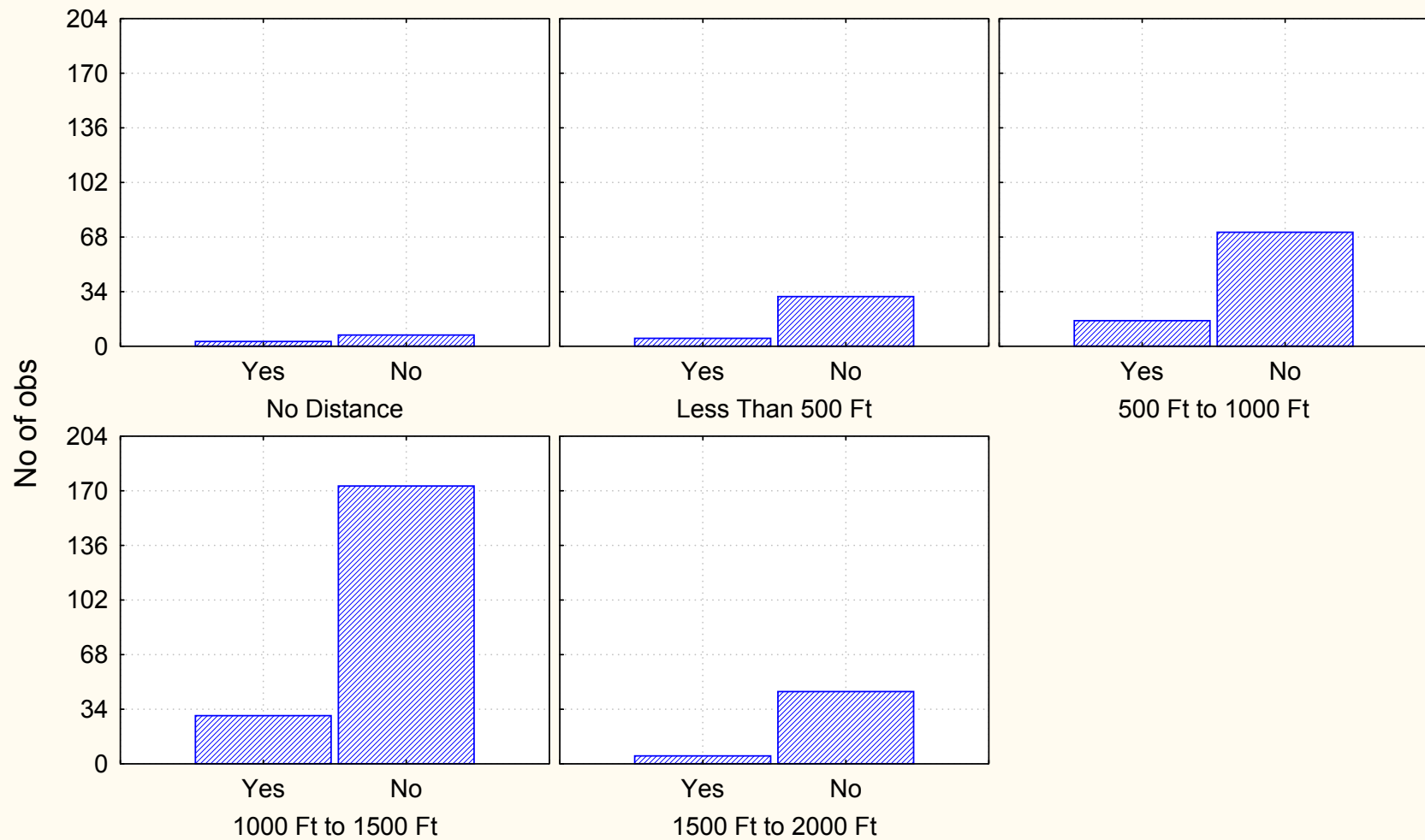
MIGRAINE (I Street Station)

	Count	Cumulative Count	Percent	Percent
No	145	145	37.56	37.56
Yes	9	154	2.33	39.90
Missing	232	386	60.10	100.00

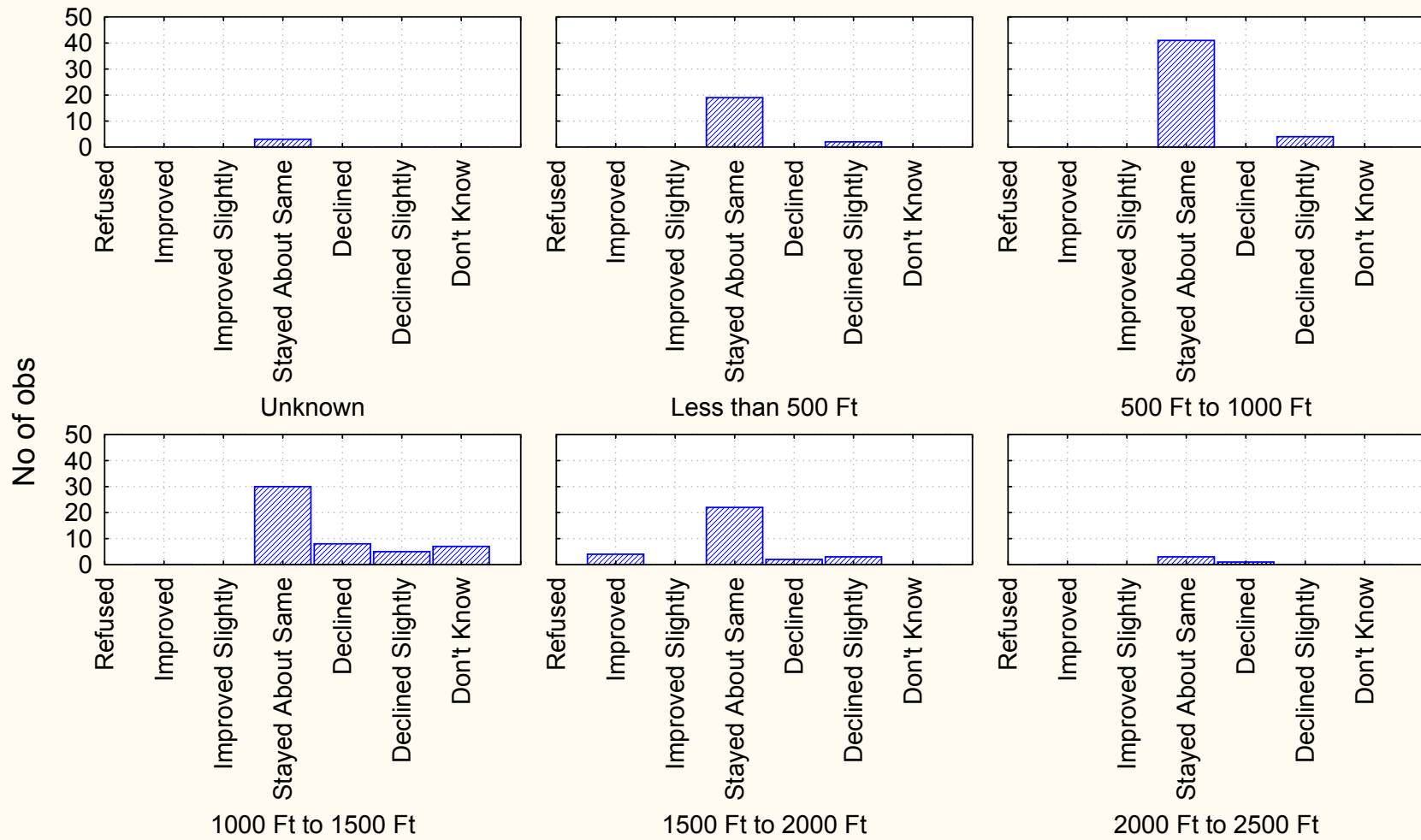
MIGRAINE YR (I Street Station)

	Count	Cumulative Count	Percent	Percent
0	145	145	37.56	37.56
.057000	1	146	0.26	37.82
.166667	1	147	0.26	38.08
2.00000	3	150	0.78	38.86
5.00000	1	151	0.26	39.12
6.00000	1	152	0.26	39.38
10.0000	1	153	0.26	39.64
52.0000	1	154	0.26	39.90
Missing	232	386	60.10	100.00

Self Reported Asthma 5th Street Residents

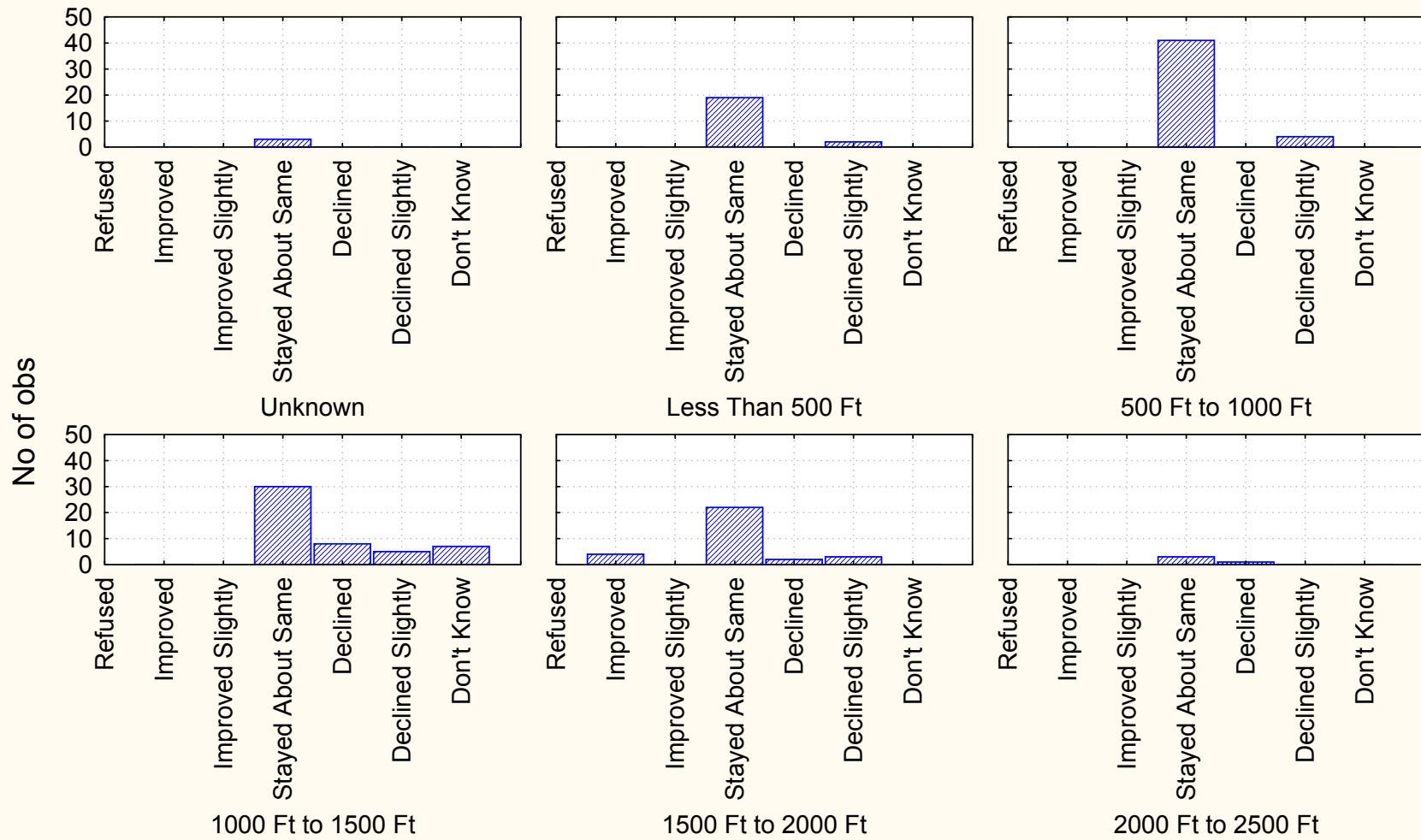


Self Reported 5 Year Health Status Arrow Highway Residents

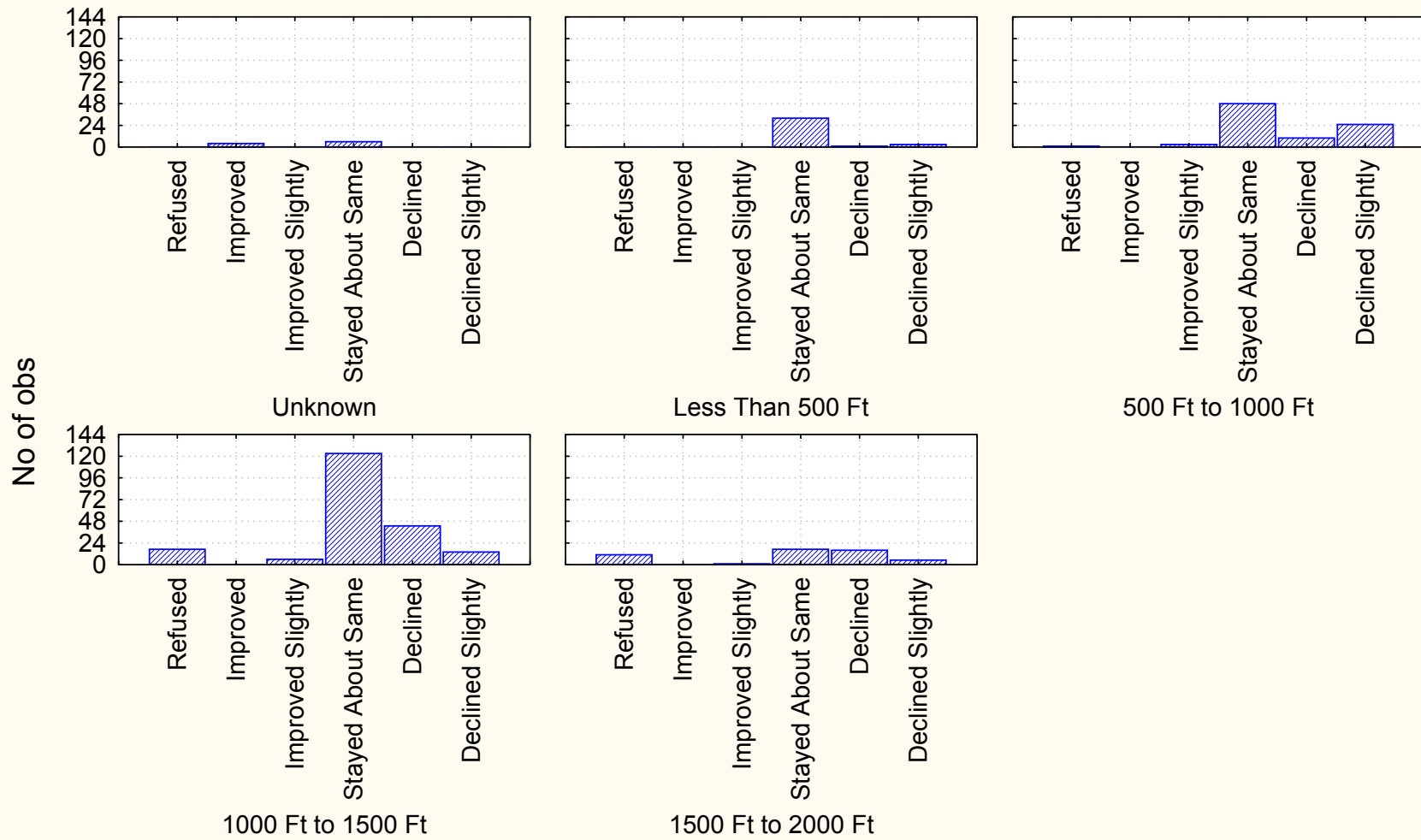


Self Reported 5 Year Health Status

I Street Residents



Self Reported 5 Year Health Status 5th Street Residents

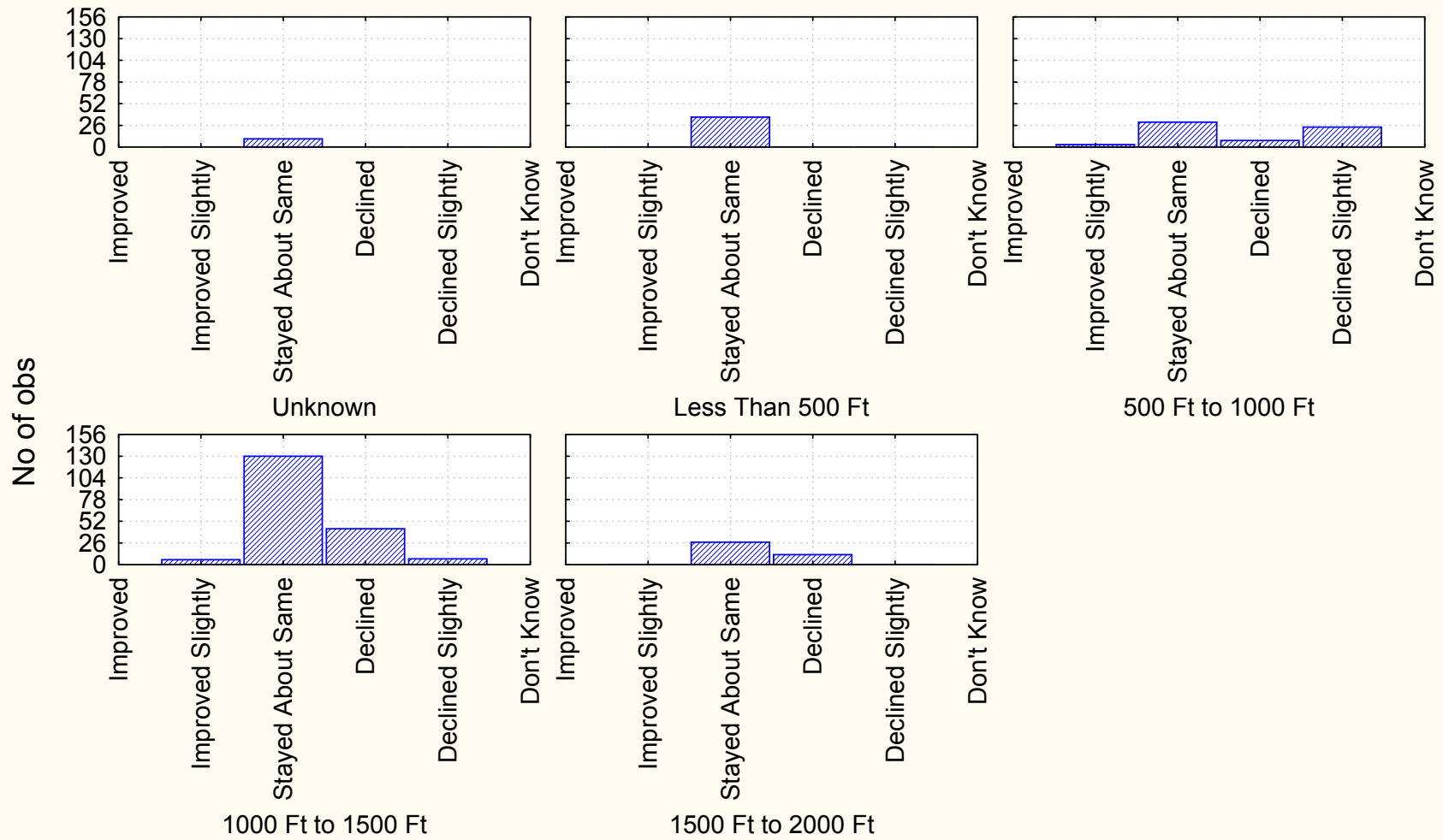


Self Reported 3 Year Health Status

I Street Residents

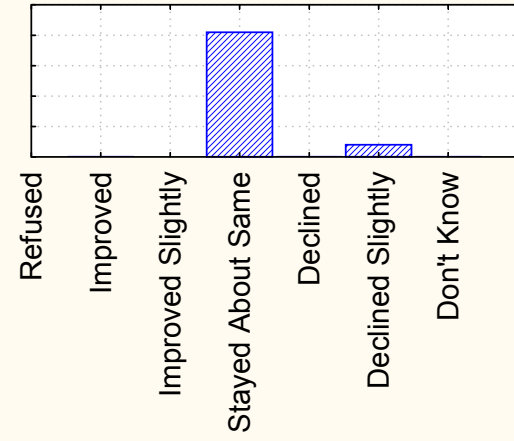
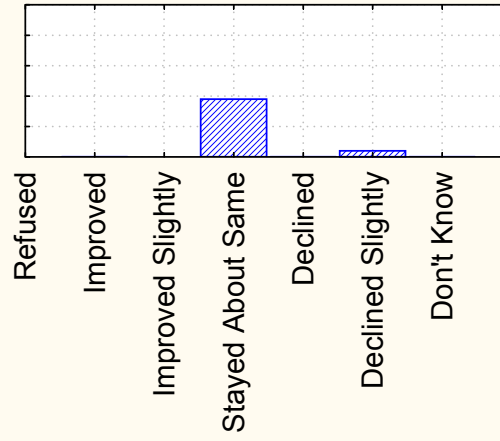
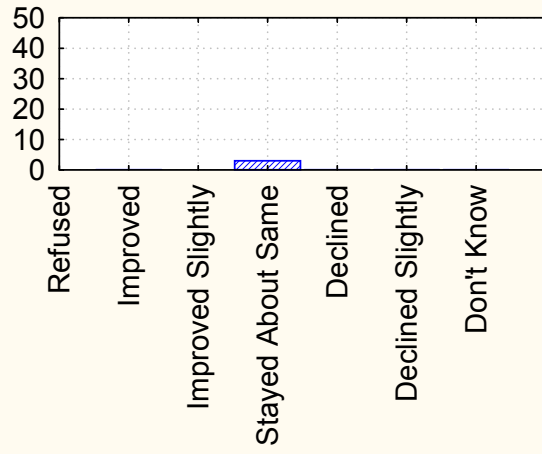


Self Reported 3 Year Health Status 5th Street Residents



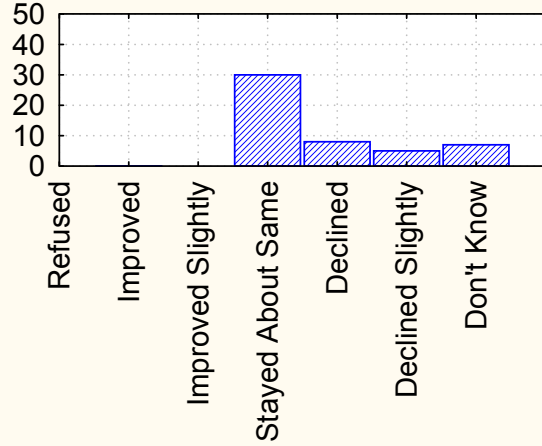
Self Reported 1 Year Health Status

Arrow Highway

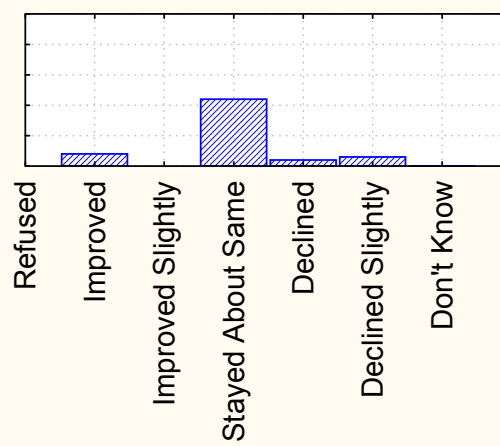


No of obs

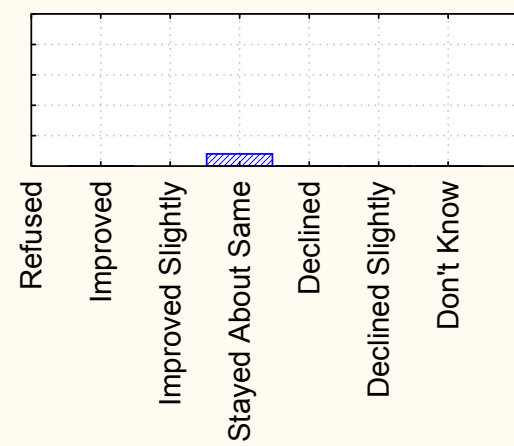
Unknown



Less Than 500 Ft



500 Ft to 1000 Ft



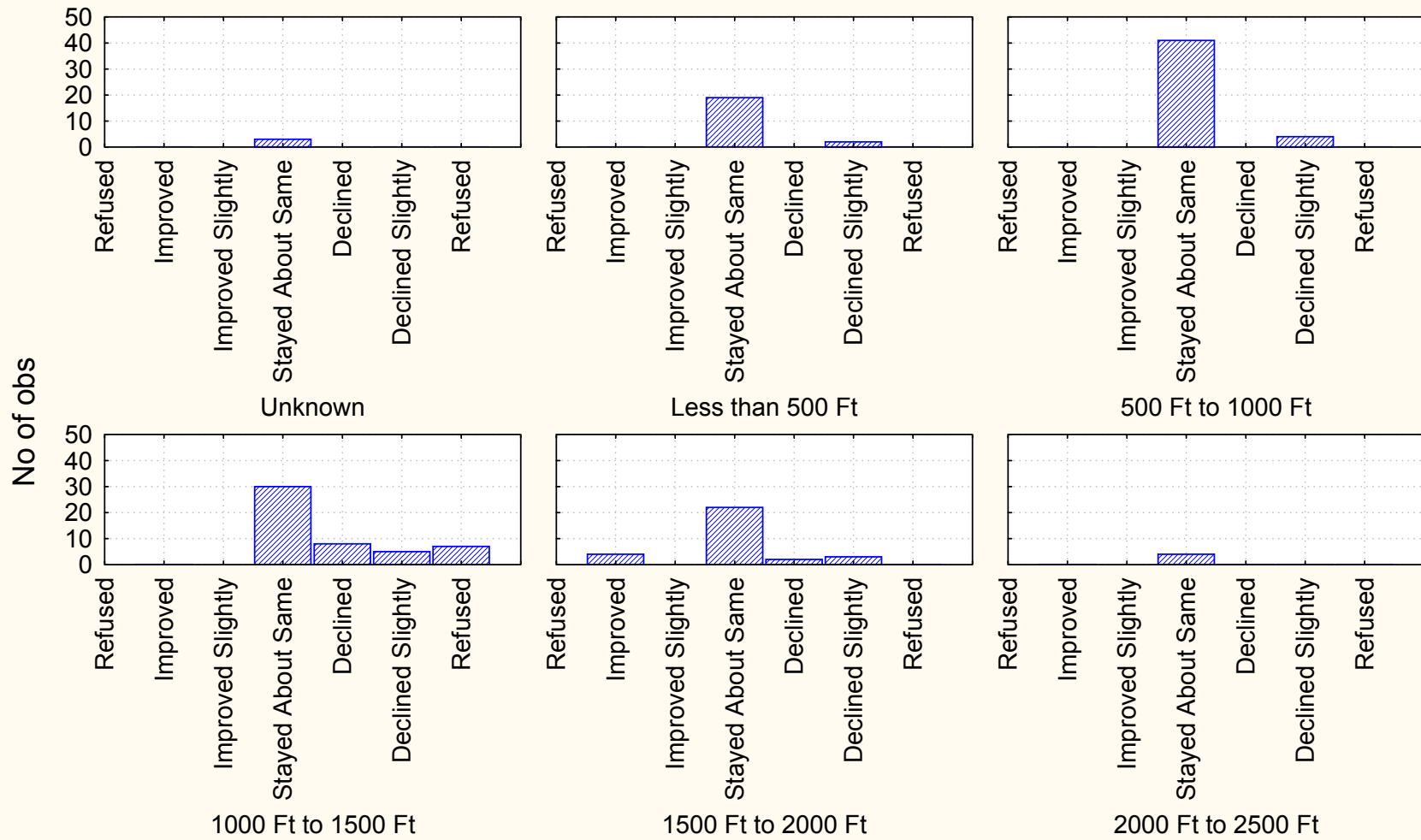
1000 Ft to 1500 Ft

1500 Ft to 2000 Ft

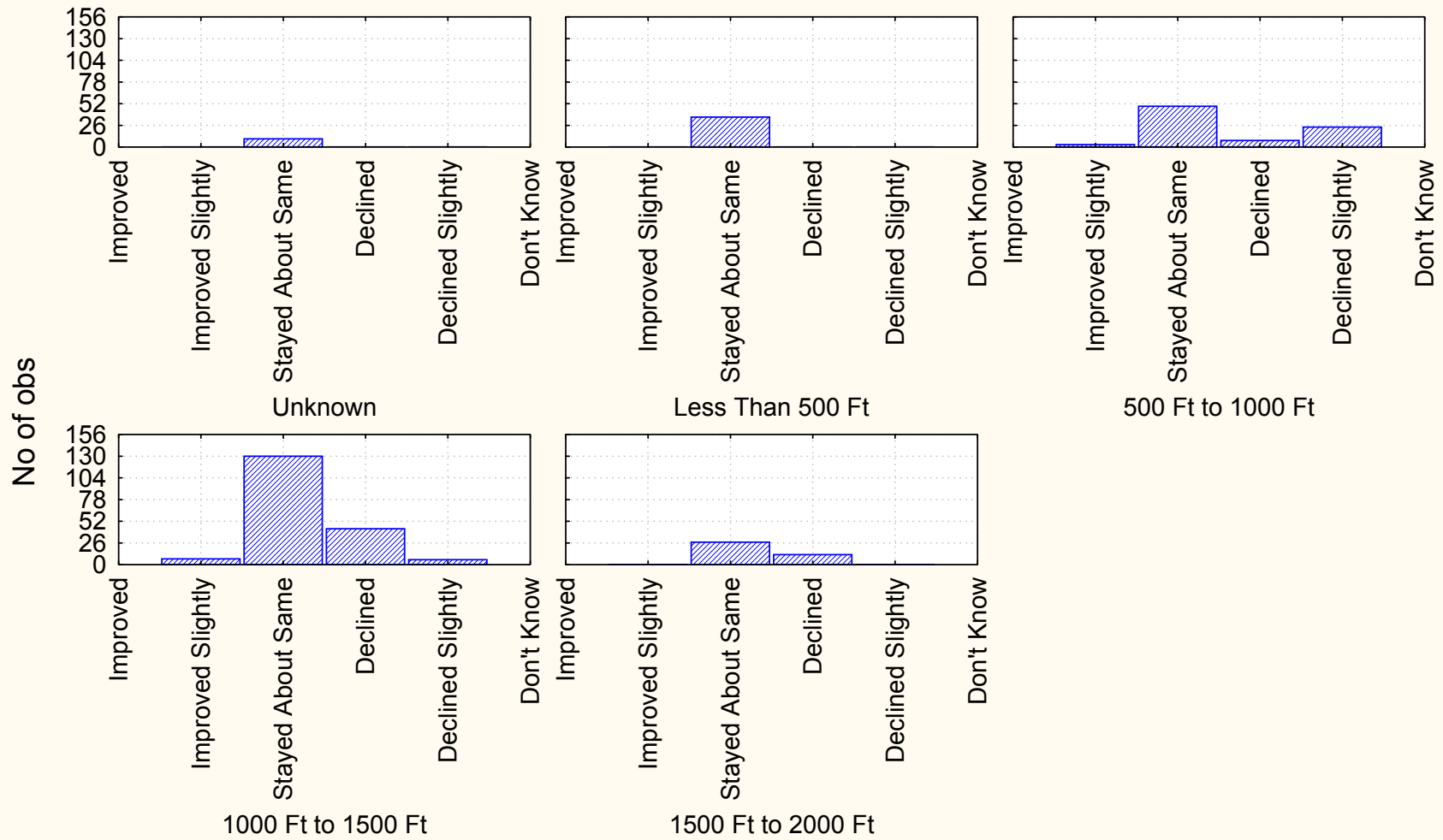
2000 Ft to 2500 Ft

Self Reported 1 Year Health Status

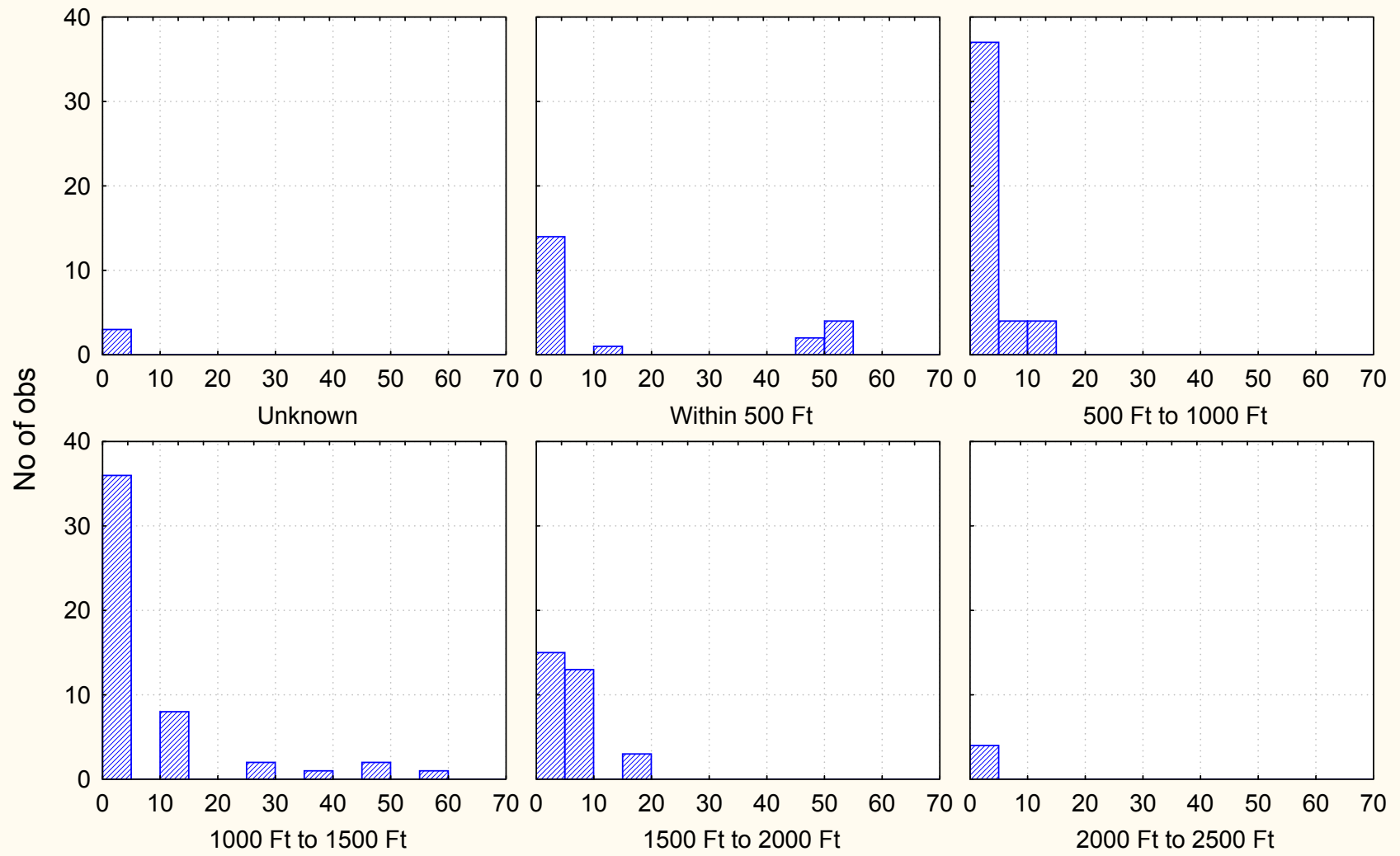
I Street Residents



Self Reported 1 Year Health Status 5th Street Residents



Years Living at Current Residence



Statistical Analyses

The correlation coefficient (r) represents the linear relationship between two variables. If the correlation coefficient is squared, then the resulting value (r^2 , the coefficient of determination) will represent the proportion of common variation in the two variables (i.e., the "strength" or "magnitude" of the relationship). In order to evaluate the correlation between variables, it is important to know this "magnitude" or "strength" as well as the significance of the correlation coefficients are significant.

A test is available that will evaluate the significance of differences between two correlation coefficients in two samples. The outcome of this test depends not only on the size of the raw difference between the two coefficients but also on the size of the samples and on the size of the coefficients themselves. Consistent with the previously discussed principle, the larger the sample size, the smaller the effect that can be proven significant in that sample. In general, due to the fact that the reliability of the correlation coefficient increases with its absolute value, relatively small differences between large correlation coefficients can be significant. For example, a difference of .10 between two correlations may not be significant if the two coefficients are .15 and .25, although in the same sample, the same difference of .10 can be highly significant if the two coefficients are .80 and .90.

All data were analyzed using STATISTICA (Statsoft Inc., Tulsa KA). Pearson correlation coefficients and p-values were determined relating distance from three Omnitrans facilities, individuals age, and various health criteria. Health was scored on a scale from 1 (self reported very healthy) to five (self reported very unhealthy) (Tables). The most widely-used type of correlation coefficient is Pearson r (Pearson, 1896). The correlation coefficient determines the extent to which values of two variables are "proportional" to each other. The value of the correlation (i.e., correlation coefficient) does not depend on the specific measurement units used; for example, the correlation between height and weight will be identical regardless of whether inches and pounds, or centimeters and kilograms are used as measurement units. Proportional means linearly related; that is, the correlation is high if it can be approximated by a straight line (sloped upwards or downwards). This line is called the regression line or least squares line, because it is determined such that the sum of the squared distances of all the data points from the line is the lowest possible. Pearson correlation assumes that the two variables are measured on at least interval scales. The Pearson equation for determining r is below:

$$r = \frac{\sum_{i1} (Y_{i1} - \bar{Y}_1) * (Y_{i2} - \bar{Y}_2)}{[\sum_{i1} (Y_{i1} - \bar{Y}_1)^2 * \sum_{i2} (Y_{i2} - \bar{Y}_2)^2]^{(1/2)}}$$

Correlations Introductory Overview - How to Interpret the Values of Correlations

As mentioned before, the correlation coefficient (r) represents the linear relationship between two variables. If the correlation coefficient is squared, then the resulting value (r², the coefficient of determination) will represent the proportion of common variation in the two variables (i.e., the "strength" or "magnitude" of the relationship). In order to evaluate the correlation between variables, it is important to know this "magnitude" or "strength" as well as the significance of the correlation. coefficients are Significant.

A test is available that will evaluate the significance of differences between two correlation coefficients in two samples (see the Probability calculator). The outcome of this test depends not only on the size of the raw difference between the two coefficients but also on the size of the samples and on the size of the coefficients themselves. Consistent with the previously discussed principle, the larger the sample size, the smaller the effect that can be proven significant in that sample. In general, due to the fact that the reliability of the correlation coefficient increases with its absolute value, relatively small differences between large correlation coefficients can be significant. For example, a difference of .10 between two correlations may not be significant if the two coefficients are .15 and .25, although in the same sample, the same difference of .10 can be highly significant if the two coefficients are .80 and .90.

Pearson (1896). Regression, Heredity and Panmixia. Philosophical Transactions in the Royal Society of London. Series A 187 253-318.

APPENDIX I

SCADMD COMMENTS ON DRAFT REPORT

**Comments by South Coast Air Quality Management District on
Omnitrans Public Health Survey and Baseline HRA
Nov 19, 2003**

Prepared by Komex H2O Science
Pursuant to SB 1927 (Soto)

The purpose of this report is to provide a public health assessment in accordance with the requirement of Senate Bill 1927. This bill requires a report on the environmental and public health impacts of transit bus fueling stations operated by Omnitrans.

This report focuses on current operations at the facility and includes the following analyses:

- An analysis of nurses' logs, covering a three-month period, for an elementary school near one of the Omnitrans facilities, and another school located about 6.5 miles away.
- A survey of businesses near the Omnitrans facilities and emissions estimates for air pollutants from some of these facilities; a dispersion modeling of the emissions from the businesses and from the Omnitrans facilities; and an estimate of health risks to selected receptors from these emissions.
- A survey relating to the health status of residents living near the facilities.

Analysis of School Logs

A tabular presentation of summary data on descriptive statistics would help the reader to understand the findings. In addition to logs from the Ramona Alessandro School, which is near one of the Omnitrans facilities (Metro Station), logs from the Thompson School were analyzed for comparison. It is not clear what the rationale was for selecting the second school. There appears to be a difference in the demographics of the students. Are these differences significant regarding interpreting the results of the analysis?

RESPONSE: The Thompson School was selected previously by the SBCUSD for comparison with the Ramona Alessandro Elementary School because the schools had approximately the same number of students and approximately the same type of demographics. Two significant differences between the schools are that the Ramona-Alessandro Elementary School is adjacent to Omnitrans facility and that the Thompson Elementary School is in a census tract identified by the SCAQMD as having a background risk of approximately 1,500 in 1,000,000 from mobile sources.

It appears that there were about twice as many instances of spontaneous bloody nose and spontaneous vomiting in Ramona Alessandro compared to Thompson.

The significance of these findings was not discussed in the report nor mentioned in the conclusions. These findings are potentially of concern, and deserve follow up and additional analysis. Data from a three-month period were used. If data are available from a longer period, this would give additional information and provide for a more robust statistical analysis.

RESPONSE: While the initial evaluation of reported cases of spontaneous bloody and spontaneous vomiting appears to be higher at Ramona Alessandro, an analysis of the relative distribution of the symptoms between the schools (a scatter plot of the difference between each schools shows that for spontaneous vomiting and spontaneous bloody noses, the absolute difference between each day appears to be evenly distributed. That is to say that there were just as many days where the symptoms reported at Thompson Elementary exceeded the number of symptoms reported by Ramona-Alessandro Elementary. Even on or near days where odor complaints were high for the 5th Street Station (February 5 and February 6, 2002), symptoms reported at Ramona Alessandro Elementary School did not show an elevated trend when compared with the Thompson Elementary School..

The symptoms of headache and nausea are combined. What is the rationale for not separating them?

RESPONSE: The symptoms were combined in the redacted nursing logs.

The report also refers to a survey of parents of school children. It is important to conduct this survey and include the results in the final assessment.

RESPONSE: In January 2004 a survey of students at the Ramona Alessandro Elementary School was performed with the approval of the San Bernardino City Unified School District (SBCUSD). A one page survey instrument, in English and Spanish, was provided to all students attending during the month of January 2004. A total of 700 surveys were supplied to the school for distribution to students. Each survey was supplied in a self-addressed stamped envelope to ensure anonymity for the respondents. During this period two of the three tracks of students are in attendance. This constitutes approximately 650 of the 850 students who attend the school. In addition, at the request of one of the staff members who is also a member of WeCAN, a survey of staff members of the Ramona Alessandro Elementary School was also performed in January 2004. After approval by SBCUSD, a one page survey instrument, similar to the one supplied to students was sent to the school for distribution. Each survey was supplied in a self-addressed stamped envelope to ensure anonymity for the respondents.

A total of 68 out of 700 student surveys were returned prior to February 25, 2004. The response rate of approximately 10% from the surveys provided to the school. Approximately 42 out of the 68 of the respondents (62%) lived within ½

mile of the school. Of the remaining 26 respondents, 25 lived more than ½ mile from the school. One student chose not to indicate where they lived.

The Self Reported Health Status for Students Living Within ½ Mile of the School

Status	Count	Cumulative Count	Percent	Cumulative Percent
Excellent	8	8	32	32
Very Good	8	16	32	64
Good	4	20	16	80
Fair	3	23	12	92
Poor	0	23	0	92
Missing	2	25	8	100

The Self Reported Health Status for Students Living More Than ½ Mile of the School

Status	Count	Cumulative Count	Percent	Cumulative Percent
Excellent	3	3	7	7
Very Good	11	14	26	33
Good	14	28	33	67
Fair	11	39	26	93
Poor	2	41	5	98
Missing	1	42	2	100

For students that lived near the school approximately 93% reported that their health status was fair to excellent. For students that lived more than ½ mile from the school 92% reported that their health status was fair to excellent.

The Self Reported Change In Status for Students Living Within ½ Mile of the School

Change in Status	Count	Cumulative Count	Percent	Cumulative Percent
Improved				
Significantly	1	1	4	4
Improved				
Somewhat	0	1	0	4
Stayed About The				
Same	17	18	68	72
Declined Somewhat	4	22	16	88
Declined				
Significantly	3	25	12	100
Don't Know	0	25	0	100
Missing	0	25	0	100

The Self Reported Change In Health Status for Students Living More Than ½ Mile of the School

Change in Status	Count	Cumulative Count	Percent	Cumulative Percent
Improved Significantly	0	0	0	0
Improved Somewhat	0	0	0	0
Stayed About The Same	17	17	40	40
Declined Somewhat	18	35	43	83
Declined Significantly	2	37	5	88
Don't Know	5	42	12	100

For students that lived near the school approximately 68% reported that their health status had not changed while 4% reported that their health had improved significantly since attending Ramona Alessandro Elementary. A total of 28% reported that their health had declined somewhat or declined significantly since attending Ramona Alessandro Elementary. For students that lived more than ½ mile from the school approximately 40% reported that their health status had not changed since attending Ramona Alessandro Elementary. A total of 48% reported that their health had declined somewhat or declined significantly since attending Ramona Alessandro Elementary.

For both sets of students the responses approximated a normal distribution of responses. Most students reported that their health was excellent, very good, or good.

A total of 37 out of 100 student surveys were returned prior to February 25, 2004. The response rate of approximately 37% from the surveys provided to the school. Approximately 12 out of the 37 of the respondents (32%) lived within ½ mile of the school. The 25 respondents or 68% of the respondents lived more than ½ mile from the school.

The Self Reported Health Status for Staff Living Within ½ Mile of the School

Status	Count	Cumulative Count	Percent	Cumulative Percent
Excellent	0	0	0	0
Very Good	0	0	0	0
Good	0	0	0	0
Fair	10	10	83	83
Poor	2	12	17	100

Missing	0	12	0	100
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The Self Reported Health Status for Staff Living More Than ½ Mile of the School

Status	Count	Cumulative Count	Percent	Cumulative Percent
Excellent	6	6	24	24
Very Good	7	13	28	52
Good	5	18	20	72
Fair	5	23	20	92
Poor	2	25	8	100
Missing	0	25	0	100

For staff that lived within a ½ mile of the school approximately 83% reported that their health status was fair. The remaining 17% reported their health status as poor. For staff that lived more than ½ mile from the school 92% reported that their health status was fair to excellent.

The Self Reported Change In Status for Staff Living Within ½ Mile of the School

Change in Status	Count	Cumulative Count	Percent	Cumulative Percent
Improved				
Significantly	0	0	0	0
Improved				
Somewhat	0	0	0	0
Stayed About The				
Same	0	0	0	0
Declined Somewhat	12	12	100	100
Declined				
Significantly	0	12	0	100
Don't Know	0	12	0	100
Missing	0	12	0	100

The Self Reported Change In Health Status for Students Living More Than ½ Mile of the School

Change in Status	Count	Cumulative Count	Percent	Cumulative Percent
Improved				
Significantly	0	0	0	0
Improved				
Somewhat	0	0	0	0
Stayed About The				
Same	12	12	48	48
Declined Somewhat	8	20	32	80

Declined				
Significantly	3	23	12	92
Don't Know	2	25	8	100
Missing	0	25	0	100

For staff that lived near the school approximately 100% reported that their health status had declined somewhat since starting work at Ramona Alessandro Elementary. For staff that lived more than ½ mile from the school approximately 48% reported that their health status had not changed since starting work at Ramona Alessandro Elementary. A total of 44% reported that their health had declined somewhat or declined significantly since starting work at Ramona Alessandro Elementary.

The responses from staff living more than ½ mile from the school approximate a normal distribution. The responses from staff living within ½ mile of the Omnitrans facility were identical in the responses questions, including the number of hours of exposure (24 hours), overall health status (declined somewhat), cause of health decline (attributed to Omnitrans facility), and conditions that keep the respondent from working (asthma, breathing problems, nosebleeds, and nausea). *add something***. The staff respondents living more than ½ mile from the school had a higher self-reported health status, years working at the school, and overall health status.

Emissions and Risk Assessment

The report states that the risk assessment generally follows Cal EPA and US EPA guidelines. Cal EPA's Office of Environmental Health Hazard Assessment has published more recent guidelines for air toxics risk assessments than cited in the report. The analysis should also be consistent with these more recent guidelines.

RESPONSE: Comment noted.

The analysis focused on fugitive emissions and specifically excluded mobile sources. However, bus and other traffic emissions are associated with the fueling station operations. The rationale for excluding these emissions is not clear, particularly since one of the major conclusions is that mobile sources emitting diesel particulates exceeds all other risks from fugitive emissions to community members. It is not clear how this conclusion comes from the analysis, since mobile source emissions were not addressed.

RESPONSE:

In August 2003, SCAQMD published the "White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution" in which a regional evaluation of air quality was used to determine the risks posed to neighborhoods from mobile and stationary sources. According to the document "Estimated risks

from air toxic measurement at 10 monitoring stations for residents of the Basin are ~1,400 in a million (based on a range from about 1,120 in a million to about 1,740 in a million), with some areas experiencing higher risks. Reducing emissions throughout the Basin would decrease the overall risk on a regional basis and will lower neighborhood risks by varying degrees, depending on the localized circumstances.”

According to the results of the study (SCAQMD, 2003), for the areas of interest in San Bernardino, the communities adjacent to the 5th Street Station and I Street Station in San Bernardino, the background risk from mobile sources is approximately 1,000 in 1,000,000, while the background risk from stationary sources is approximately 100 in 1,000,000. For the areas immediately east of the 215 Freeway the risk is approximately 1,500 in 1,000,000.

For the area of interest in Montclair, the background risk from mobile sources is approximately is less than 1,000 in 1,000,000 while the background risk from stationary sources is approximately 100 in 1,000,000.

Omnitrans is mandated to reduce diesel emissions from buses and was given a grant by the SCAQMD to transition its fleet to alternative fuels in the 1990s. SCAQMD Fleet Rule 1192 - Clean On-Road Transit Buses mandates that Omnitrans and other public transit fleet operators “acquire alternative-fuel heavy-duty vehicles when procuring or leasing these vehicles to reduce air toxic and criteria pollutant emissions.” The rule applies to “public transit fleets with 15 or more public transit vehicle or urban buses, operated by government agencies or operated by private entities under contract to government agencies, that provide passenger transportation services including intra- and intercity shuttle services. “

Under Rule 1192 Alternative-Fuel Heavy-Duty Vehicle “means a heavy-duty vehicle, urban bus or engine that uses compressed or liquified natural gas, propane, methanol, electricity, fuel cells, or other advanced technologies that do not rely on diesel fuel, and meets the emission requirements of Title 13, Section 1956.1 of the California Code of Regulations [adopted by the California Air Resources Board (CARB) on February 24, 2000].

The report concludes that the facility emissions are unlikely to exceed risk management guidelines. For the reader to compare the estimated risks, it would be useful to have a tabular summary of these risks compared to the risk management levels used. Also, it is not clear in the report how the three receptors in the health risk analysis were chosen, where they are located, and what exposure duration or other assumptions were used.

RESPONSE: The receptors were chosen to represent students on the playing field, a resident along the fence line of the Omnitrans facility (anticipated worst case scenario), and a resident on the east side of Ramona Alessandro Elementary (based on predominant wind pattern and number of odor complaints).

An isopleth of the risks calculated near the facilities, or at least a geographical depiction of where the maximum estimated risk occurred, would be helpful to better convey the results to the reader.

RESPONSE: Figures representing the isopleths of the maximum concentrations from emitters are presented in the revised report.

The analysis uses Cal EPA factors for cancer potency, but uses US EPA factors for non-cancer health effects. The analysis should be consistent and use Cal EPA cancer potency factors and Reference Exposure Levels for non-cancer health effects evaluation.

RESPONSE: Comment noted. The reference exposure values have been changed to be consistent with the CalEPA values in the final report.

Community Survey

The report states that a representative sample of residents was used, but contains no discussion of how this was determined. There was also no discussion of what percentage of residents were actually interviewed, how representative they were, or how these factors might affect the results.

RESPONSE: The survey attempted to survey as many residents as possible over a 5 day period. Residents were sent flyers in Spanish and English notifying them that a survey team would be in the neighborhood to collect information from all of the residents. The survey teams were able to get responses from approximately 600 residences in the areas surrounding the Metro, I Street, and West Valley Stations. For the Metro Station and I Street Station areas, the number of residences surveyed encompassed more than 75 percent of the residences in the area. For the West Valley station, the number of residences encompassed more than 30 percent of the residences in the area. The response rates from the door-to-door surveys were higher (30% to 75%) than the blinded surveys to students and staff at the school. The results from the door-to-door survey may well represent the potential impacts on the community better than the school survey.

The analysis used 500 feet intervals as the measure of distance, and correlations and p-values are presented. It is not clear in the report how the 500 feet distance intervals were chosen. Are there other approaches, such as categorizing the distance from the facilities into quartiles, and determining if there are any changes in overall or perceived health status among the quartiles?

RESPONSE: The value of 500 foot intervals is the approximate distance from the center of the Metro Station to the middle of the playing field at the Ramona Alessandro Elementary School.

The report states that there was a relationship between self-reported health status and distance to the Omnitrans facility (page 28). What is the nature of this relationship? What is the significance of this? Also, this statement contrasts with one in the Executive Summary (page xi) that statistical testing demonstrated no relationship between health status and proximity to the fueling stations.

RESPONSE: The significance has been noted previously. This will be corrected in the final report.

Presentation of the Summary Data

The report would be more useful and more easily understood if the results were presented in tabular or graphic formats with summary data and descriptive statistics. Much of the tabular information actually shown was related to correlation coefficients and p-values. While this is important for the analysis, it is very difficult to get an overall picture of the findings with these limited depictions of the results.

RESPONSE: Summary tables will be created for the final report.

Specific Comments

Page x, Paragraph 5

Any interviews of the students or families? Why only one school for comparison? How was the comparison school selected?

RESPONSE: No interviews were scheduled with students or families of students. A blinded survey instrument was provided to the families of all students on track during January 2004. Thompson Elementary School was previously selected by the SBCUSD as a case control for the Ramona Alessandro Elementary School.

Page xi, Paragraph 3

What percentage of the residents was interviewed? Is this a representative sample?

RESPONSE: Approximately 30% to 75% of the households in the areas around each of the fueling stations were contacted during the survey period. These percentages should represent a large enough group to be able to make statistical inferences on the potential impacts on the community.

Page xi, Paragraph 4

Have the student surveys been done? Has this been done with parents?

RESPONSE: : In January 2004 a survey of students at the Ramona Alessandro Elementary School was performed with the approval of the San Bernardino City Unified School District (SBCUSD). A one page survey instrument, in English and Spanish, was provided to all students attending during the month of January 2004. A total of 700 surveys were supplied to the school for distribution to students. Each survey was supplied in a self-addressed stamped envelope to ensure anonymity for the respondents. During this period two of the three tracks of students are in attendance. This constitutes approximately 650 of the 850 students who attend the school. In addition, at the request of one of the staff members who is also a member of WeCAN, a survey of staff members of the Ramona Alessandro Elementary School was also performed in January 2004. After approval by SBCUSD, a one page survey instrument, similar to the one supplied to students was sent to the school for distribution. Each survey was supplied in a self-addressed stamped envelope to ensure anonymity for the respondents. Surveys of parents living within the ½ mile radius of the Metro Station were performed in the form of the door-to-door canvassing performed in October 2003.

Page xi, Paragraph 5

Not clear what the data show. No summary data tables of findings are presented. What percentage of respondents indicated that their current health status was poor, for example?

RESPONSE: A summary table of the findings will be presented in the final report. Approximately 9% of the respondents living near the Metro Station reported that their health status was poor.

Page xii, Paragraph 1

What about short-term effects? Odors?

RESPONSE: Odors have been the principal complaints related to the operation of the Metro Station. Multiple sampling events by SCAQMD and by contractors to the SBCUSD and Omnitrans failed to show where sources of odors from the Metro Station were occurring once the compressed natural gas system was made inoperative. Given the lack of analytical data indicating a source of odorous compounds such as mercaptans, it is difficult to ascribe any short-term effects to compounds that have not been detected.

Page xii, Paragraph 4

What are these ranges of risk management values? A summary table of estimated risk compared to these values would be helpful.

RESPONSE: A review of Superfund Records of Decision since 1986 indicates that acceptable excess carcinogenic risk at various sites was between 1×10^{-4} to 1×10^{-6} . The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) indicates that for known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual between 1×10^{-4} to 1×10^{-6} using information on the relationship between dose and response (40 CFR 300.430). Under State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65 or the Act), the no significant risk levels (NSRLs) for carcinogens and maximum allowable dose levels (MADLs) for chemicals that cause reproductive toxicity (the risk management levels) are defined as the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime (70-year) exposure at the level in question and the level at which the chemical would have no observable adverse reproductive effect assuming exposure at 1,000 times that level, respectively. The NSRLs and MADLs are promulgated in Title 22, California Code of Regulations, (CCR) Sections 12705 and 12805 respectively to assist interested parties in determining whether warnings are required for exposures to listed chemicals, and whether discharges to sources of drinking water are prohibited. SCAQMD has outlined its risk management requirements for new and existing source review (Rules 1401 and 1402) the cumulative increase in maximum individual cancer risk (MICR) shall not exceed: one in a million (1×10^{-6}) if best available control technology is not used; or, ten in a million (10×10^{-6}) if best available control technology is used. This information will be summarized in a table for the final report.

Page xii, Conclusions, second bullet

Mobile sources were not included in the analysis. How does this conclusion arise?

RESPONSE: The impacts from mobile sources are based upon the SCAQMD's "White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution." According to the results of the study (SCAQMD, 2003), for the areas of interest in San Bernardino, the communities adjacent to the 5th Street Station and I Street Station in San Bernardino, the background risk from mobile sources is approximately 1,000 in 1,000,000, while the background risk from stationary sources is approximately 100 in 1,000,000. For the areas immediately east of the 215 Freeway the risk is approximately 1,500 in 1,000,000.

For the area of interest in Montclair, the background risk from mobile sources is approximately is less than 1,000 in 1,000,000 while the background risk from stationary sources is approximately 100 in 1,000,000.

Chapter 2, page 20, Section 2.1.5.1

A table of the findings would help the reader to better follow the results. This seems a short study period? (January 2, 2002 to March 29, 2002). Why not longer?

RESPONSE: The redacted handwritten nursing logs were provided by the SBCUSD at the request of Omnitrans. The period represents the transition period from CNG to LCNG at the Metro Station.

Why are the symptoms, nausea and headaches, combined? Would separating these symptoms give additional information?

RESPONSE: The symptoms were reported in the redacted handwritten nursing logs as a combined symptom.

What is difference between respiratory problems (paragraph 1) and respiratory distress (paragraph 3)? Is this in reference to asthma attacks, stuffy noses, other?

RESPONSE: Respiratory distress is a reference to dyspnea. Dyspnea is defined as breathing difficulties involve a sensation of difficult or uncomfortable breathing or a feeling of not getting enough air.

Why was Thompson Elementary School chosen for comparison?

RESPONSE: Thompson Elementary School was chosen by the SBCUSD as a representative control study center.

Chapter 2, page 21, Section 2.1.5.1 (continued)

What is the significance of the findings from the two schools?

RESPONSE: Figures 6a through 6f show the relative distribution of the symptoms during the period evaluated for each school. Figures 6g through 6l show the absolute difference between each school for the symptoms reported. For vomiting induced by motion and bloody noses caused by trauma there are a higher number of cases at Ramona Alessandro Elementary then at Thompson Elementary School. For the other symptoms, respiratory distress, spontaneous vomiting, headaches/nausea, and spontaneous bloody noses, the absolute difference between each day appears to be evenly distributed. That is to say that there were just as many days where the symptoms reported at Thompson Elementary exceeded the number of symptoms reported by Ramona-Alessandro Elementary. Even on or near days where odor complaints were high for the 5th Street Station (February 5 and February 6, 2002), symptoms reported at Ramona Alessandro Elementary School did not show an elevated trend when compared with the Thompson Elementary School..

Chapter 2, page 24, Section 2.1.6, paragraph 3

Why wasn't information collected by SCAQMD during the extensive monitoring program provided for the preparation of this report? Is this important to your analysis?

RESPONSE: Multiple requests were made for the data through Freedom of Information Act Requests and through e-mails and phone calls to the designated contacts at SCAQMD. No reason was given by SCAQMD for not providing the data.

Chapter 3: page 25, paragraph 1

Timeframe for conducting the interviews is not clear.

RESPONSE: Interviews were conducted from October 20, 2003 to October 25, 2003.

Chapter 3: page 25, section 3.1, paragraph 2

How was it determined that a "representative sample" was taken? What percentage of the total residents in the area participated?

RESPONSE: Approximately 30% to 75% of the households in the areas around each of the fueling stations were contacted during the survey period. These percentages should represent a large enough group to be able to make statistical inferences on the potential impacts on the community.

Chapter 3: page 25, section 3.1, paragraph 3

What does "contacted" refer to? Spoke to a resident or visited?

RESPONSE: Contacted refers to an attempt to interview. Surveyors were instructed to knock on each door in the neighborhood and attempt to talk with each resident.

Chapter 3: page 25, section 3.2, paragraph 1

How was the "representative sample" determined?

RESPONSE: Representative was determined to be more than 25% of the residents in the area.

Chapter 3: page 26, section 3.4

The student survey would be an important addition.

RESPONSE: The student survey was completed in January 2004. The results are being tabulated and will be included in the final report.

Chapter 3: page 27, section 3.5, paragraph 2

The tables do not show the data on self-reported health status. Only the correlation coefficients and p-values are shown. A summary of the data would be helpful.

RESPONSE: A summary will be included in the final report.

What does “potentially statistically significant relationship” mean? Relationship with what? Distance? Sentence #2 of this paragraph is not clear.

RESPONSE: Change in health status for years 3 and 5 were reported as poorer for residents living closer to the West Valley Facility. The significant effect noted was that the self reported change in health status from 5 years ago has an effect on the self-reported change in health status from 3 years ago (If you perceive yourself as being healthy 5 years ago you are more likely to perceive yourself as being healthy 2 years later. If you perceive that your health is poor you are more likely to continue to perceive yourself). In addition, the self-reported change in health status from 3 years ago has a negative effect on the self-reported change in health status for the last year. It appears from the data table that as the distance from the site increases the change in self-reported health status decreases. This relationship could be interpreted to mean that residents who are closer to the I-10 Freeway (to the south of the West Valley Station and farther away from the site) have a decreased self-reported change in health status.

With reference to statement “but this may be due to covariation and the small N,” deserves further explanation? The p-value was very low. Expand discussion?

RESPONSE: A smaller number of residents were surveyed in the community surrounding the West Valley Station than in the communities surrounding the Metro or I Street Stations therefore the results are more prone to the impacts of small reported changes.

Chapter 3: page 28, paragraph 3

How do you interpret these results? It appears from this statement that there is an association of overall self-reported health status and distance from the facilities. It would be useful to show data summaries as well as correlation coefficients and p-values to help understand findings.

RESPONSE: It appears for the I Street and Metro Station areas self-reported changes in health status have a positive effect with distance. That is to say that

people who live farther away from the stations have fewer changes to their health status. For residents near the West Valley station the change in self-reported health status are negative as the distance from the site increases. This relationship could be interpreted to mean that residents who are closer to the I-10 Freeway (to the south of the West Valley Station and farther away from the site) have a decreased self-reported change in health status.

Chapter 4: Local Area Survey, page 29, paragraph 1

Did not find the emission rates for the sources in Appendix C or an explanation of how these rates were derived.

RESPONSE: The emission rates for sources are provided in the final report.

Chapter 4: page 33, section 4.1.2, paragraph 1

“Thirty individual businesses (autobody, auto mechanics, markets and bakeries, laundries, restaurants, and trucking facilities) were identified within the half-mile radius of the Metro Station.” How do you account for their disposition in the document. Six facilities are identified in Table 7. Apparently seventeen could not be mapped. The disposition of the remaining seven businesses is not mentioned in the document. It is unclear what facilities were excluded from the analysis or why. With reference to Table 7, what were the emission rates? With reference to Appendix G, six facilities are identified in Table 7. But only four facilities are represented in the Metro Station model.

RESPONSE: The remaining facilities are accounted for in the final report. The four facilities in the Metro Station represent emitters that are closest to the community and have the highest emissions. The other emitters were too far away to impact the community and produced a low rate of emissions.

Chapter 5: Dispersion Modeling, page 44

The air dispersion modeling can be used to describe or explain the results. Some effort should be made to understand or map out the risk isopleth (or concentration contours). It is not clear where the three receptors are located or how they were chosen.

RESPONSE: The receptors are mapped in the final report.

Public Health Surveys (Chapter 3) and Local Area Surveys (Chapter 4) were prepared for “each fueling station”. “The Industrial Source Complex - Short Term (ISCST3) model was performed on the industrial sources identified within the half mile radius of each facility.” (page 44) Tables 8 and 9 suggest I Street Station and West Valley Station inventories, respectively. Tables 10 through 12 and Appendix G represent the Metro Station only. The I Street and West Valley Stations models and discussion appear to be missing from this document.

RESPONSE: The models for I Street and West Valley Stations are included in the final report.

Chapter 6: Chemicals of Potential Concern (COPC), page 45

The issues surrounding Omnitrans involve suspected fuel (specifically natural gas and indirectly unleaded gasoline and diesel) emissions. The list of chemicals of potential concern (COPC) seems to ignore natural gas and diesel. They are absent from the discussion.

RESPONSE: These compounds will be included in the final report.

Gasoline is known to contain benzene and methyl tertiary benzyl ether (MTBE). Benzene and MTBE are absent from the discussion and weight fraction of unleaded gasoline. The exclusion of these compounds may underestimate risks.

RESPONSE: The gasoline vapor component includes these compounds. The reference dose and cancer slope factor are from the Air Resource Board 1997 assessment of Toxic Air Contaminants.

No references or explanations for Tables 10 through 12. No documentation (citations and calculations) for the emissions rates and weight fractions for each pollutant. Which model receptors were used to represent the worker, resident, and students. Include any exposure assumptions used for the worker or student receptors. Without complete documentation, it is difficult to determine the accuracy and adequacy of this assessment.

RESPONSE: The emission rates and weight fractions are included on the emission summaries. Documentation for the rates are include therein.

Chapter 6: page 46, paragraph 2

References for this? How is this relevant to the current analysis? Mobile sources are associated with businesses and fueling operation. Why were these also excluded?

RESPONSE: References will be included in the final report. These compounds were excluded since the SCAMD had already calculated the impact on the communities of interest.

Chapter 7: Chemicals Characteristics, page 47, section 7.2 paragraph 1

What do the values for “gasoline vapor” represent?

RESPONSE: Gasoline vapor is a composite of the volatile organic compounds, including benzene. The Cancer Slope Factor (CsF) and Reference Dose represents a composite of the CsFs and Reference Doses. The reference dose and cancer slope factor are taken from the 1997 Toxic Air Contaminant Identification List Summaries from the Air Resource Board.

Chapter 7: page 47, section 7.2 paragraph 2

With reference to Federal CSFs, has this been defined?

RESPONSE: Yes.

Chapter 7: page 48, paragraph 2

Why not use Cal EPA Reference Exposure Levels as was done with cancer potency? Should be consistent.

RESPONSE: This will be amended in the final report to be consistent with Cal EPA policy.

Chapter 7: page 48, section 7.2.1 paragraph 1

Not clear on the relevance of this section to the analysis.

RESPONSE: This section outlines the mechanisms of carcinogens that are recognized by the scientific community.

Chapter 7: page 50, paragraph 1

Cal EPA also has Reference Exposure Levels for chronic as well as acute effects. Should use these rather than EPA's when available. Analysis should also be expanded to include short-term exposure, since the ISC models can calculate one-hour averages.

RESPONSE: Comment noted. This will be completed for the final report.

Chapter 8: Exposure Assessment, page 54, section 8.1

How were the factors used? What factors related to potentially exposed persons were used?

RESPONSE: The exposure factors are listed at the bottom of table 10 through 12. A separate table of exposure factors will be placed in the final report.

Chapter 8: page 55, section 8.1.1

Where are these receptors located? How were they chosen? How representative are they of the potentially exposed population?

RESPONSE: Receptors and receptor locations are noted on the figures included in the document.

Chapter 8: page 58, paragraph 2

With reference to RfD, there are also RELs for short-term (one to several hours) established by Cal EPA. Since the model can calculate one hour levels, these should also be used to assess potential effects of short-term exposures.

RESPONSE: This can be performed and will be included in the final report.

Chapter 9: page 61, section 9.3

Tables 4 through 10 did not show risk. Presume Tables 10-12 were meant. AQMD guidelines call for 70 year exposures for all risk assessments. Only a 30-year exposure was presented.

RESPONSE: Table numbering will be corrected in the final report.

What were the sources of acetaldehyde and toluene?

RESPONSE: Acetaldehyde is attributed primarily to operations of charbroilers in local restaurants. The following table was included in the final report listing the sources of potential chemicals of concern.

Compound	Source
• Gasoline vapors	• Gasoline
• Methyl Ethyl Ketone (MEK)	• Paint
• Acetone	• Paint, degreasers
• Isopropanol	• Paint thinner, degreasers
• Ethyl Benzene	• Paint thinner
• Methyl Alcohol	• Degreasers
• Toluene	• Paint, degreasers, brake cleaners
• Butyl Benzyl Phthalate	• Paint

- VM&P Naphta
- Xylenes
- Acetaldehyde
- Methylene Chloride
- Paint thinner
- Paint thinner, carbuerator cleaners
- Charbroilers
- Carbuerator cleaners, degreasers

Where are the receptors located? It would be useful to show an isopleth or show the maximum impact of the three receptor types evaluated.

RESPONSE: See response above.

What is the summary evaluation of potential risk from the Omnitrans facility emissions?

RESPONSE: The risks associated with the Omnitrans facility is provided in Table 10.

Chapter 10: Uncertainty Evaluation, page 62, section 10.2

What were the parameters used for exposure assessment?

RESPONSE: The exposure parameters are listed at the bottoms of Tables 10 and Table 11.

Chapter 11: Conclusions and Recommendations, page 65, paragraph 1

With reference to “potential risks”, potential risk from what?

RESPONSE: Potential risks from fugitive emissions at the Omnitrans facilities or the surrounding industrial facilities.

Chapter 11: page 65, paragraph 3

With reference to “Cal EPA’s risk management range, what is this range?

RESPONSE: Under State of California’s Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65 or the Act), the no significant risk levels (NSRLs) for carcinogens and maximum allowable dose levels (MADLs) for chemicals that cause reproductive toxicity (the risk management levels) are defined as the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime (70-year) exposure at the level in question and the level at which the chemical would have no observable adverse reproductive effect assuming exposure at 1,000 times that level,

respectively. The NSRLs and MADLs are promulgated in Title 22, California Code of Regulations, (CCR) Sections 12705 and 12805 respectively to assist interested parties in determining whether warnings are required for exposures to listed chemicals, and whether discharges to sources of drinking water are prohibited. SCAQMD has outlined its risk management requirements for new and existing source review (Rules 1401 and 1402) the cumulative increase in maximum individual cancer risk (MICR) shall not exceed: one in a million (1×10^{-6}) if best available control technology is not used; or, ten in a million (10×10^{-6}) if best available control technology is used. This information will be summarized in a table for the final report.

With reference to US EPA's acceptable risk range, what is this range?

RESPONSE: A review of Superfund Records of Decision since 1986 indicates that acceptable excess carcinogenic risk at various sites was between 1×10^{-4} to 1×10^{-6} . The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) indicates that for known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual between 1×10^{-4} to 1×10^{-6} using information on the relationship between dose and response (40 CFR 300.430).

Chapter 11: page 65, paragraph 4, first bullet

Explain "SRHS."

RESPONSE: Self reported health status. The questionnaires provided in the door-to-door survey and in the mail in survey of the school requested that the respondent provide their estimate of their health.

Chapter 11: page 65, paragraph 4, third bullet

With reference to "exceeds all other risks from fugitive emissions of other sources in the area," how does this conclusion arise? Mobile sources were not included in the analysis.

RESPONSE: SCAQMD's estimate for potential risks from mobile sources were used as a comparison.

What about the school survey results? What conclusion can be drawn from the school survey?

RESPONSE: After compiling the responses the following conclusions can be drawn from the school survey:

A low overall response rate from the family's of students at the school was achieved (lower than the response rate from residents surveyed in a door-to-door campaign in October 2003);

Table 12- Quantification of Carcinogenic Risks and Noncarcinogenic Risks

What are the components of gasoline vapor?

RESPONSE: The components of gasoline vapor include benzene, toluene, ethylbenzene, and xylenes.

Appendix G: ISCST3 Modeling Output

The total organic gas (TOG) emissions for Omnitrans Metro station (1.3569 micrograms per second) were distributed over 0.05388 square kilometers and represented with a ground level release (0.00 meters). The Omnitrans emissions would be better represented with an area similar to the actual dimensions of the fueling islands and at a release height appropriate for dispensing fuel from the pump nozzles (perhaps 1 meter). The dispersion of emissions over a greater area and use of a lower release height would underestimate risks.

RESPONSE: Comment noted. The final model will be adjusted to have TOG from the fuel dispensing islands better represented.

Delete the San Bernardino Intermodal Facility from the model. At 0.000000E+00 emissions, it does not contribute to the overall risk or the presentation. Its presence in the Metro Station model gives the impression that it has been included.

RESPONSE: Comment noted. The San Bernardino Intermodel Faciltiy will be removed from the model.

Verify the San Bernardino Intermodal Facility and Prieto Autobody Shop polygon vertices. They appear to have extra vertices (beyond the confines of a closed polygon).

RESPONSE: The vertices will be verified to removed any extra vertices.

Verify the source parameters for the Yellow Cab Bell Cabstop (YllwCab). By modeling convention, the southwest corner is used as the origin to geometrically describe any given area. By rotating the YllwCab image by 180 degrees, one effectively moves the origin. In other words, it is unclear whether the YllwCab is intended for (445.4, 52.9) or (423.1, 3.9), both with 0 degrees of rotation.

RESPONSE: The source parameters for YllwCab will be verified prior to finalizing the report.

Describe the use of the 0.1 and 0.07692 hour of day (HROFDY) inputs for the YllwCab, TacoKid, and Prieto sources. It would not be appropriate to apply multiple exposure discounts: first as part of the emission rate, second within the model (as either 0.0 or as fractional HROFDY), and third as part of the exposure assumptions. Without complete documentation of the emission rate, the HROFDY, and exposure assumptions, it is difficult to ascertain if multiple discounts were taken. The use of multiple discounts would underestimate risks.

RESPONSE: Comment noted. Multiple discounts were not performed. The HROFDY concentrates the emissions during the potential exposure period.

The Metro model employs a polar grid. A polar grid is often used for a single source (where the center of the polar grid may be assigned to the source) with undefined or uncertain meteorology... one is trying to outline the plume characteristics. In this case, several facilities are contained in the Metro modeling effort and it would be appropriate to use a square receptor grid instead, where the center point has not been prescribed and may prejudice the receptor alignment.

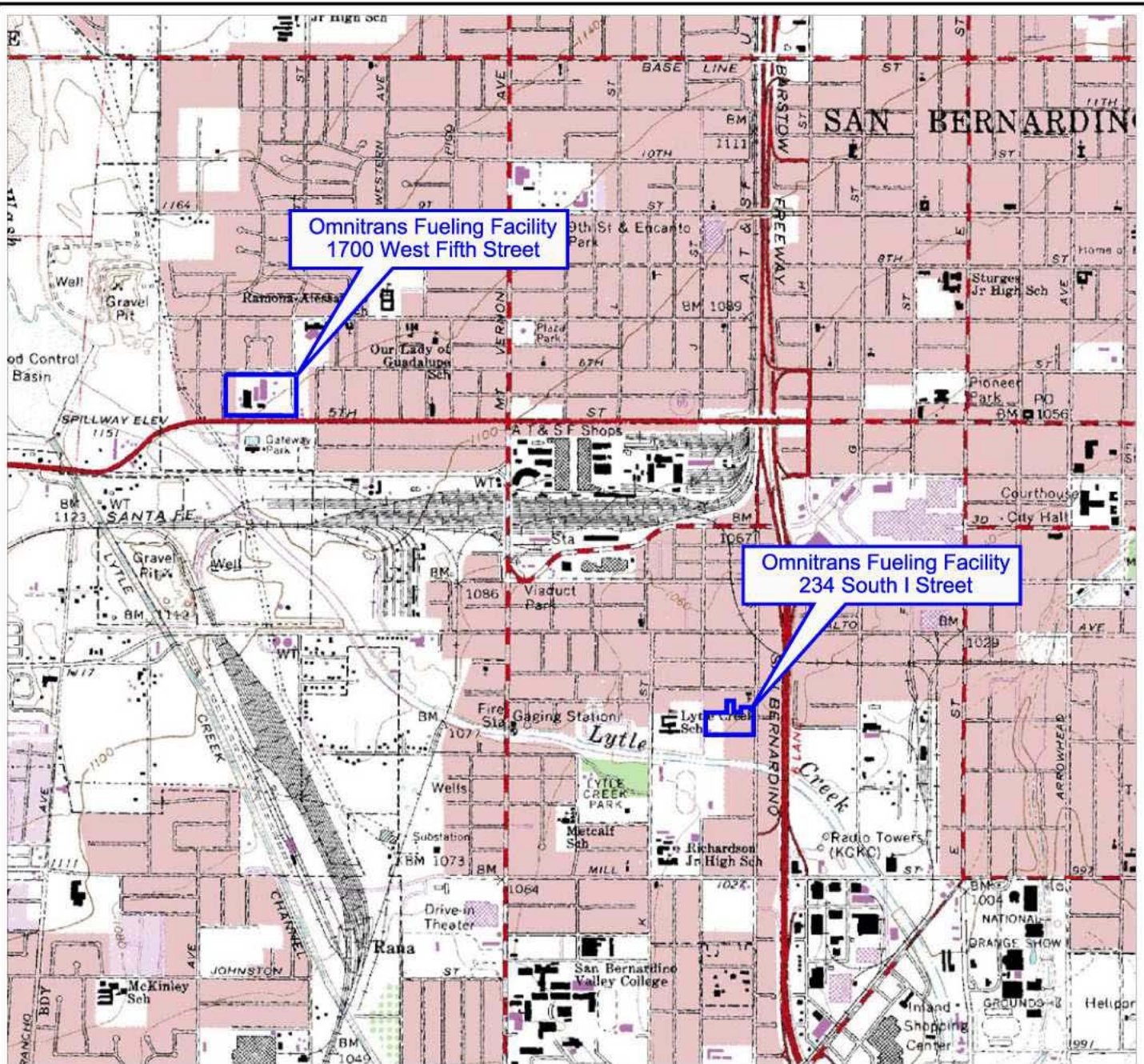
RESPONSE: The Cartesian grid will be applied in the final report to the models.

The Metro modeling grid employs distances of 152, 305, 457, 610, and 762 meters. District guidelines recommend a modeling grid with 100 meter spacing. The use of distant receptors would underestimate risks.

RESPONSE: The distances represent 500, 1000, 1500, 2000, and 2500 feet distances from the Omnitrans facility. Discrete receptors were placed at points in the system which represented potential sensitive receptors including students and residents of the area. The intent of the large modeled area was to try and capture the impact of as many receptors on the community as possible. The Cartesian Grid that will be employed in the final model to encompass the area of interest (1/2 mile radius from Omnitrans facility).

The Metro model employs relative coordinates. It would be more prudent to use absolute coordinates. With the advances in global positioning system (GPS) technology, it is easy to record absolute coordinates with any GPS device. And, GPS coordinates allow for overlay and verification on a real map or aerial photograph.

RESPONSE: The coordinates used in the models were based upon a rectified aerial photographs of the areas of interest. Re-verifying the coordinates is unnecessary for the purposes of this evaluation.



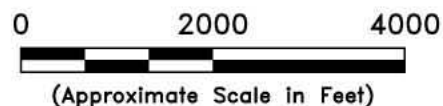
NOTES

1. All locations are approximate.
2. Sources:

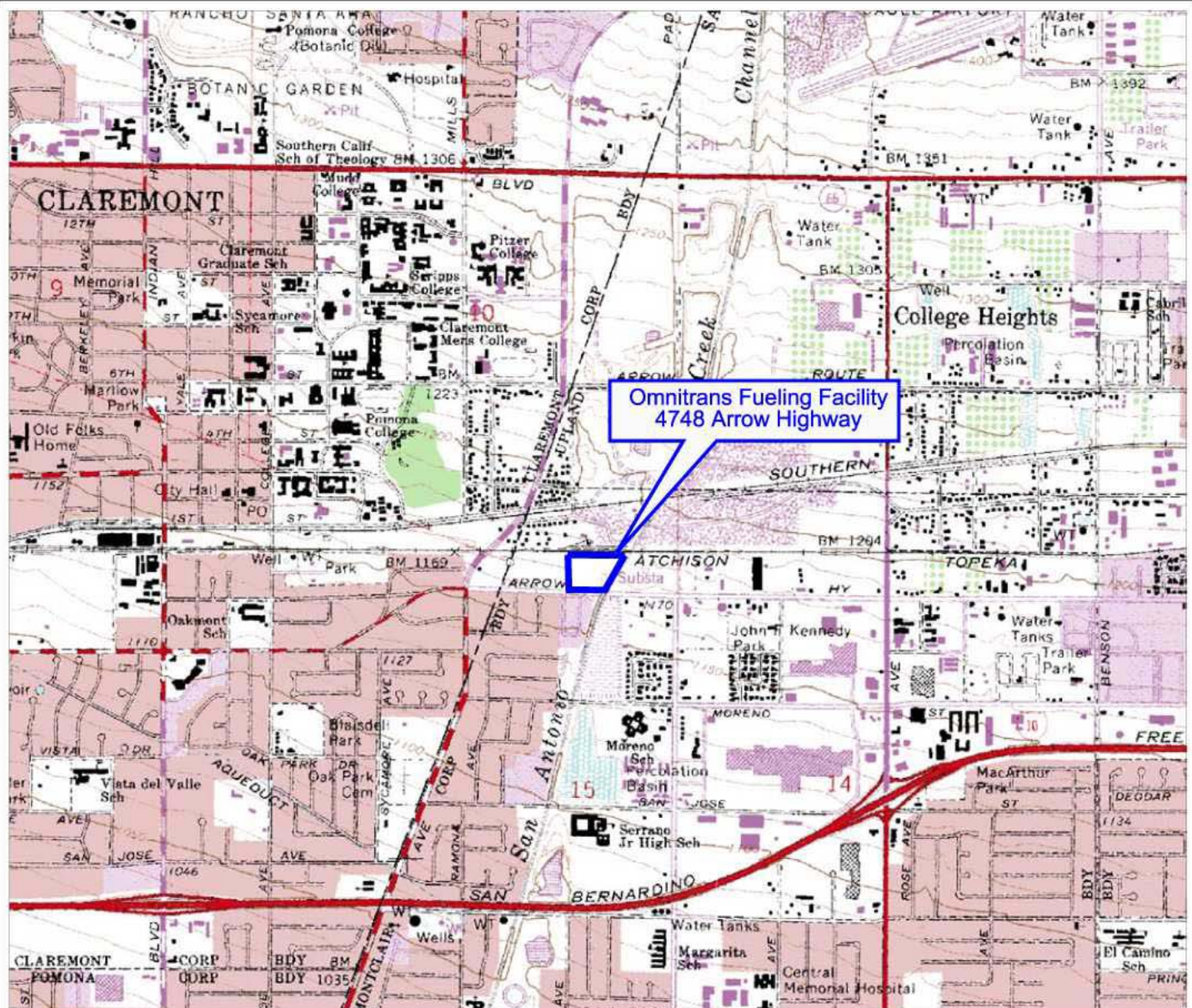
"San Bernardino South " 7.5 Minute Quadrangle, 1:24000 Series, United States Geological Survey. 1980, photorevised 1981.



NORTH



Title: Site Location Map Omnitrans Fueling Facilities 1700 West 5th Street / 234 South I Street San Bernardino, California		
Date: 10/28/03	Drafted By: RCH	Figure No: 1a
Project No: 015	Approved By: JJJC	




NOTES

1. All locations are approximate.
2. Sources:

"Ontario" 7.5 Minute Quadrangle, 1:24000 Series, United States Geological Survey. 1978, photorevised 1981.



NORTH

0 2000 4000

 (Approximate Scale in Feet)



Title: Site Location Map
 Omnitrans Fueling Facility
 4748 Arrow Highway, Montclair, California

Date: 10/28/03
 Project No: 015

Drafted By: RCH
 Approved By: JJJC

Figure No:

1b

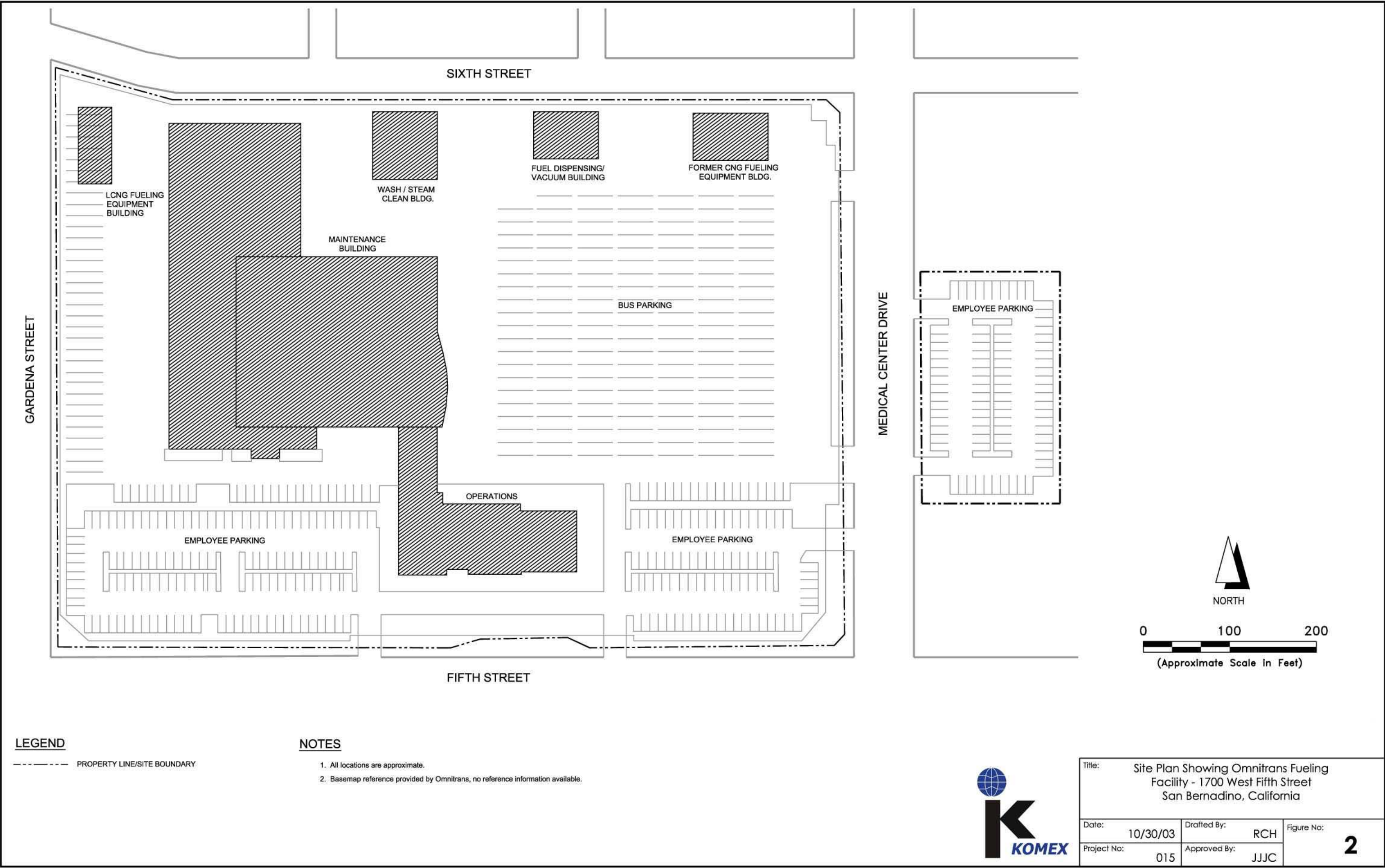


Figure 3: Gasoline Deliveries - Omnitrans West Fifth Street Fueling Facility, San Bernadino, CA

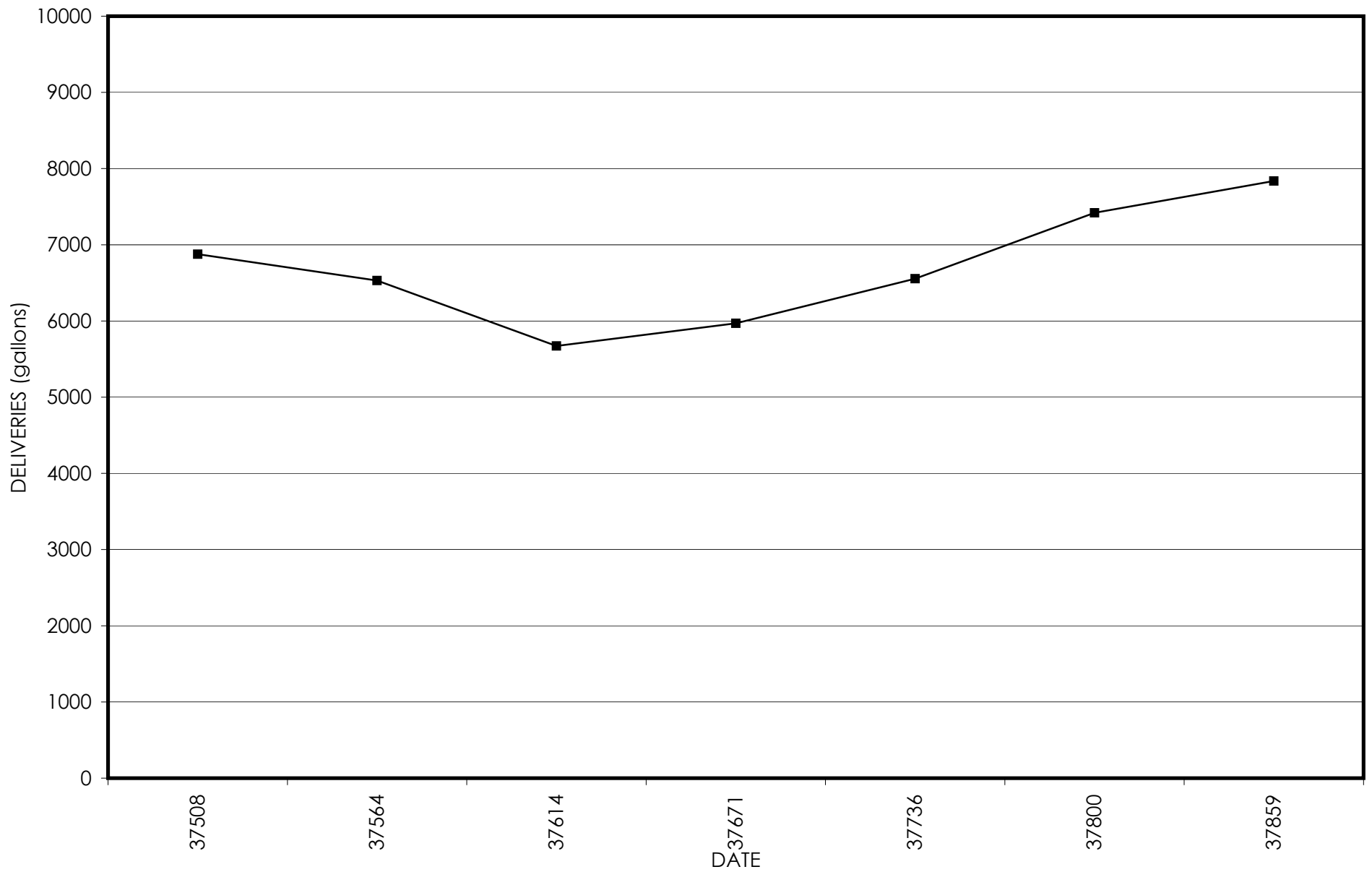


Figure 4: Ultra Low Diesel Deliveries - Omnitrans West Fifth Street Fueling Facility, San Bernadino

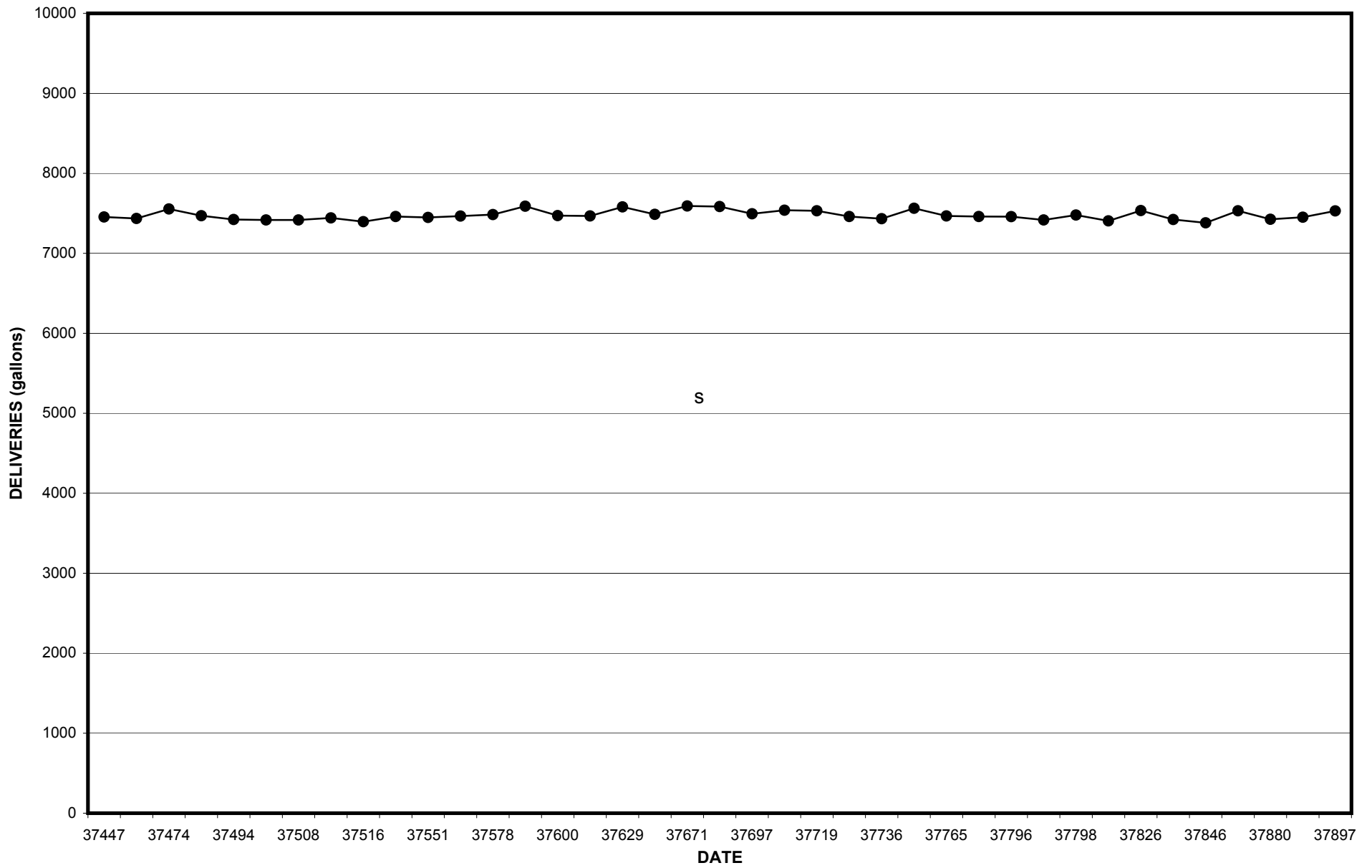
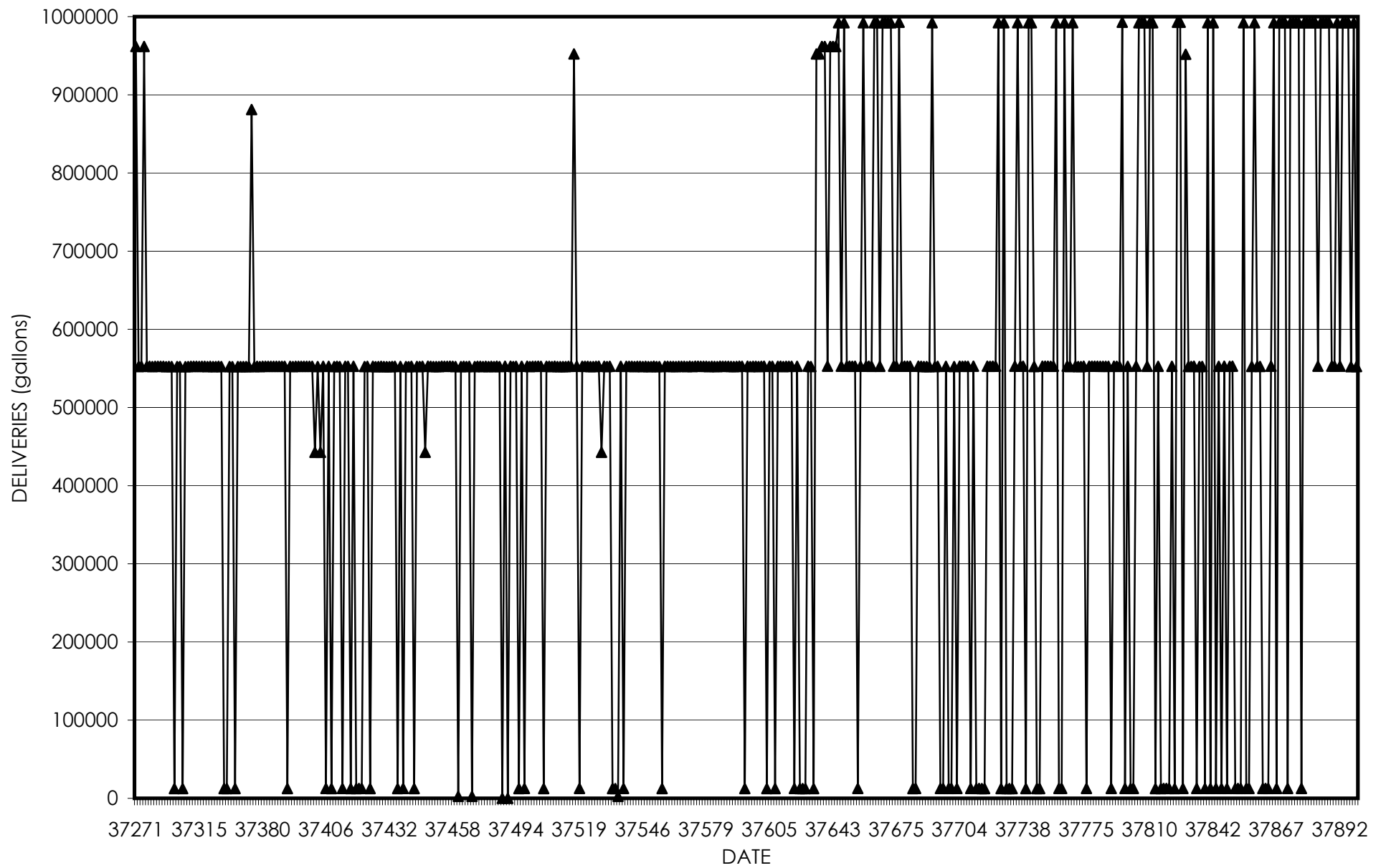


Figure 5: LCNG Deliveries - Omnitrans West Fifth Street Fueling Facility, San Bernadino, CA



**Figure 6a: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Respiratory Distress**

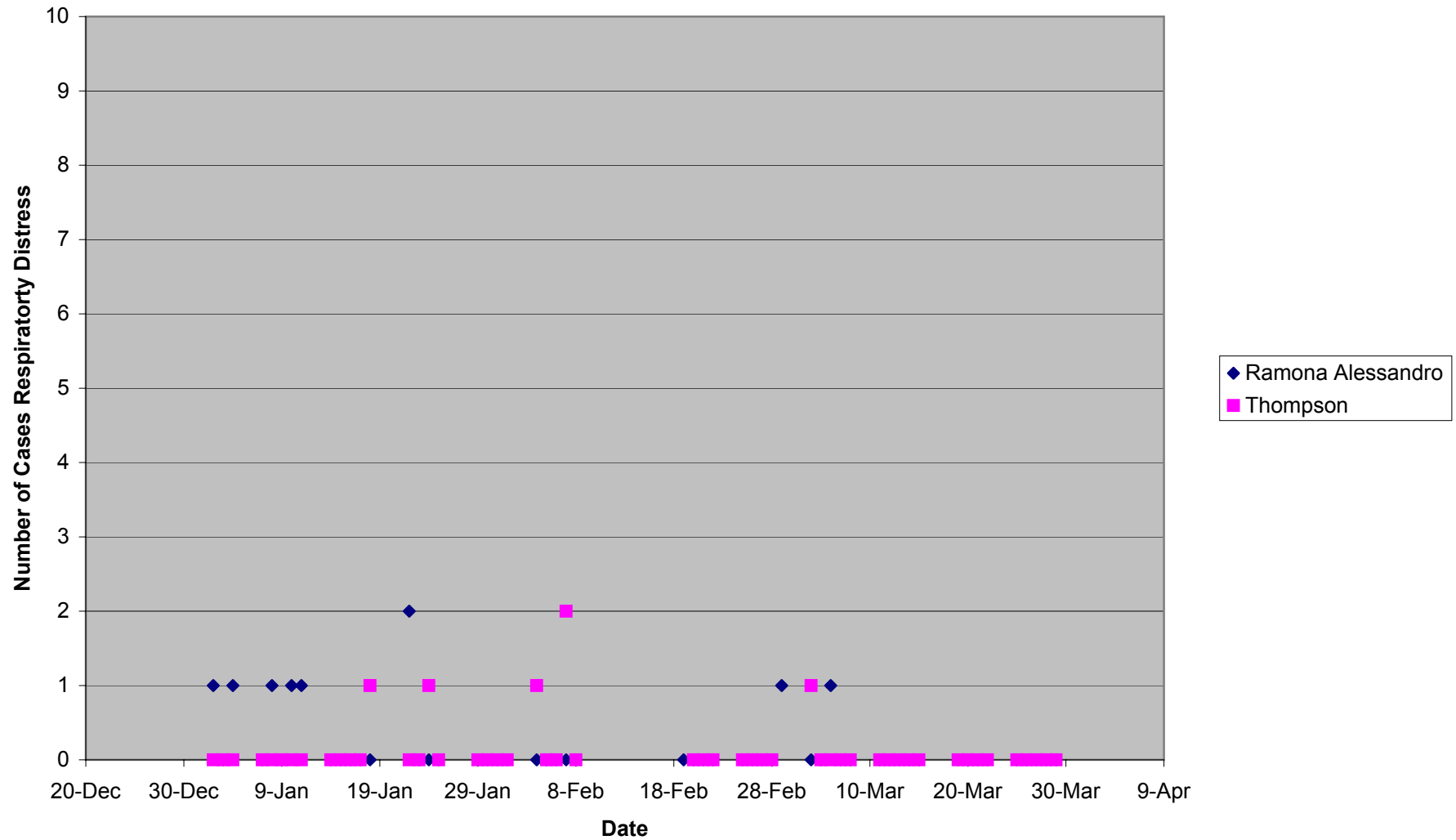
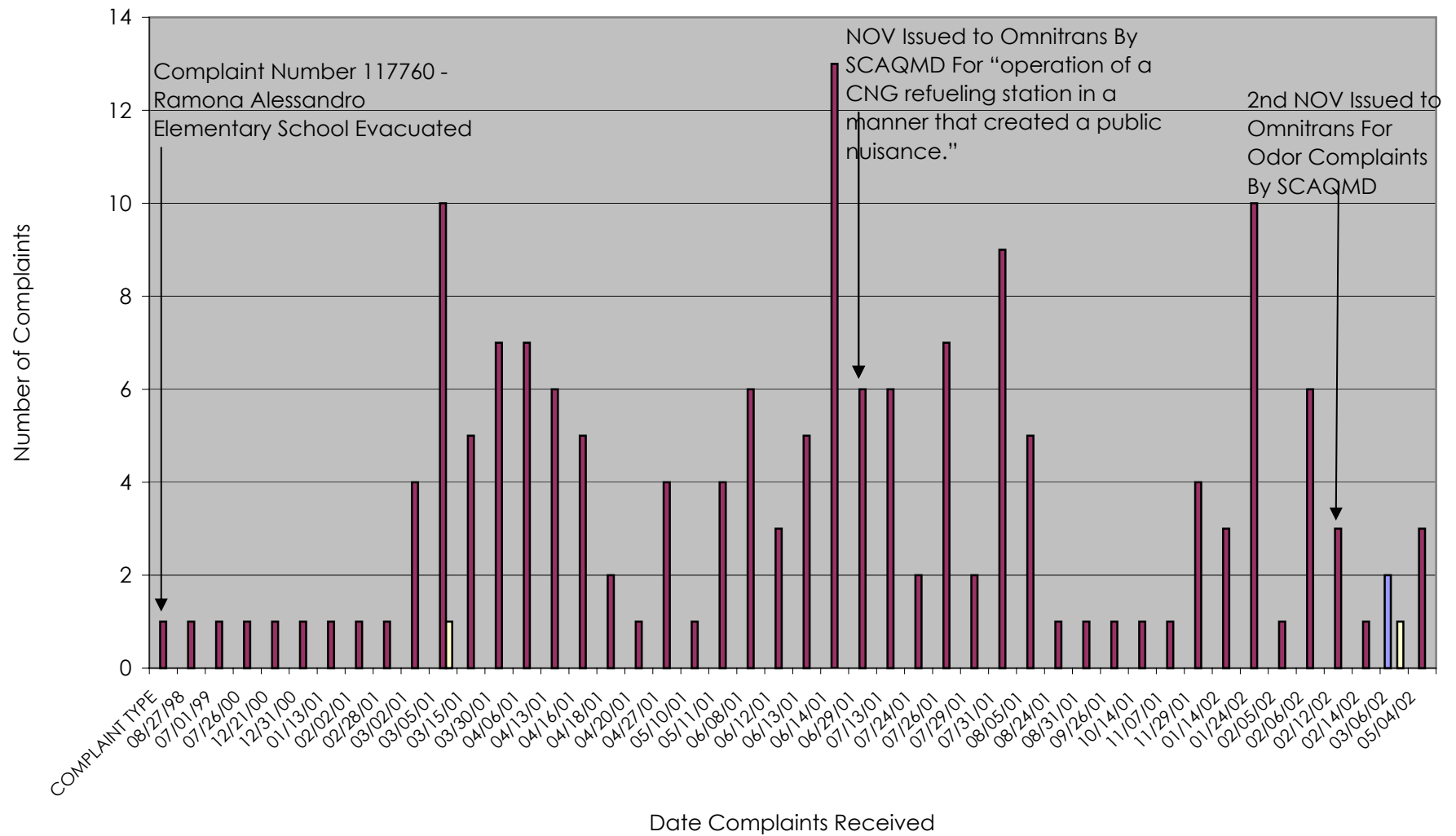
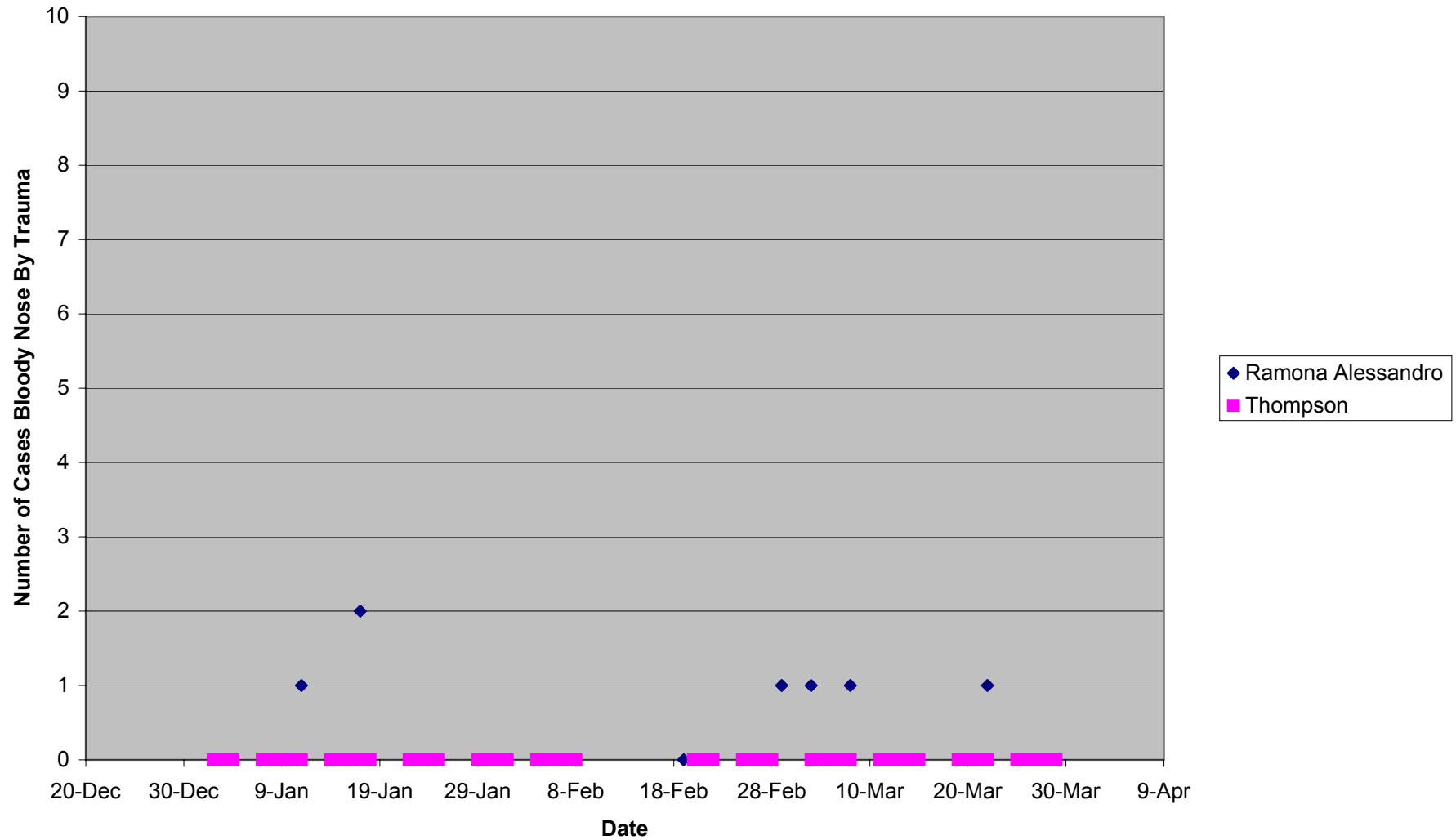


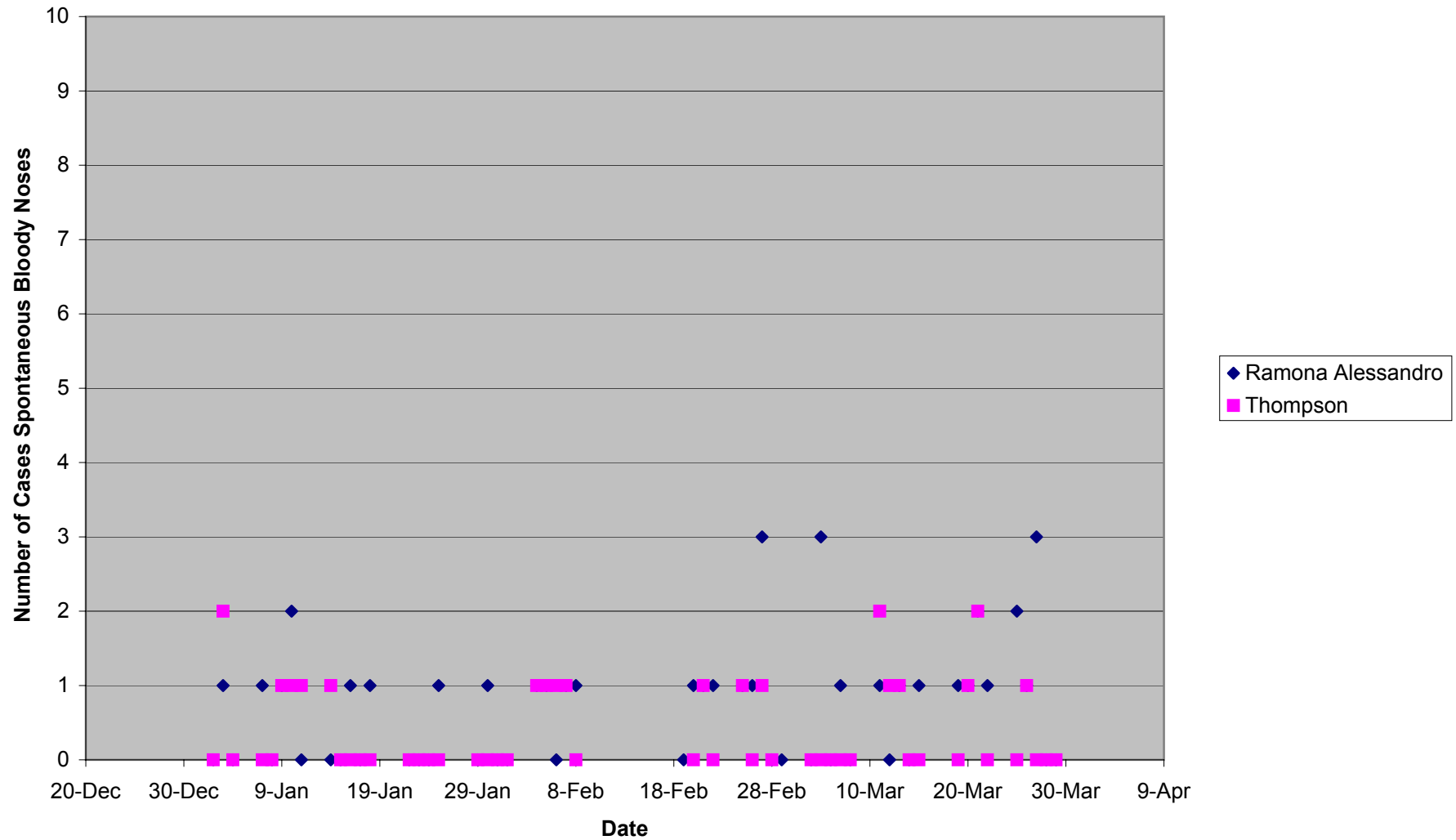
Figure 6: Odor Complaints Against Omnitrans Fueling Facility – 1700 West 5th Street, San Bernardino, CA



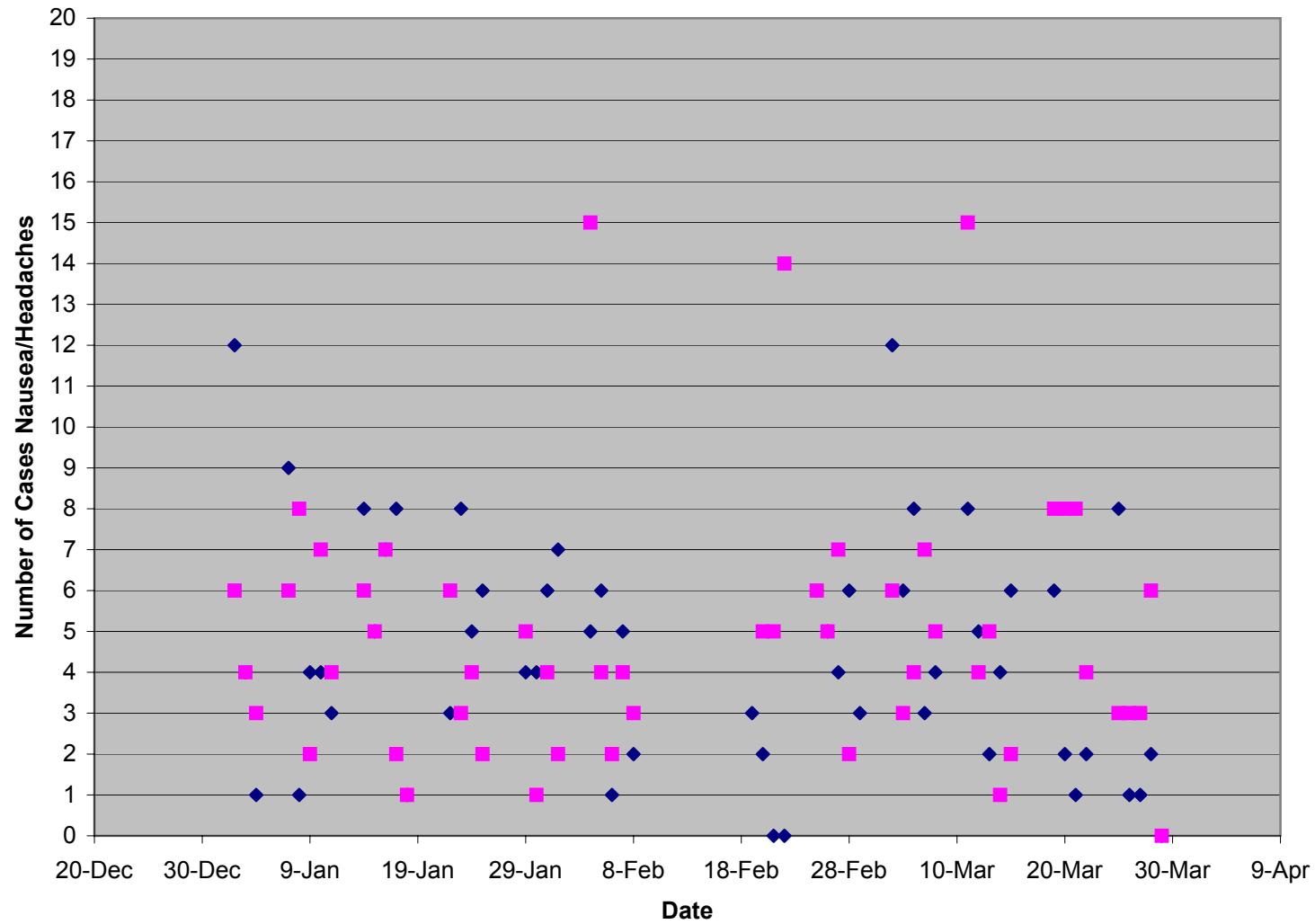
**Figure 6b: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Bloody Nose By Trauma**



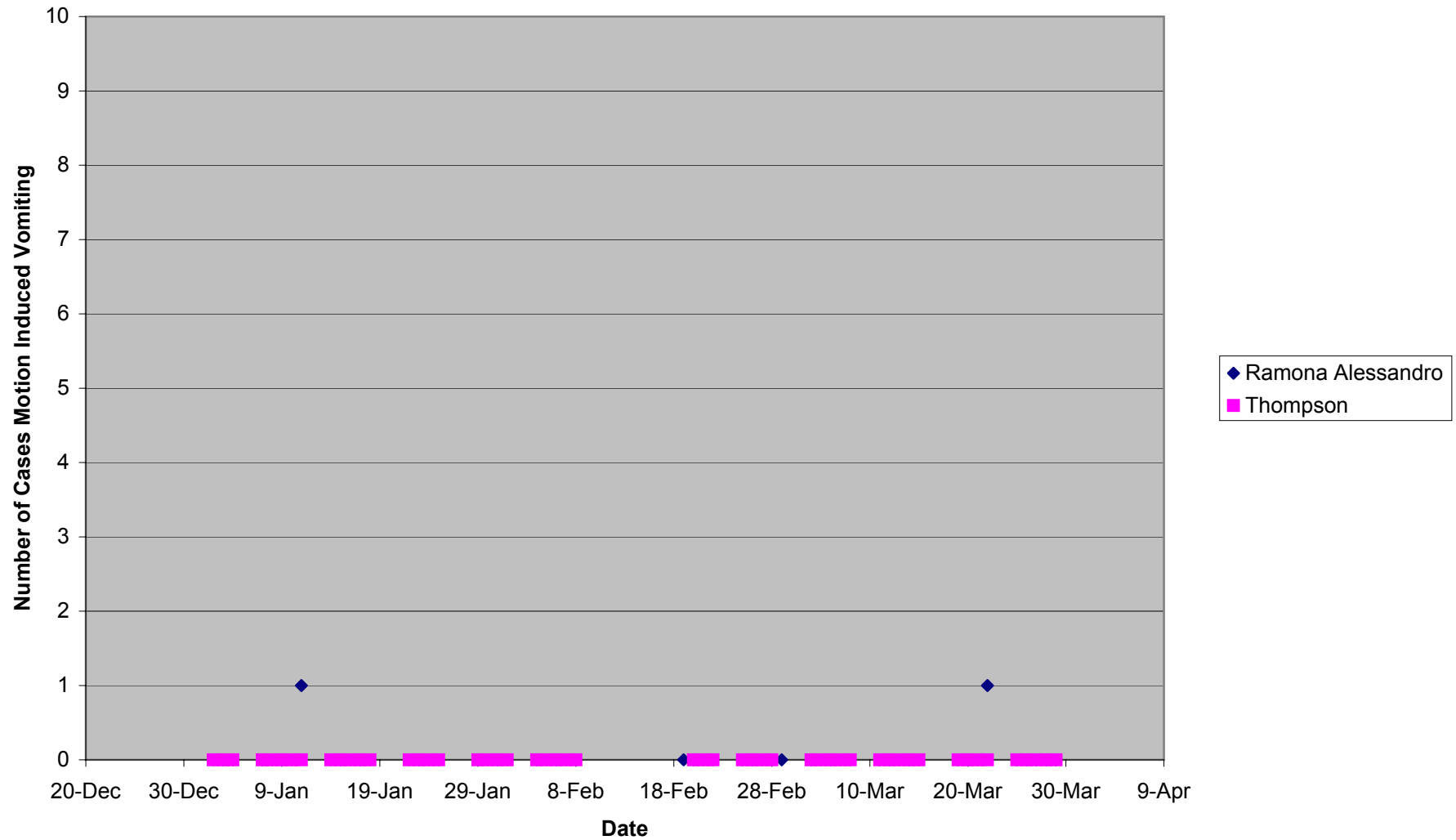
**Figure 6c: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Spontaneous Bloody Nose**



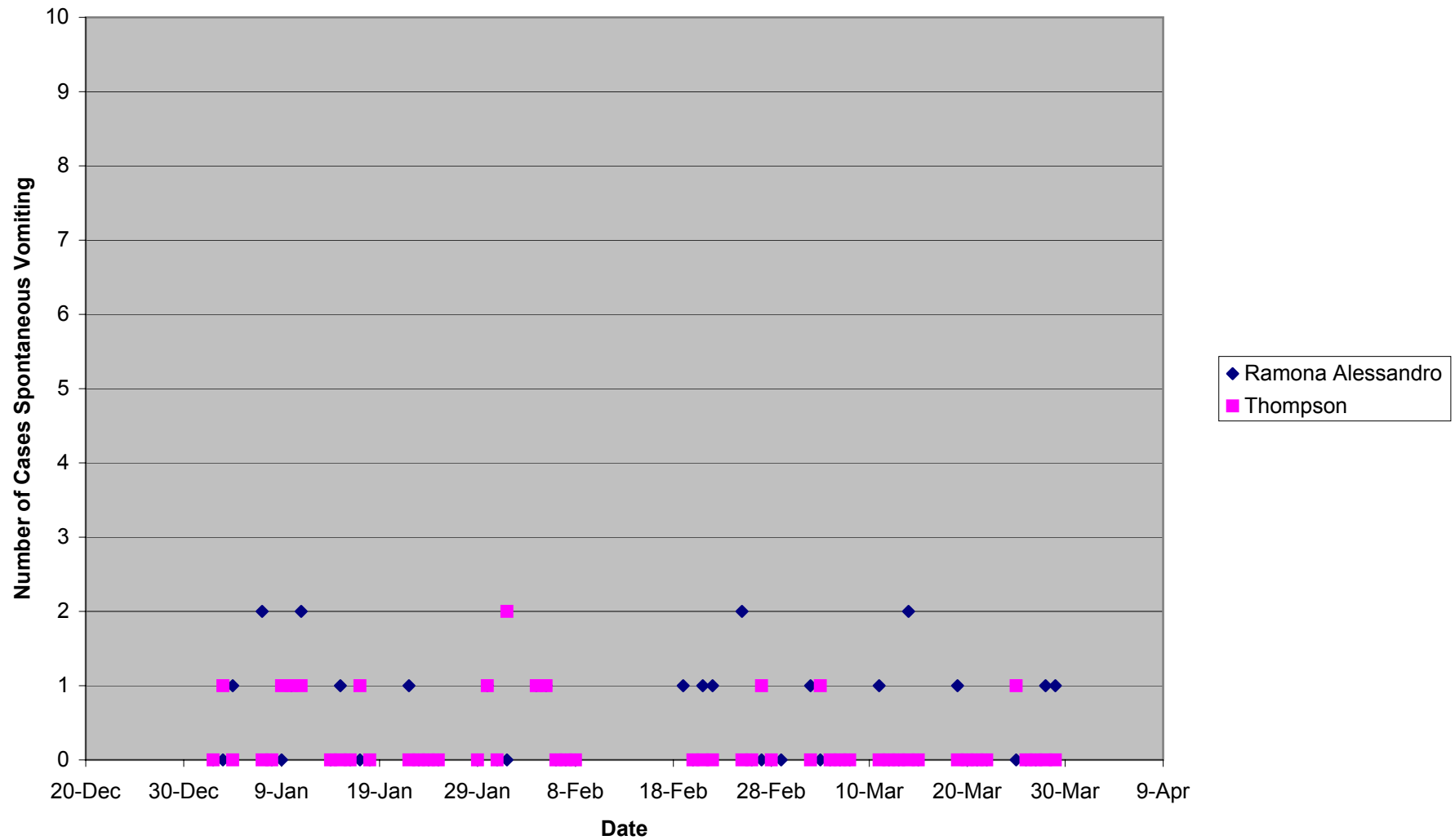
**Figure 6d: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Nausea/Headache**



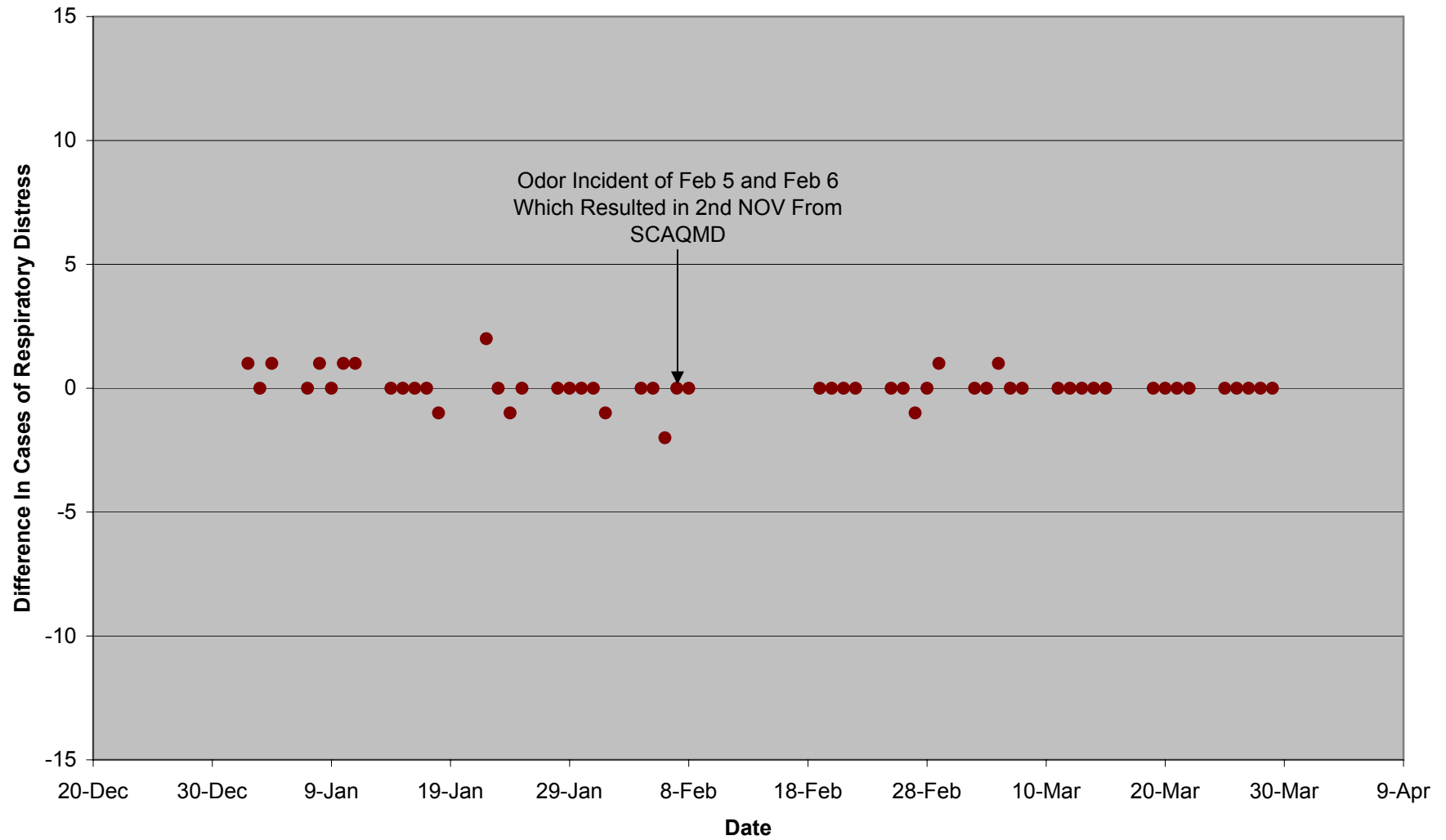
**Figure 6e: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Motion Induced Vomiting**



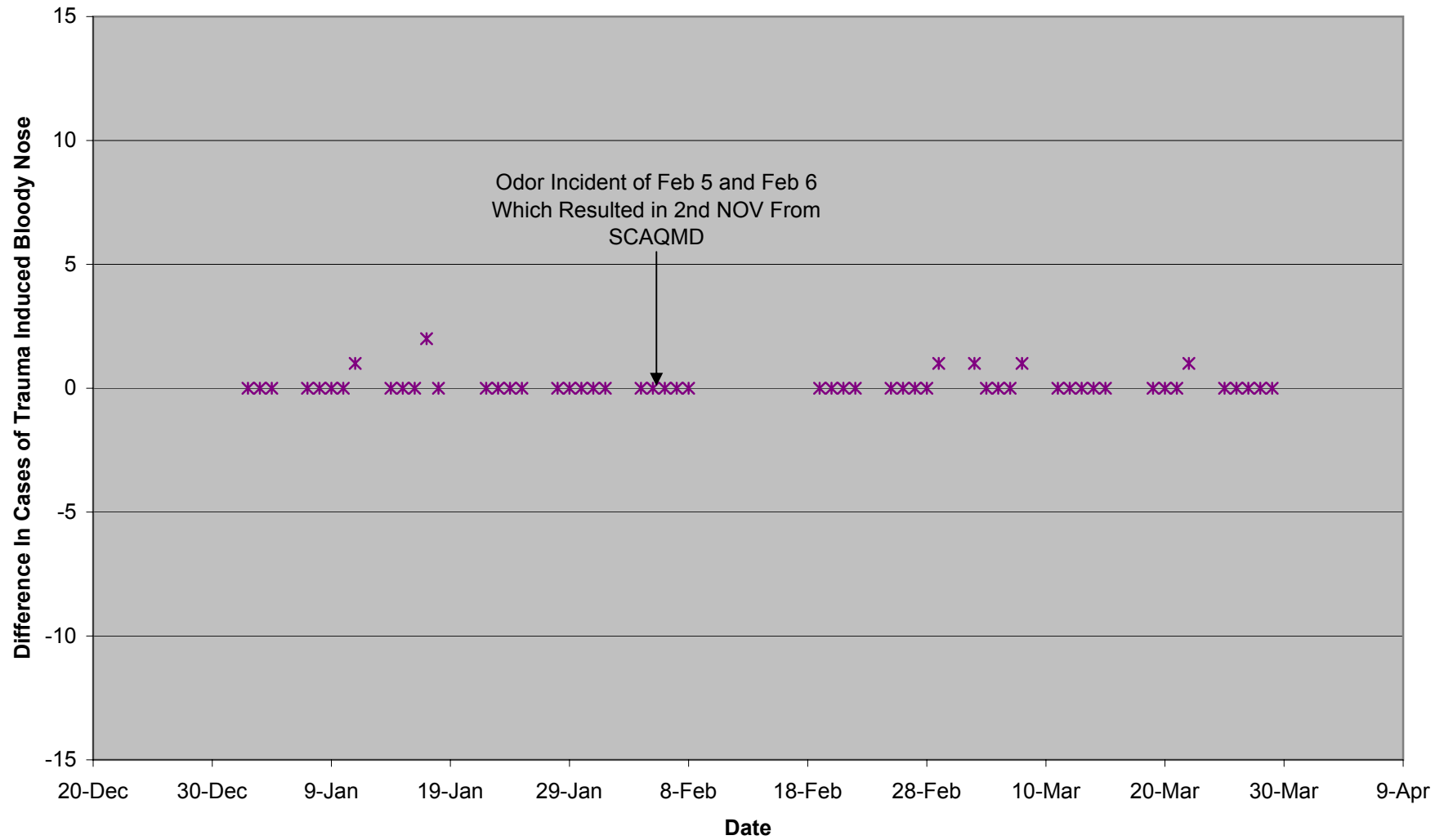
**Figure 6f: School Nursing Logs Ramona Alessandro and Thompson Elementary Schools –
Number of Cases of Spontaneous Vomiting**



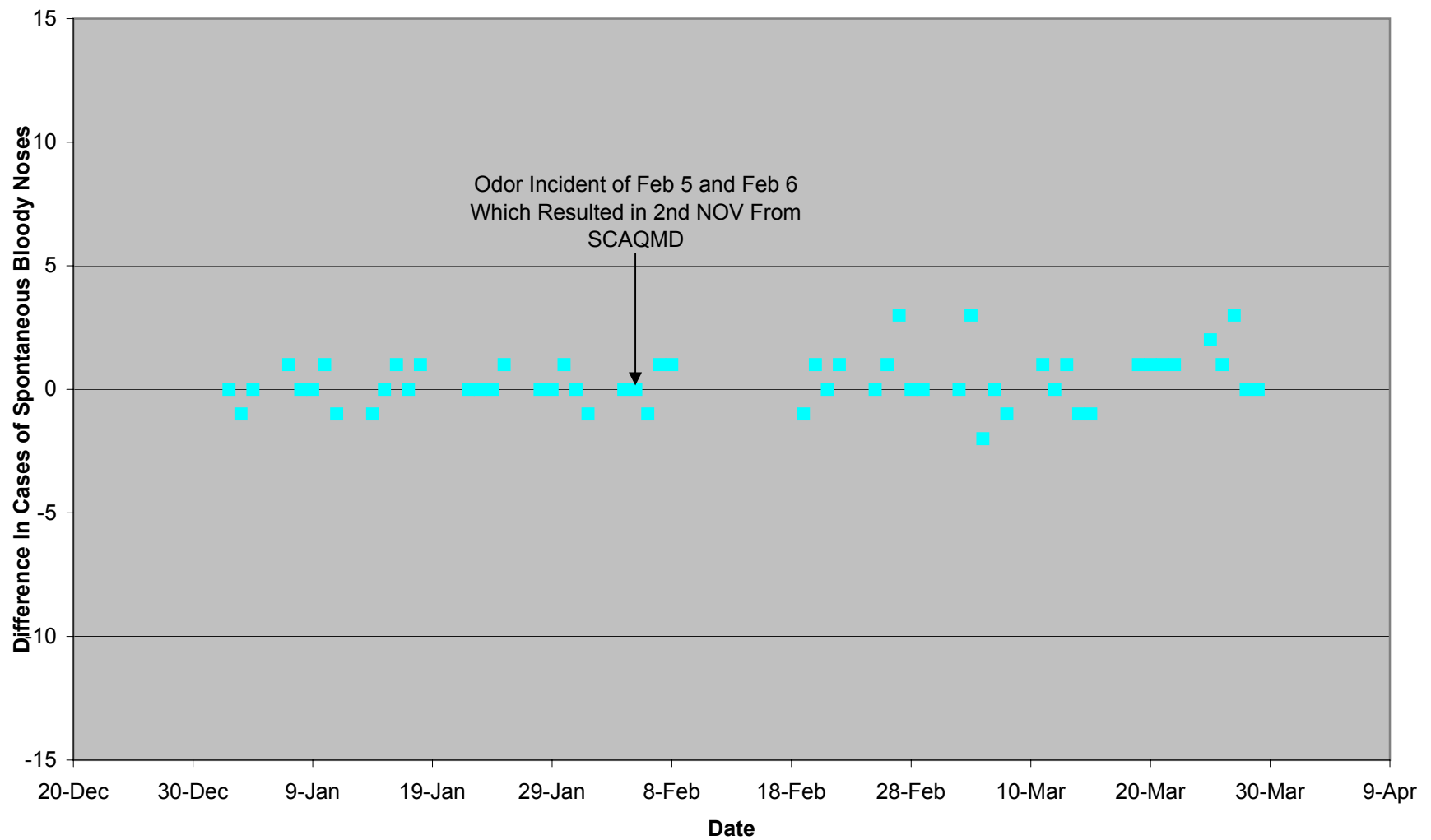
**Figure 6g: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**



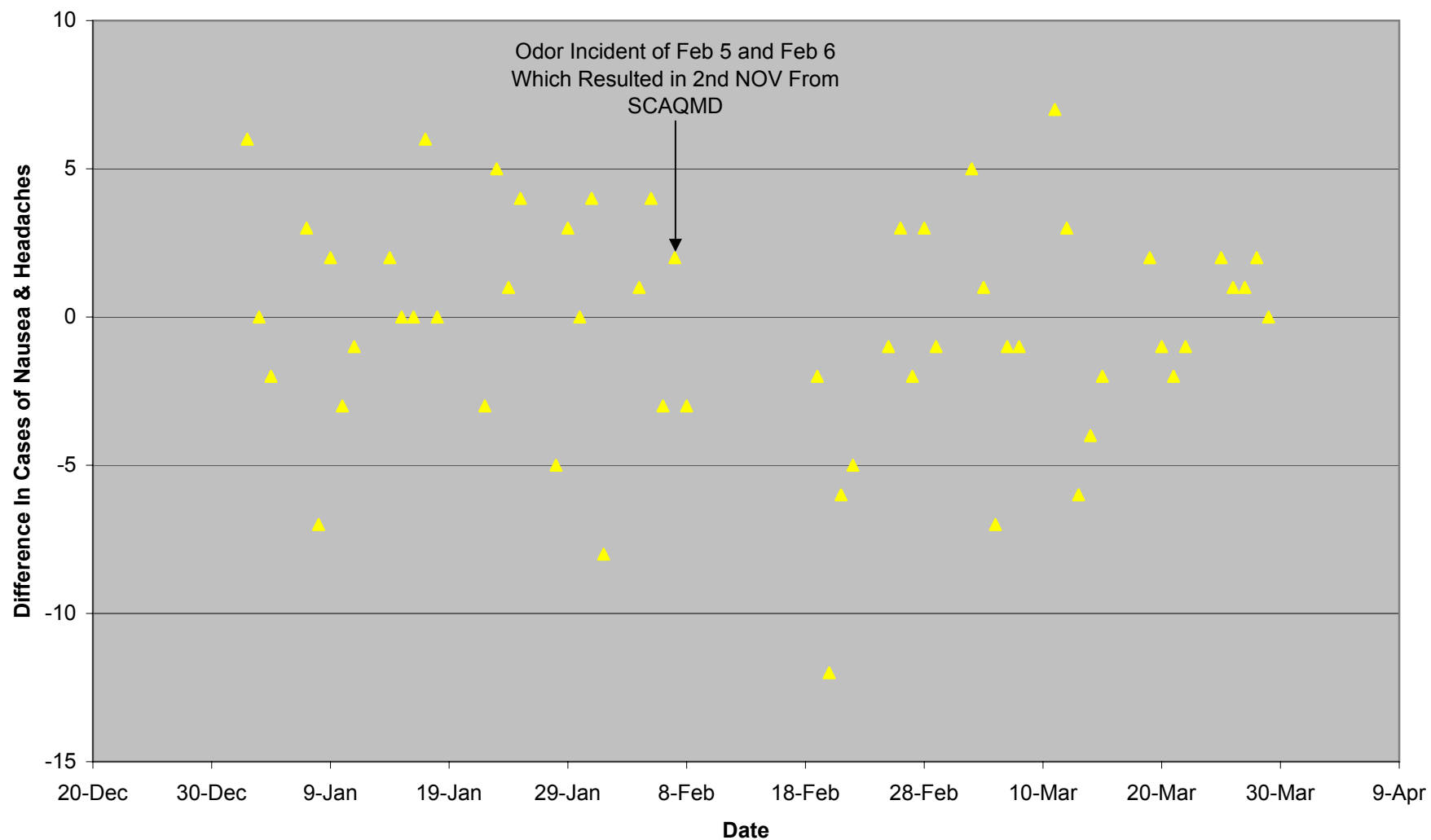
**Figure 6h: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**



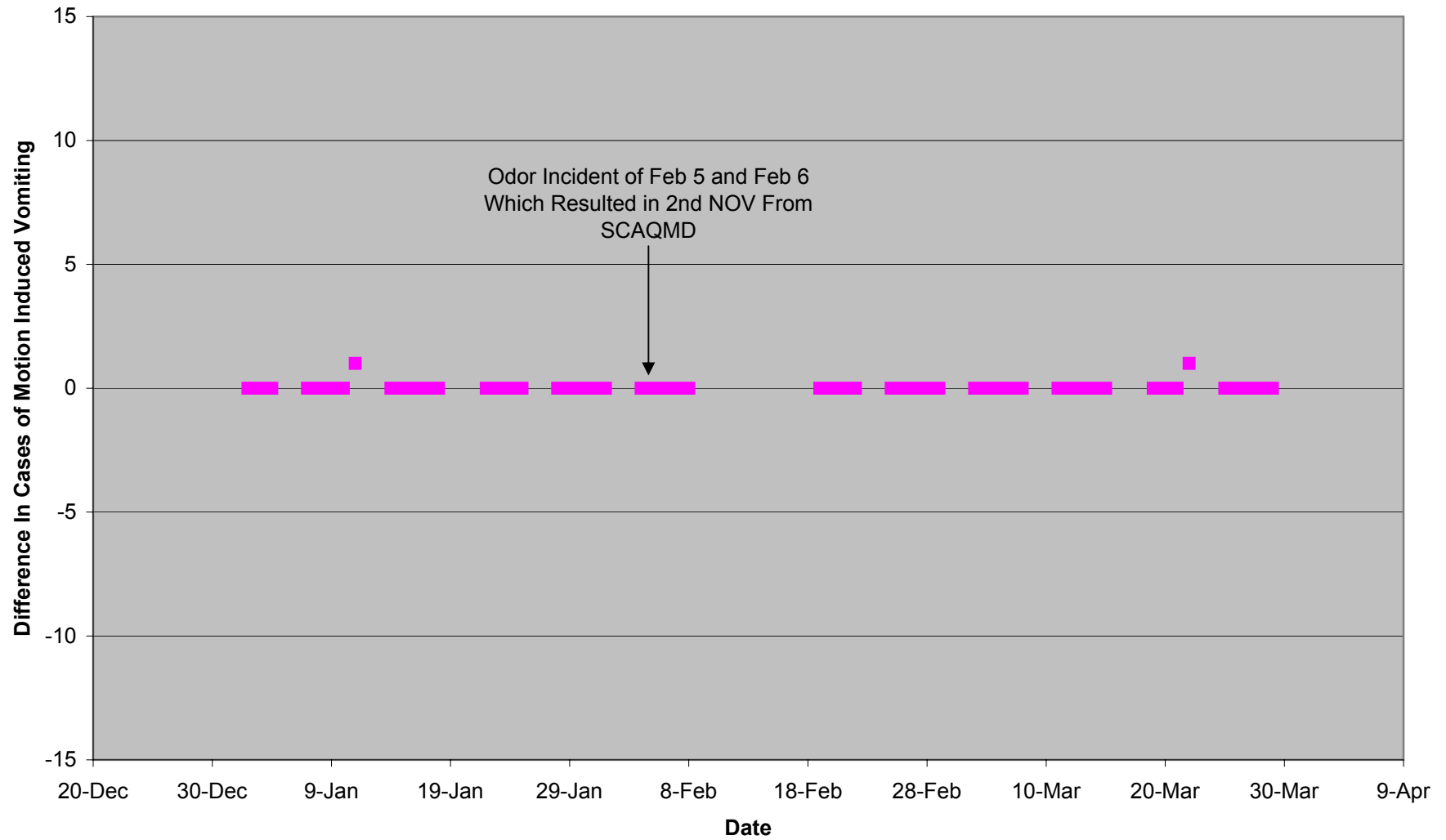
**Figure 6i: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**



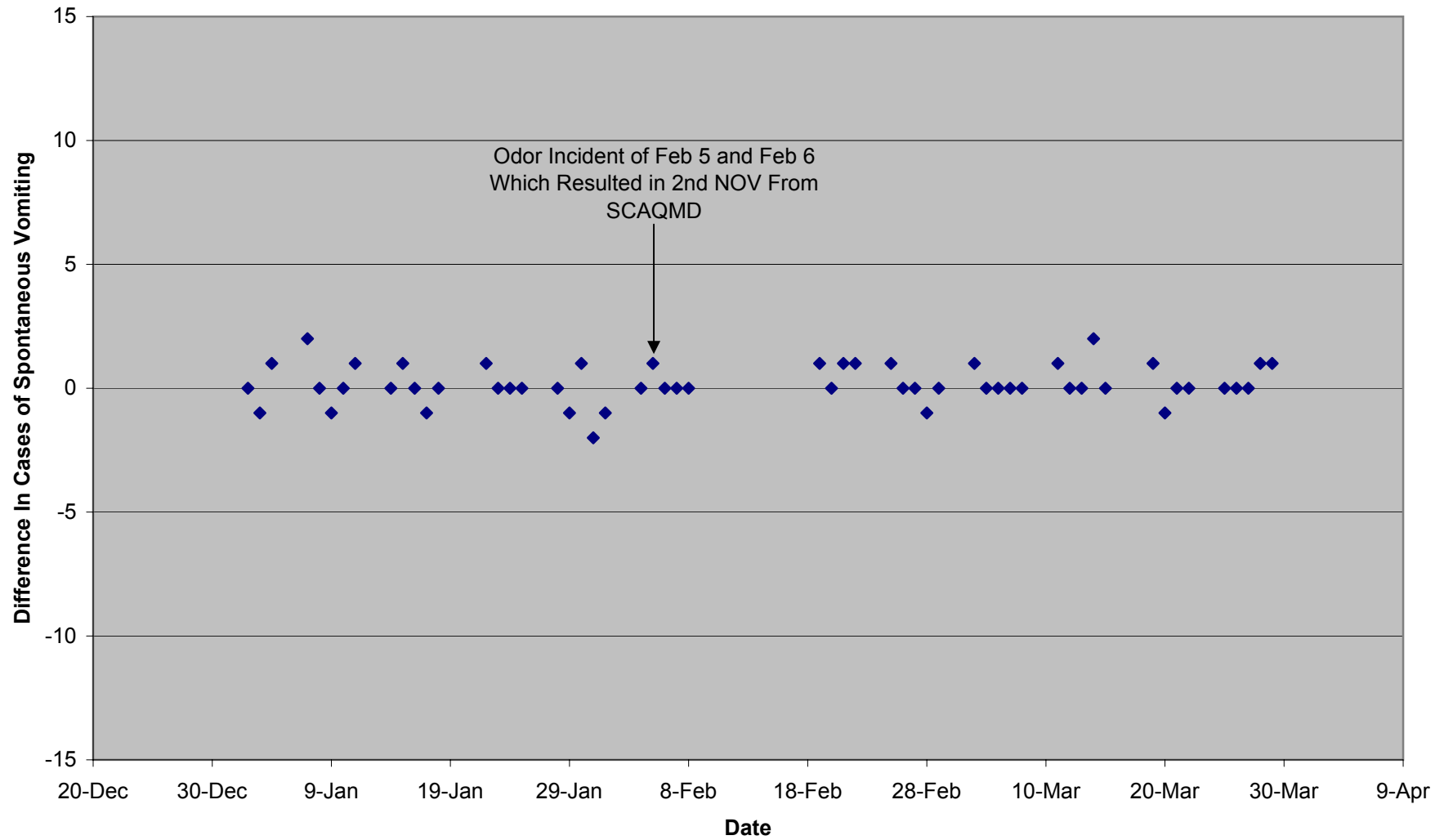
**Figure 6j: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**

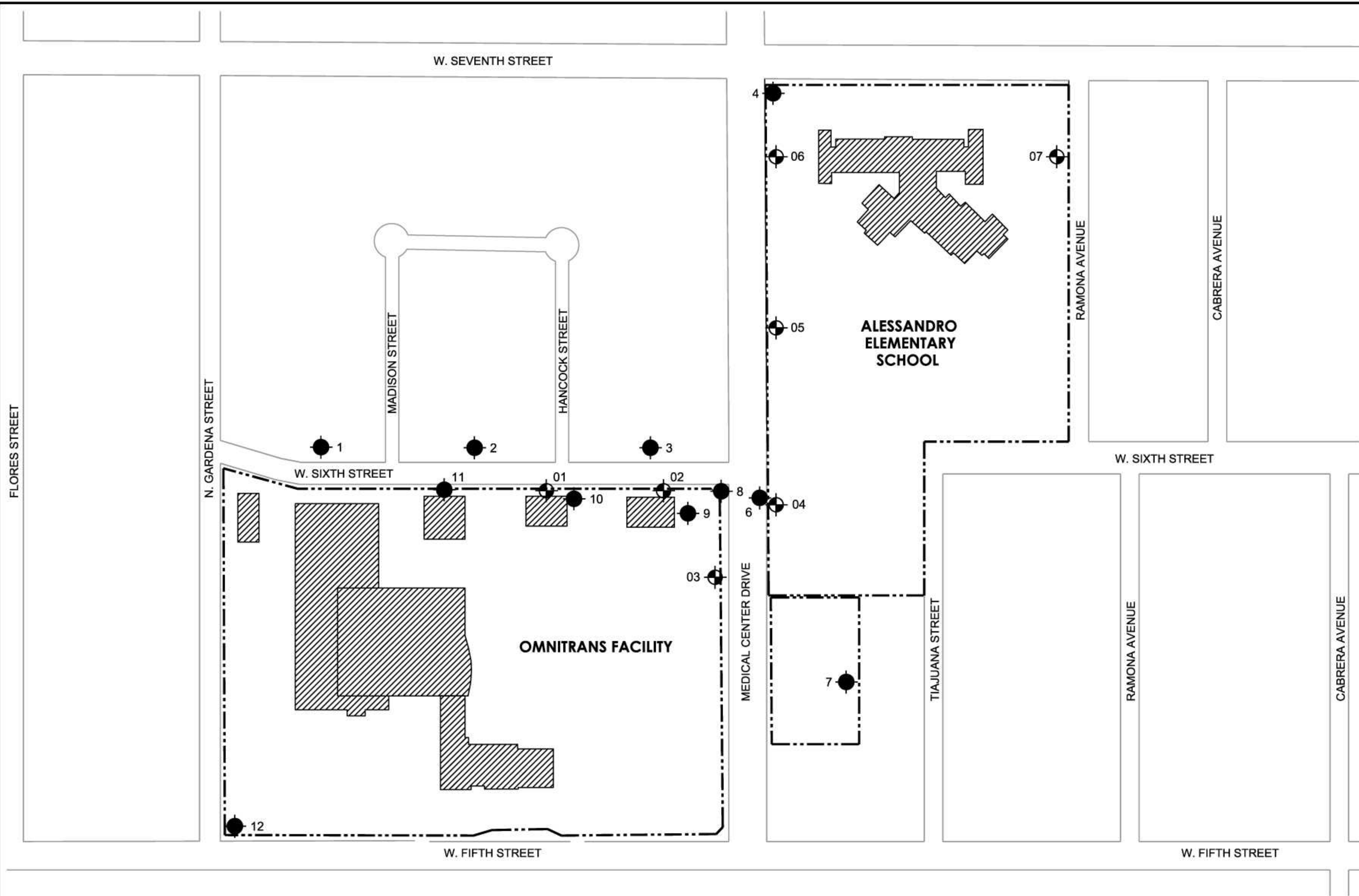


**Figure 6k: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**



**Figure 6I: Scatter Plot Of Absolute Difference Between Reported Symptoms
(Ramona Alessandro Symptoms minus Thompson Symptoms)**





LEGEND

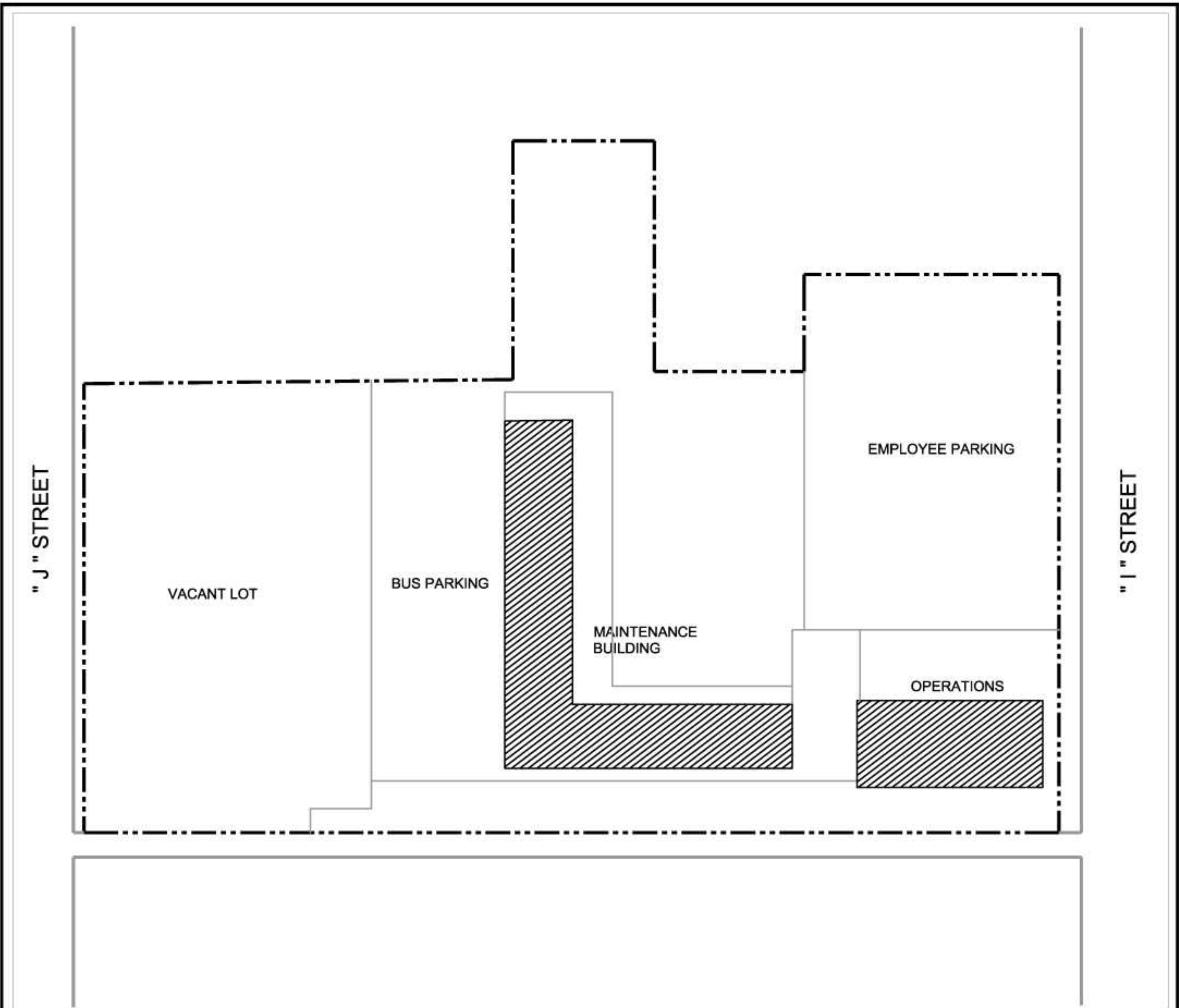
- PROPERTY LINE/SITE BOUNDARY
- 01 SAMPLE LOCATION - ENSAFE
- 1 SAMPLE LOCATION - EXECUTIVE ENVIRONMENTAL SERVICES CORPORATION

NOTES

1. All locations are approximate.
2. Basemap reference provided by Omnitrans, no reference information available.
2. Sample locations based on the following sources:
Figure. Omnitrans, Bus Maintenance Facility, Executive Environmental Services Corporation - Sample Locations. Executive Environmental Services Corporation. No Date.
Figure 1, Sample Locations. Ensafe. No Date.



Title: Site Plan Showing Ambient Air Sampling Locations by Ensafe and Executive Environmental Services Corporation		
Date: 10/30/03	Drafted By: RCH	Figure No: 7
Project No: 015	Approved By: JJJC	



LEGEND

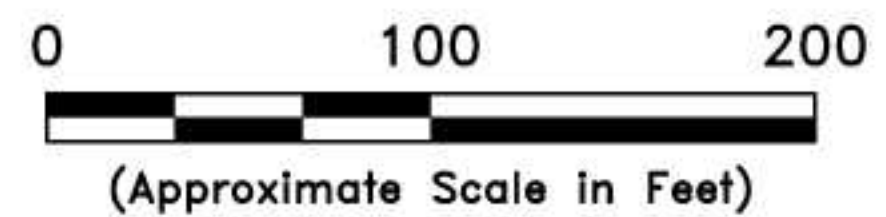
----- PROPERTY LINE/SITE BOUNDARY

NOTES

1. All locations are approximate.
2. Basemap reference provided by Omnitrans, no reference info

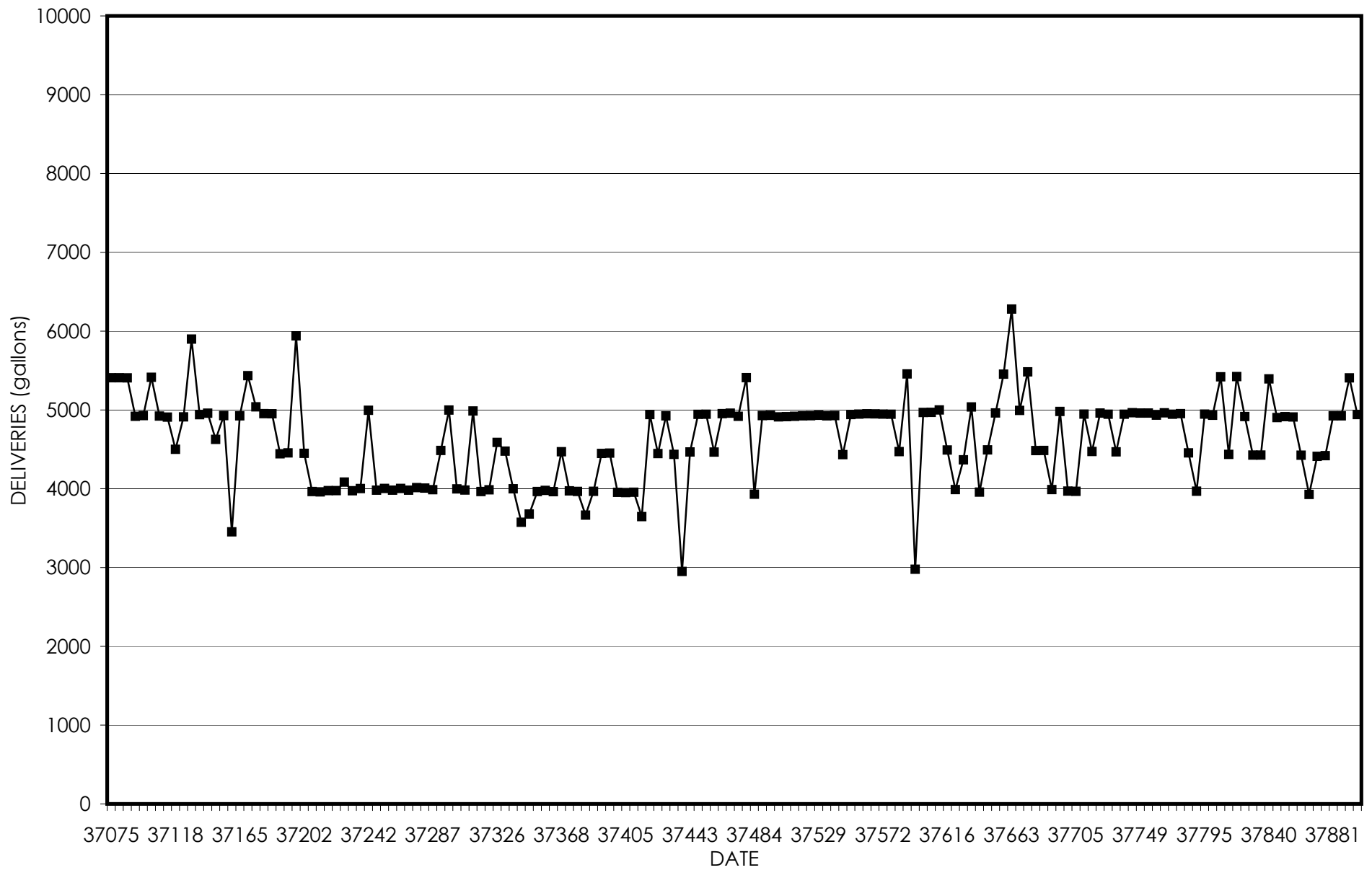


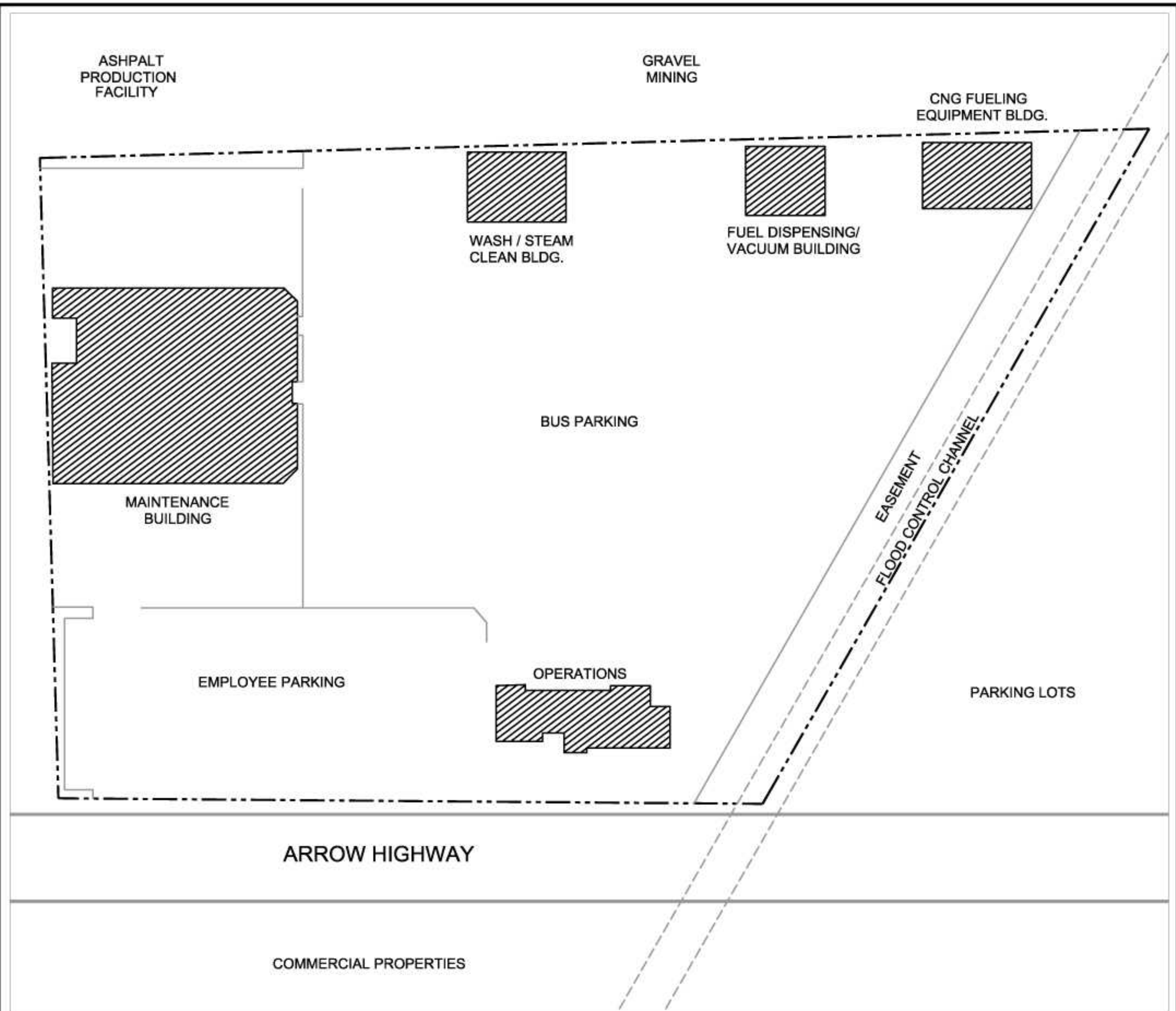
NORTH



Title: Site Plan Showing Omnitrans Fueling Facility - 234 South "I" Street San Bernadino, California		
Date: 10/28/03	Drafted By: RCH	Figure No: 8
Project No: 015	Approved By: JJJC	

Figure 9: Gasoline Deliveries - Omnitrans I Street Fueling Facility, San Bernadino





LEGEND

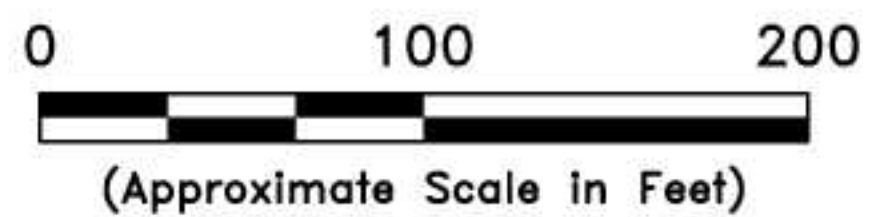
----- PROPERTY LINE/SITE BOUNDARY

NOTES

1. All locations are approximate.
2. Basemap reference provided by Omnitrans, no reference information available.



NORTH



Title: Site Plan Showing Omnitrans
Fueling Facility - 4748 Arrow Highway
Montclair, California

Date: 10/28/03

Drafted By: RCH

Figure No:

Project No: 015

Approved By: JJJC

10

Figure 11: CARB Diesel Deliveries - Omnitrans Arrow Highway Fueling Facility, Montclair

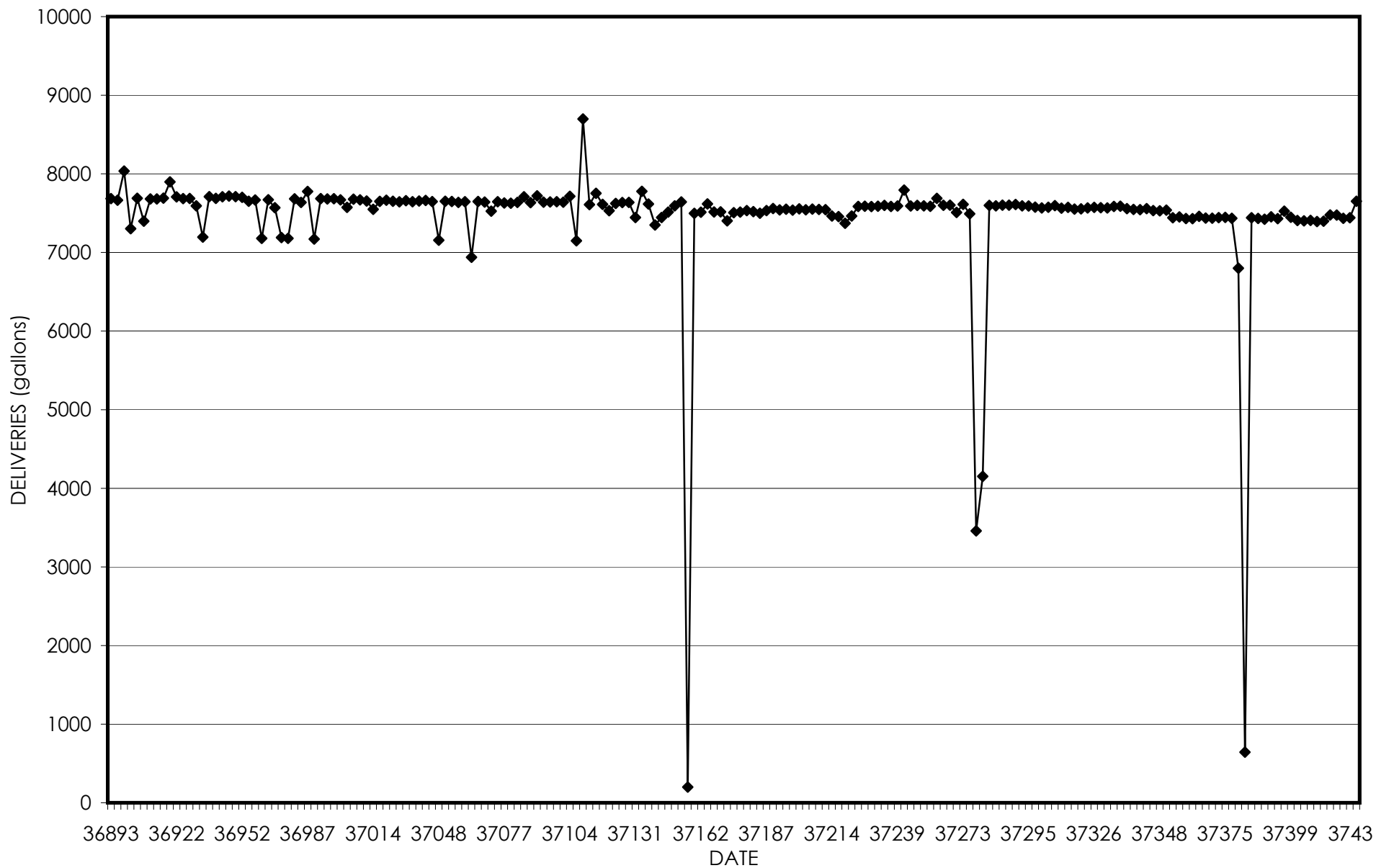


Figure 12: Gasoline Deliveries - Omnitrans Arrow Highway Fueling Facility, Montclair

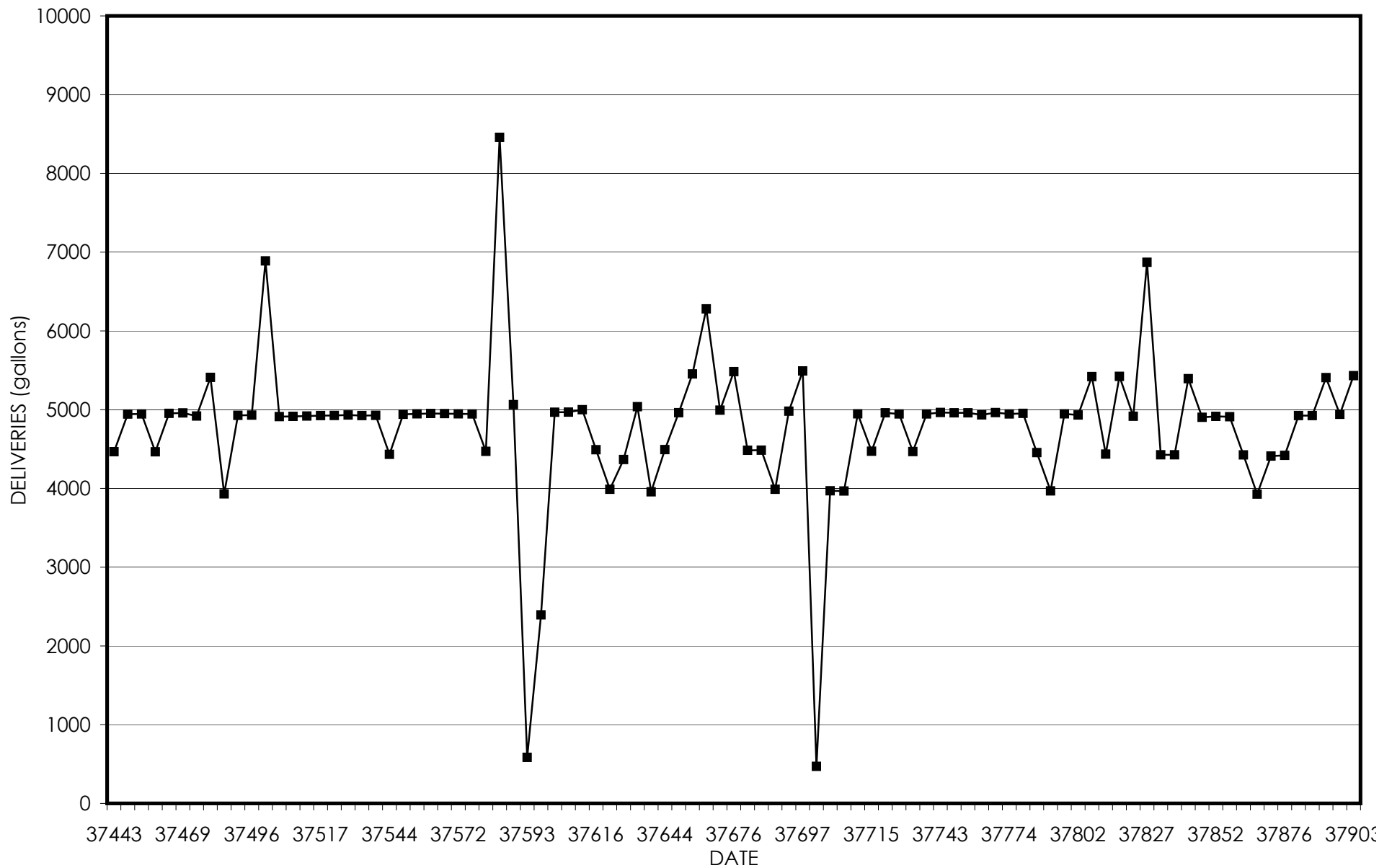


Figure 13: Ultra Low Diesel Deliveries - Omnitrans Arrow Highway Fueling Facility, Montclair

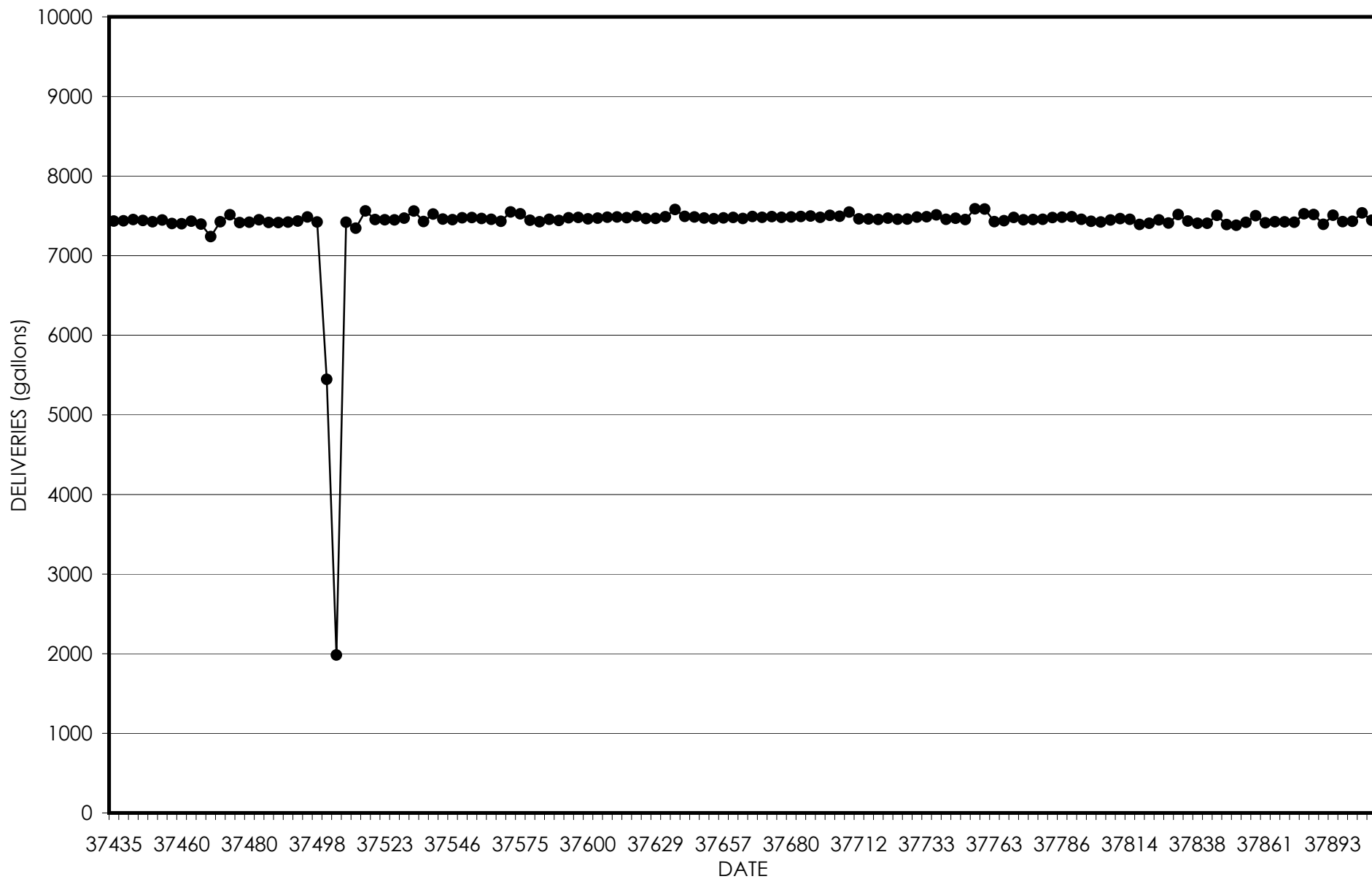
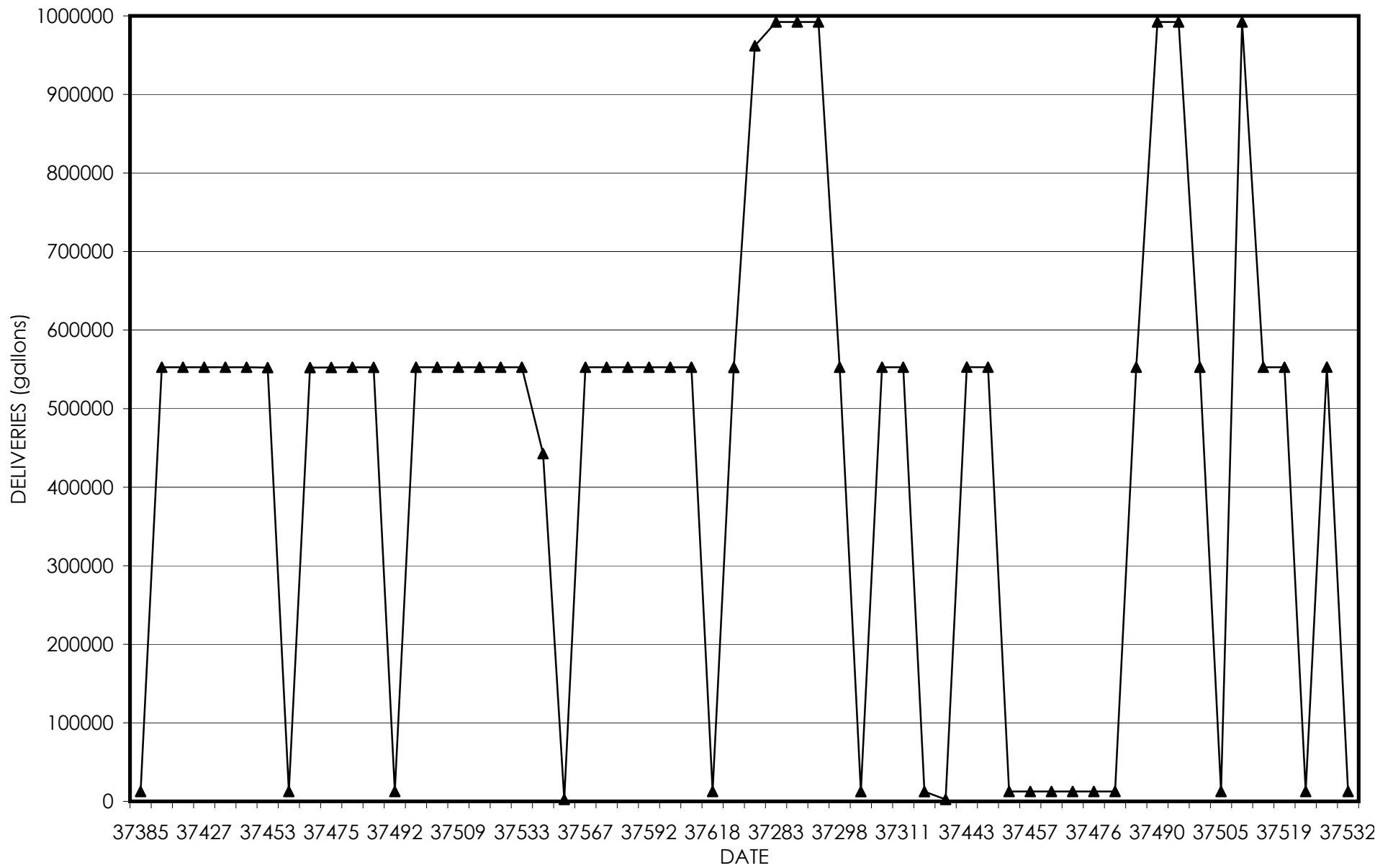
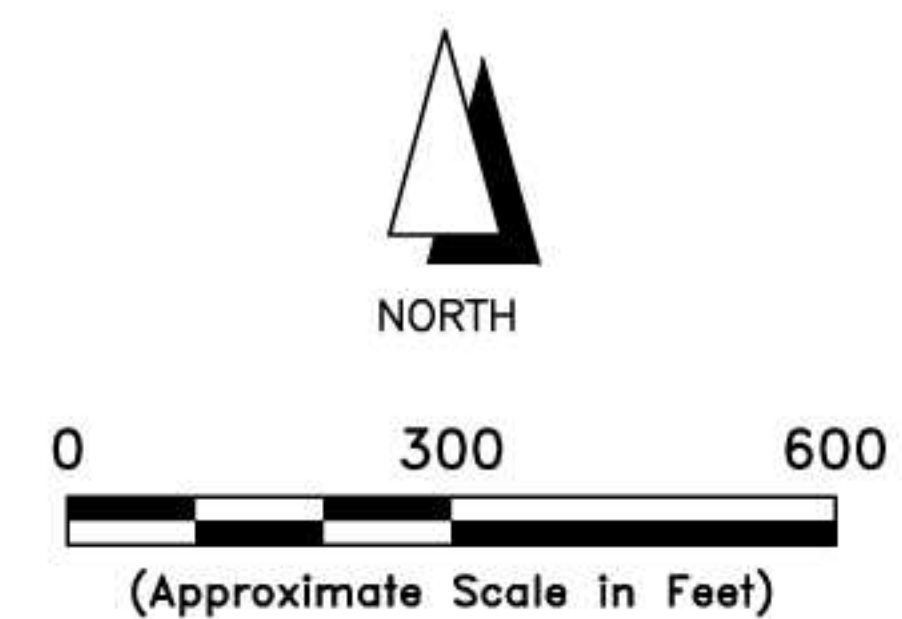




Figure 14: LCNG Deliveries - Omnitrans Arrow Highway Fueling Facility, Montclair





LEGEND

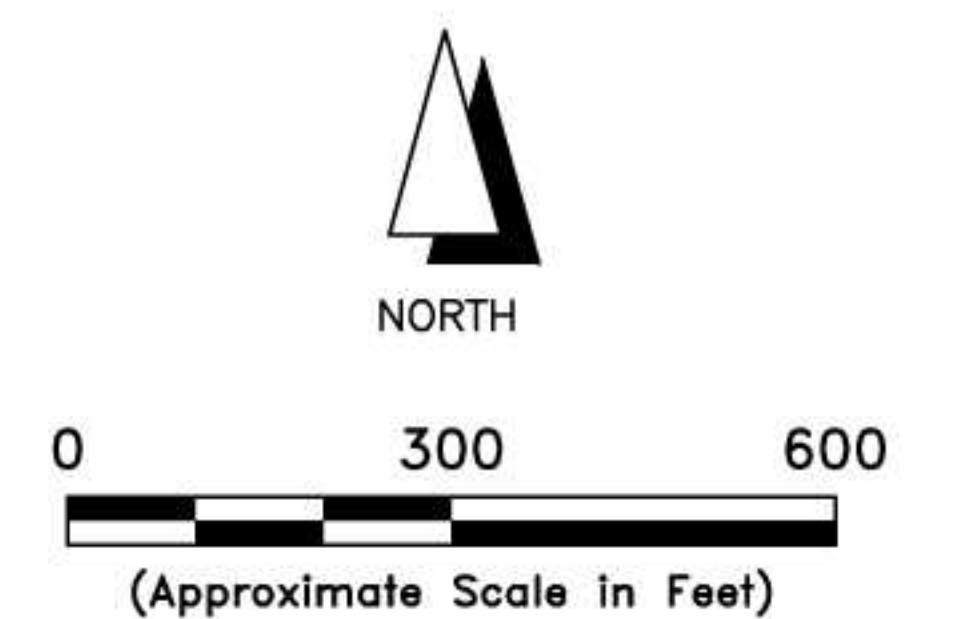
-  PROPERTY LINE/SITE BOUNDARY
-  RESIDENCES SURVEYED

NOTES



1. All locations are approximate.



Title: Residences Surveyed in the Vicinity of the Omnitrans Fueling Facility 1700 West 5th Street, San Bernadino, California		
Date: 11/03/03	Drafted By: RCH	Figure No: 15
Project No: 015	Approved By: JJJC	



LEGEND

-  PROPERTY LINE/SITE BOUNDARY
-  RESIDENCES SURVEYED

NOTES

1. All locations are approximate.



Title: Residences Surveyed in the Vicinity of the Omnitrans Fueling Facility 234 South I Street, San Bernadino, California		
Date: 11/03/03	Drafted By: RCH	Figure No: 16
Project No: 015	Approved By: JJJC	

Table 1
Correlations (5th Street Station)
Marked correlations are significant at $p < .05000$
N=327 (Casewise deletion of missing data)

	Distance From Site	Years Lived In House	Smoker In House	Health at Year 5	Health At Year 3	Health At Year 1
Distance From Site	1	0.08	-0.054	0.141	0.04	0.034
	p= ---	p=.148	p=.328	p=.011	p=.476	p=.541
Years Lived In House		1	0.146	0.037	0.071	0.07
		p= ---	p=.008	p=.510	p=.201	p=.209
Smoker In House			1	-0.026	-0.03	-0.031
			p= ---	p=.644	p=.594	p=.583
Health at Year 5				1	0.785	0.759
				p= ---	p=0.00	p=0.00
Health at Year 3					1	0.969
					p= ---	p=0.00
Health at Year 1						1
						p= ---

Bold values are statistically significant

Table 2
Correlations (I Street Station)
Marked correlations are significant at $p < .05000$
N=151 (Casewise deletion of missing data)

	Distance From Site	Years Lived In House	Smoker In House	Health at Year 5	Health At Year 3	Health At Year 1
Distance From Site	1.000	-0.132	0.018	0.030	0.030	0.015
	p= ---	p=.106	p=.824	p=.713	p=.717	p=.858
Years Lived In House		1.000	0.154	0.120	0.044	0.124
		p= ---	p=.059	p=.143	p=.594	p=.130
Smoker In House			1.00	0.08	-0.11	0.09
			p= ---	p=.312	p=.186	p=.248
Health at Year 5				1.00	0.47	1.00
				p= ---	p=.000	p=0.00
Health at Year 3					1	0.47
					p= ---	p=.000
Health at Year 1						1
						p= ---

Bold values are statistically significant

Table 3
Correlations (Arrow Highway Station)
Marked correlations are significant at $p < .05000$
N=65 (Casewise deletion of missing data)

	Distance From Site	Years Lived In House	Smoker In House	Health at Year 5	Health At Year 3	Health At Year 1
Distance From Site	1	0.1087	0.0843	-0.8362	-0.8156	-0.8362
	p= ---	p=.389	p=.504	p=.000	p=.000	p=.000
Years Lived In House		1	0.00	-0.20	-0.17	-0.20
		p= ---	p=.992	p=.108	p=.170	p=.108
Smoker In House			1	0	0	0
			p= ---	p=1.00	p=1.00	p=1.00
Health at Year 5				1	0.95	1
				p= ---	p=0.00	p= ---
Health at Year 3					1	0.95
					p= ---	p=0.00
Health at Year 1						1
						p= ---

Bold values are statistically significant

Table 4
Correlations (5th Street (modified to 1s 2s.sta)
Marked correlations are significant at $p < .05000$
N=382 (Casewise deletion of missing data)

	Distance to Omnitrans	Age	Sex	Vision	Hearing	Arthritis	Back	Bone	Other	Heart	Stroke	Hypertension	Diabetes	Lung	Cancer	Weight	Kidney	Circulation	Tumor	Lupus	Tendonitis	Seizure	Multiple Sclerosis	Polio	Parkinsons	Carpal Tunnel	Hernia	Ulcer	Graves Disease	Migraine	
Distance to Omnitrans	1.00	-0.02	-0.03	0.01	0.04	0.03	-0.03	0.01	-0.06	-0.02	-0.04	-0.09	-0.13	0.05	-0.09	0.06	-0.01	-0.02	-0.02	0.04	0.00	-0.01	-	0.02	-0.09	0.02	-0.02	-0.02	-0.11	0.05	
Age	p=---	p=687	p=627	p=818	p=445	p=624	p=571	p=816	p=227	p=746	p=398	p=075	p=013	p=380	p=086	p=218	p=796	p=751	p=718	p=420	p=950	p=836	p=---	p=688	p=065	p=632	p=769	p=769	p=030	p=368	
Sex	p=---	1.00	0.06	0.21	0.24	0.29	0.20	0.19	0.10	0.17	0.06	0.31	0.29	0.01	0.11	0.08	0.04	0.19	0.01	0.08	0.08	-0.04	p=---	-0.01	0.10	0.13	0.12	0.03	0.15	0.01	
Vision	p=---	p=250	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.055	p=0.001	p=229	p=0.000	p=0.000	p=0.000	p=832	p=0.037	p=139	p=426	p=0.000	p=853	p=133	p=133	p=483	p=---	p=907	p=0.044	p=0.013	p=0.022	p=507	p=0.004	p=897	
Hearing	p=---	1.00	-0.03	-0.05	0.06	-0.02	0.06	-0.09	-0.02	-0.06	0.01	-0.07	-0.09	0.04	0.02	0.04	0.02	-0.01	0.04	0.05	0.03	0.00	p=---	-0.05	-0.09	0.08	-0.06	0.05	0.08	0.01	
Arthritis	p=---	p=577	p=348	p=240	p=638	p=266	p=067	p=630	p=267	p=817	p=157	p=079	p=489	p=731	p=394	p=831	p=489	p=369	p=626	p=941	p=---	p=343	p=067	p=127	p=267	p=369	p=129	p=786	p=0.000	p=0.000	
Back	p=---	1.00	0.36	0.23	0.24	0.12	-0.04	0.16	0.03	0.20	0.23	0.14	0.07	0.24	0.04	0.14	0.07	0.11	0.14	0.08	0.08	p=---	-0.02	0.05	0.14	0.18	0.11	-0.05	0.09	0.00	
Bone	p=---	1.00	0.33	0.31	0.19	0.12	0.18	0.09	0.23	0.19	0.27	-0.03	0.34	-0.04	0.19	0.07	0.09	0.25	0.02	-0.02	-0.02	p=---	-0.02	0.02	0.20	0.21	0.09	-0.03	0.11	0.00	
Other	p=---	p=0.000	p=0.000	p=0.000	p=0.000	p=0.023	p=0.001	p=0.064	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.573	p=0.000	p=489	p=0.000	p=185	p=0.064	p=0.000	p=746	p=---	p=0.000	p=692	p=0.000	p=0.000	p=0.064	p=0.573	p=0.038	
Heart	p=---	1.00	0.40	0.29	0.22	0.21	0.08	0.37	0.30	0.18	0.05	0.29	0.03	0.31	-0.03	0.08	0.22	0.02	-0.01	-0.02	0.04	0.28	0.18	0.22	0.04	0.00	0.00	0.00	0.469	0.00	
Stroke	p=---	1.00	0.25	0.24	0.23	0.09	0.29	0.34	0.25	0.06	0.26	0.19	0.24	0.06	0.09	0.11	0.14	-0.01	-0.02	0.27	0.31	0.09	0.06	0.24	0.00	0.00	0.00	0.00	0.469	0.00	
Hypertension	p=---	p=0.000	p=0.000	p=0.000	p=0.000	p=0.086	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.227	p=0.086	p=0.034	p=0.006	p=---	p=810	p=676	p=0.000	p=0.000	p=0.086	p=0.227	p=0.000	
Diabetes	p=---	1.00	0.36	-0.03	-0.02	0.24	0.07	0.18	-0.02	0.14	-0.03	0.21	-0.02	0.17	-0.01	-0.01	-0.01	0.13	-0.01	-0.01	-0.01	p=---	p=870	p=776	p=0.000	p=0.000	p=0.005	p=0.030	p=396	0.00	
Lung	p=---	1.00	0.09	0.12	0.08	0.15	0.01	-0.01	0.28	-0.01	0.28	-0.01	0.28	-0.01	0.28	-0.01	0.28	-0.01	0.28	-0.01	0.28	p=---	-0.01	0.23	-0.02	-0.01	0.19	-0.02	0.09	0.00	
Cancer	p=---	p=0.088	p=0.020	p=0.125	p=0.003	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=0.800	p=---	p=900	p=0.000	p=702	p=800	p=0.000	p=756	p=0.092	0.00	
Weight	p=---	1.00	0.06	0.24	0.09	-0.02	0.30	0.18	-0.01	-0.02	0.30	0.18	-0.01	-0.02	0.30	0.18	-0.01	-0.02	0.30	0.18	-0.01	-0.02	0.30	0.18	-0.01	-0.02	0.30	0.18	-0.01	0.04	
Kidney	p=---	p=230	p=0.000	p=0.088	p=0.696	p=0.000	p=0.088	p=0.696	p=0.000	p=0.088	p=0.696	p=0.000	p=0.088	p=0.696	p=0.000	p=0.088	p=0.696	p=0.000	p=0.088	p=0.696	p=0.000	p=---	p=846	p=735	p=0.003	p=0.022	p=0.222	p=631	p=0.015	0.00	
Circulation	p=---	1.00	0.23	0.12	0.15	-0.01	0.23	-0.01	0.18	0.09	-0.02	-0.02	0.26	0.21	0.02	0.26	0.21	0.02	0.26	0.21	0.02	0.26	0.21	0.02	0.26	0.21	0.02	0.26	0.21	0.00	
Tumor	p=---	p=0.000	p=0.020	p=0.003	p=0.788	p=0.000	p=---	p=877	p=0.000	p=0.080	p=0.756	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=---	p=835	p=717	p=0.001	p=---	p=835	p=0.000	p=0.675	p=0.000	p=0.085
Lupus	p=---	1.00	-0.01	-0.01	0.28	-0.01	-0.01	-0.02	-0.01	0.19	-0.02	0.09	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.09	0.00	p=---	-0.01	-0.01	-0.02	-0.01	0.19	-0.02	0.09	0.00	
Tendonitis	p=---	p=858	p=884	p=---	p=918	p=858	p=0.005	p=837	p=837	p=0.000	p=0.000	p=470	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.15	-0.01	-0.01	0.19	-0.04	0.00	0.00	
Seizure	p=---	1.00	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	
Multiple Sclerosis	p=---	p=942	p=900	p=826	p=884	p=884	p=858	p=827	p=236	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	
Polio	p=---	1.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00
Parkinson	p=---	1.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00
Carpal Tunnel	p=---	1.00	0.15	0.15	0.26	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	
Hernia	p=---	1.00	0.24	-0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	
Ulcer	p=---	1.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00
Graves Disease	p=---	1.00	0.15	0.15	0.26	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	
Migraine	p=---	1.00	0.15	0.15	0.26	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	p=---	-0.01	-0.01	0.38	0.28	0.28	0.23	0.15	0.00	0.00	0.00

Bold values are statistically significant

Table 6
Correlations (Arrow Highway 1 2.sta)
Marked correlations are significant at $p < .05000$
N=64 (Casewise deletion of missing data)

	Distance to Omnitrans	Age	Sex	Vision	Hearing	Arthritis	Back	Bone	Other	Heart	Stroke	Hypertensio n	Diabetes	Lung	Cancer	Weight	Kidney	Circulation	Tumor	Lupus	Tendonitis	Seizure	Multiple Sclerosis	Polio	Parkinsons	Carpal Tunnel	Hernia	Ulcer	Graves Disease	Migraine	
Distance to Omnitrans		0.2035	-0.193	-0.04	--	--	--	--	--	0.1256	--	-0.0409	-0.1086	--	0.1256	-0.053	-0.053	--	--	--	--	--	1	--	--	-0.053	--	--	-0.053	-0.053	
Age	p=---	p=.107	p=.126	p=.754	p=---	p=---	p=---	p=---	p=---	p=.323	p=.748	p=.393	p=---	p=.323	p=.677	p=.677	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.677	p=---	p=---	p=.677	p=.677		
Sex	p=---	1	-0.2583	0.0316	--	--	--	--	--	0.1767	--	0.2275	0.1467	--	0.2479	-0.1144	0.1314	--	--	--	--	--	--	--	--	p=.677	--	--	p=.677	p=.677	
Vision	p=---	p=---	p=.039	p=.804	p=---	p=---	p=---	p=---	p=---	p=.162	p=---	p=.071	p=.247	p=---	p=.048	p=.368	p=.301	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.531	p=---	p=---	p=.531	p=.531	
Hearing	p=---	p=---	p=---	1	--	--	--	--	--	0.1042	p=---	-0.1176	-0.0493	--	-0.1523	0.1042	0.1042	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	-0.1523	p=---	p=---	-0.1523	-0.1523	
Arthritis	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.412	p=---	p=.355	p=.699	p=---	p=.230	p=.412	p=.412	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.230	p=---	p=---	p=.230	p=.230		
Back	p=---	p=---	p=---	p=---	1	--	--	--	--	0.4328	p=---	-0.0646	0.1654	--	-0.0367	0.4328	-0.0367	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.230	p=---	p=---	-0.0367	-0.0367		
Bone	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.000	p=---	p=.612	p=.192	p=---	p=.774	p=.000	p=.774	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.774	p=---	p=---	p=.774	p=.774		
Other	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Heart	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	-0.0279	-0.0325	--	-0.0159	-0.0159	-0.0159	p=---	p=---	p=---	p=---	p=---	p=---	p=---	-0.0159	p=---	p=---	-0.0159	-0.0159		
Stroke	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	--	--	--	--	--	p=---	p=---	p=---	p=---	p=---	p=---	p=---	--	p=---	p=---	p=---	p=---	p=---	
Hypertension	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	0.2481	p=---	-0.0279	-0.0279	0.5681	p=---	p=---	p=---	p=---	p=---	p=---	p=---	0.5681	p=---	p=---	0.5681	0.5681		
Diabetes	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=.048	p=.827	p=.827	p=.000	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.000	p=---	p=.000	p=.000	p=.000	
Lung	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=.799	p=.799	p=.000	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=.799	p=---	p=.799	p=.799	p=.799	
Cancer	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	-0.0159	-0.0159	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	-0.0159	p=---	-0.0159	-0.0159	-0.0159	
Weight	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	-0.0159	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	-0.0159	p=---	-0.0159	-0.0159	-0.0159	
Kidney	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	-0.0159	p=---	-0.0159	-0.0159	-0.0159	
Circulation	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Tumor	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Lupus	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Tendonitis	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Seizure	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	
Multiple Sclerosis	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---
Polio	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---	p=---
Parkinson	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	p=---	p=---	p=---	p=---	p=---	p=---
Carpal Tunnel	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	--	1	1	
Hernia	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	--	p=---	p=---	
Ulcer	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	--	p=---	p=---
Graves Disease	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	--	1
Migraine	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	p=---	1	--	1

Bold values are statistically significant

Table 7:

Chemical Compounds Emitted From Each Facility

Site ID Number	Source	Contaminant
1	Metro Station	LCNG, Unleaded Gasoline, R-134a refrigerant, Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzly Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone
2	The Taco Kid Restaurant	Acetaldehyde
3	Prieto Auto Body Shop	Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzly Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone
4	San Bernardino Intermodal Facility	Diesel Particulates
5	Yellow Cab Bell Cabstop	Toluene, Xylene, Acetone, Methyl Alcohol, 2-Butoxyethanol, Methylene Chloride, Ethyl Benzene, 2-Propanone, Carbon Dioxide
6	4 th Street Rock	PM10, Diesel particulates

Table 8:

Chemical Compounds Emitted From Each Facility

Site ID Number	Source	Contaminant
1	I Street Station	Unleaded Gasoline, Diesel Fuel, Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzyl Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone
2	Royal Coach Auto Body	Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzyl Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone
3	G & M Oil #67 Chevron Service Station (Upwind of station)	Gasoline vapor
4	Family Cleaners	Perchloroethylene
5	Shell Service Station	Gasoline vapor
6	Arco Smog and Gas Station (Downwind of station)	Gasoline vapors
7	Fairview Ford	Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzyl Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone

Table 9:

Chemical Compounds Emitted From Each Facility

Site ID Number	Source	Contaminant
1	West Valley Station	LCNG, Unleaded Gasoline, R-134a refrigerant, Methyl Ethyl Ketone, Toluene, Acetone, Butyl Benzyl Phthalate, Isopropanol, VM&P Naphtha, Toluene, Ethyl Benzene, Xylene, Isobutyl Alcohol, Acetone
2	Pep Boys	Toluene, Xylene, Acetone, Methyl Alcohol, 2-Butoxyethanol, Others, , Methylene Chloride, Ethyl Benzene, 2-Propanone, Carbon Dioxide, Ethylene Glycol Butyl Ether, Sodium Tripolyphosphate, Linear Alkylbenzene Sulfonate
3	Fire Station	Diesel particulates and gasoline vapor
4	Grease Monkey	Toluene, Xylene, Acetone, Methyl Alcohol, 2-Butoxyethanol, Others, , Methylene Chloride, Ethyl Benzene, 2-Propanone, Carbon Dioxide, Ethylene Glycol Butyl Ether, Sodium Tripolyphosphate, Linear Alkylbenzene Sulfonate
5	Metro Station	Diesel particulates
6	Specto Optical	Acetone
7	Arrow Collision Center	Methyl Ethyl Ketone, Toluene, Acetone,

Table 10
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Worker

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m ³	mg/m ³			URF	CPF	MICR	REL/RfC ug/m ³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Metro Station Gaslone 19 K /mo 34.51 lbs TOG	7.65E+00	7.65E-03	1.1E-01	MEK				1.00E+03	2.90E-01							4.4E-04	
	7.65E+00	7.65E-03	4.5E-01	Toluene				3.00E+02	8.60E-02	6.1E-03	6.1E-03						
	7.65E+00	7.65E-03	1.4E-01	Acetone				3.50E-02	1.00E-01					1.6E-03	1.6E-03		
	7.65E+00	7.65E-03	8.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						4.7E-04		
	7.65E+00	7.65E-03	7.0E-02	Isopropanol				2.30E+03	6.60E-01	1.2E-04							
	7.65E+00	7.65E-03	7.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	8.7E-05							
	7.65E+00	7.65E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			4.1E-05		4.1E-05	4.1E-05	4.1E-05	
	7.65E+00	7.65E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	2.3E-04	2.3E-04						
	7.65E+00	7.65E-03	4.0E-02	Isobutyl Alcohol													
	7.01E+00	7.01E-03	1.0E+00	Gasoline vapor	2.90E-05	5.60E-03	3.50E-06	2.10E+03	6.00E-01	1.8E-03							
Prieto Auto Body lbs/mo 240.195 1.38 lb/hr	5.03E+00	5.03E-03	1.2E-01	MEK				1.00E+03	2.90E-01							3.2E-04	
	5.03E+00	5.03E-03	4.9E-01	Toluene				3.00E+02	8.60E-02	4.4E-03	4.4E-03						
	5.03E+00	5.03E-03	1.5E-01	Acetone				3.50E-02	1.00E-01					1.2E-03	1.2E-03		
	5.03E+00	5.03E-03	9.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						3.5E-04		
	5.03E+00	5.03E-03	8.0E-02	Isopropanol				2.30E+03	6.60E-01	9.3E-05							
	5.03E+00	5.03E-03	8.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	6.5E-05							
	5.03E+00	5.03E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			2.7E-05		2.7E-05	2.7E-05	2.7E-05	
	5.03E+00	5.03E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	1.5E-04	1.5E-04						
	5.03E+00	5.03E-03	4.0E-02	Isobutyl Alcohol													
Yellow Cab lbs/mo 52.43 .30 lb/hr	1.07E+00	1.07E-03	5.0E-02	Toluene				3.00E+02	8.60E-02	9.5E-05	9.5E-05						
	1.07E+00	1.07E-03	2.0E-02	Acetone				3.50E-02	1.00E-01					3.3E-05	3.3E-05		
	1.07E+00	1.07E-03	4.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			1.1E-05		1.1E-05	1.1E-05	1.1E-05	
	1.07E+00	1.07E-03	1.9E-01	Xylene				7.00E+02	2.00E-01	1.6E-04	1.6E-04						
	1.07E+00	1.07E-03	2.0E-02	Methyl Alcohol													
	1.07E+00	1.07E-03	3.0E-02	Others (Inert)													
	1.07E+00	1.07E-03	1.9E-01	Methylene Chloride													
	1.07E+00	1.07E-03	6.0E-02	Carbon Dioxide													
	1.07E+00	1.07E-03	3.4E-01	2-Propanone													
TACO KID																	
0.229 lb/hr	1.95E-01	1.95E-04	1.0E+00	Acetaldehyde	2.7E-06	1.0E-02	1.70E-07	9.0E+00	2.6E-03	1.1E-02							
Total							3.7E-06			2.5E-02		8.0E-05	0.0E+00	2.9E-03	3.7E-03	8.4E-04	0.0E+00

Note: Exposure Factors used to calculate contaminant intake

Exposure Frequency	days/year	240
Exposure Duration	years	40
Inhalation Rate	m ³ /day	16.7
Average Body Weight	kilogram	71.8
Average Time - Cancer	days	25550
Average Time - Noncancer	days	14600

Table 11
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Cumulative Risk Resident

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m³	mg/m³			URF	CPF	MICR	REL/RfC ug/m³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Metro Station	7.65E+00	7.65E-03	1.1E-01	MEK				1.00E+03	2.90E-01							5.50E-02	
	7.65E+00	7.65E-03	4.5E-01	Toluene				3.00E+02	8.60E-02	7.59E-01	7.59E-01						
	7.65E+00	7.65E-03	1.4E-01	Acetone				3.50E-02	1.00E-01				2.03E-01	2.03E-01			
	7.65E+00	7.65E-03	8.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01					5.80E-02			
	7.65E+00	7.65E-03	7.0E-02	Isopropanol				2.30E+03	6.60E-01	1.54E-02							
	7.65E+00	7.65E-03	7.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	1.08E-02							
	7.65E+00	7.65E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			5.09E-03		5.09E-03	5.09E-03	5.09E-03	
	7.65E+00	7.65E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	2.90E-02	2.90E-02						
	7.65E+00	7.65E-03	4.0E-02	Isobutyl Alcohol													
	7.93E-01	7.93E-04	1.0E+00	Gasoline vapor	1.60E-06	5.60E-03	1.23E-06	2.10E+03	6.00E-01	2.56E-02							
Presto Auto Body	5.03E+00	5.03E-03	1.2E-01	MEK				1.00E+03	2.90E-01							3.94E-02	
	5.03E+00	5.03E-03	4.9E-01	Toluene				3.00E+02	8.60E-02	5.43E-01	5.43E-01						
	5.03E+00	5.03E-03	1.5E-01	Acetone				3.50E-02	1.00E-01				1.43E-01	1.43E-01			
	5.03E+00	5.03E-03	9.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01					4.29E-02			
lbs/mo 240.195	5.03E+00	5.03E-03	8.0E-02	Isopropanol				2.30E+03	6.60E-01	1.15E-02							
	5.03E+00	5.03E-03	8.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	8.11E-03							
	5.03E+00	5.03E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			3.34E-03		3.34E-03	3.34E-03	3.34E-03	
	5.03E+00	5.03E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	1.91E-02	1.91E-02						
	5.03E+00	5.03E-03	4.0E-02	Isobutyl Alcohol													
	1.07E+00	1.07E-03	5.0E-02	Toluene				3.00E+02	8.60E-02	1.18E-02	1.18E-02						
Yellow Cab lbs/mo 52.43 .30 lb/hr	1.07E+00	1.07E-03	2.0E-02	Acetone				3.50E-02	1.00E-01					4.06E-03	4.06E-03		
	1.07E+00	1.07E-03	4.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			1.42E-03		1.42E-03	1.42E-03	1.42E-03	
	1.07E+00	1.07E-03	1.9E-01	Xylene				7.00E+02	2.00E-01	1.93E-02	1.93E-02						
	1.07E+00	1.07E-03	2.0E-02	Methyl Alcohol													
	1.07E+00	1.07E-03	3.0E-02	Others (Inert)													
	1.07E+00	1.07E-03	1.9E-01	Methylene Chloride													
	1.07E+00	1.07E-03	6.0E-02	Carbon Dioxide													
	1.07E+00	1.07E-03	3.4E-01	2-Propanone													
TACO KID																	
0.229 lb/hr	1.95E-01	1.95E-04	1.0E+00	Acetaldehyde	2.7E-06	1.0E-02	5.28E-07	9.0E+00	2.6E-03	1.42E+00							
Total							1.8E-06			2.9E+00		9.9E-03	0.0E+00	3.6E-01	4.6E-01	1.0E-01	0.0E+00

Note: Exposure Factors used to calculate contaminant intake

ADULT	Exposure Frequency	days/year	350
	Exposure Duration	years	64
	Inhalation Rate	m ³ /day	20
	Average Body Weight	kilogram	71.8
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Note: Exposure Factors used to calculate contaminant intake

CHILD	Exposure Frequency	days/year	350
	Exposure Duration	years	1 to 6
	Inhalation Rate	m ³ /day	2.32 to 6.14
	Average Body Weight	kilogram	7.04 to 21.2
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Table 12 - Cumulative Risk

Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Students

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m ³	mg/m ³			URF	CPF	MICR	REL/RfC ug/m ³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Metro Station	8.85E+00	8.85E-03	1.1E-01	MEK				1.00E+03	2.90E-01							2.88E-03	
	8.85E+00	8.85E-03	4.5E-01	Toluene				3.00E+02	8.60E-02	3.97E-02	3.97E-02						
	8.85E+00	8.85E-03	1.4E-01	Acetone				3.50E-02	1.00E-01					1.06E-02	1.06E-02		
	8.85E+00	8.85E-03	8.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						3.04E-03		
	8.85E+00	8.85E-03	7.0E-02	Isopropanol				2.30E+03	6.60E-01	8.05E-04							
	8.85E+00	8.85E-03	7.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	5.65E-04							
	8.85E+00	8.85E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			2.66E-04		2.66E-04	2.66E-04	2.66E-04	
	8.85E+00	8.85E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	1.52E-03	1.52E-03						
	8.85E+00	8.85E-03	4.0E-02	Isobutyl Alcohol													
Gasline 19 K /mo 34.51 lbs TOG	7.68E-01	7.68E-04	1.0E+00	Gasoline vapor	1.60E-06	5.60E-03	5.38E-08	2.10E+03	6.00E-01	1.12E-03							
	5.00E-01	5.00E-04	1.2E-01	MEK				1.00E+03	2.90E-01							1.78E-04	
	5.00E-01	5.00E-04	4.9E-01	Toluene				3.00E+02	8.60E-02	2.44E-03	2.44E-03						
	5.00E-01	5.00E-04	1.5E-01	Acetone				3.50E-02	1.00E-01					6.44E-04	6.44E-04		
	5.00E-01	5.00E-04	9.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						1.93E-04		
	5.00E-01	5.00E-04	8.0E-02	Isopropanol				2.30E+03	6.60E-01	5.20E-05							
	5.00E-01	5.00E-04	8.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	3.65E-05							
	5.00E-01	5.00E-04	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			1.51E-05		1.51E-05	1.51E-05	1.51E-05	
	5.00E-01	5.00E-04	4.0E-02	Xylene				7.00E+02	2.00E-01	8.58E-05	8.58E-05						
Presto Auto Body	5.00E-01	5.00E-04	4.0E-02	Isobutyl Alcohol													
	5.00E-01	5.00E-04	5.0E-02	Toluene				3.00E+02	8.60E-02	2.49E-04	2.49E-04						
	5.00E-01	5.00E-04	2.0E-02	Acetone				3.50E-02	1.00E-01					8.58E-05	8.58E-05		
	5.00E-01	5.00E-04	4.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			3.01E-05		3.01E-05	3.01E-05	3.01E-05	
	5.00E-01	5.00E-04	1.9E-01	Xylene				7.00E+02	2.00E-01	4.08E-04	4.08E-04						
	5.00E-01	5.00E-04	2.0E-02	Methyl Alcohol													
	5.00E-01	5.00E-04	3.0E-02	Others (Inert)													
	5.00E-01	5.00E-04	1.9E-01	Methylene Chloride													
	5.00E-01	5.00E-04	6.0E-02	Carbon Dioxide													
Yellow Cab lbs/mo 52.43 .30 lb/hr	5.00E-01	5.00E-04	3.4E-01	2-Propanone													
TACO KID																	
0.229 lb/hr	5.00E-01	5.00E-04	1.0E+00	Acetaldehyde	2.7E-06	1.0E-02	6.13E-08	9.0E+00	2.6E-03	1.65E-01							
Total							1.2E-07			2.1E-01		3.1E-04	0.0E+00	1.2E-02	1.5E-02	3.4E-03	0.0E+00

Note: Exposure Factors used to calculate contaminant intake

Kindergarten	Exposure Frequency	days/year	180
	Exposure Duration	years	1
	Inhalation Rate	m ³ /day	6.14
	Average Body Weight	kilogram	21.2
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Note: Exposure Factors used to calculate contaminant intake

5th Grade	Exposure Frequency	days/year	180
	Exposure Duration	years	1
	Inhalation Rate	m ³ /day	11.23
	Average Body Weight	kilogram	38.7
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Table 13
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Cumulative Risk Resident

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m ³	mg/m ³			URF	CPF	MICR	REL/RfC ug/m ³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Omnitrans	5.92E+00	5.92E-03	3.0E-01	MEK				1.00E+03	2.90E-01							1.49E-02	
	5.92E+00	5.92E-03	2.0E-01	Toluene				3.00E+02	8.60E-02	3.34E-02	3.34E-02						
	5.92E+00	5.92E-03	1.0E-01	Acetone				3.50E-02	1.00E-01					1.44E-02	1.44E-02		
	5.92E+00	5.92E-03	1.0E-01	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						7.19E-03		
	5.92E+00	5.92E-03	2.0E-02	Isopropanol				7.00E+03	2.00E+00						1.44E-04		
	5.92E+00	5.92E-03	1.8E-01	VM&P Naphtha				3.30E+03	9.40E-01	2.75E-03							
	5.92E+00	5.92E-03	1.0E-01	Ethyl Benzene				2.00E+03	5.70E-01			2.52E-03		2.52E-03	2.52E-03	2.52E-03	
	5.92E+00	5.92E-03	1.0E-01	Xylene				7.00E+02	2.00E-01	7.19E-03	7.19E-03						
	5.92E+00	5.92E-03	1.0E-01	Isobutyl Alcohol													
Royal Coach Autobody	1.11E-01	1.11E-04	1.0E+00	Gasoline vapor	1.60E-06	5.60E-03	1.68E-07	2.10E+03	6.00E-01	4.49E-04							
	5.53E-02	5.53E-05	2.0E-02	EGBE				1.30E+04	3.7			7.26E-07					
	5.53E-02	5.53E-05	5.0E-02	N-Propanol				1.20E+03	3.40E-01	1.97E-05	1.97E-05				1.97E-05		1.97E-05
	5.53E-02	5.53E-05	5.0E-02	MEK				1.00E+03	2.90E-01							2.32E-05	
	5.53E-02	5.53E-05	1.7E-01	Toluene				3.00E+02	8.60E-02	2.65E-04	2.65E-04						
	5.53E-02	5.53E-05	6.6E-01	Acetone				3.50E-02	1.00E-01					8.86E-04	8.86E-04		
	5.53E-02	5.53E-05	4.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						2.69E-05		
					1.68E-07			4.41E-02 4.09E-02 2.52E-03 0.00E+00 1.78E-02 2.52E-02 1.74E-02 1.97E-05									

Note: Exposure Factors used to calculate contaminant intake

ADULT	Exposure Frequency	days/year	350
	Exposure Duration	years	64
	Inhalation Rate	m ³ /day	20
	Average Body Weight	kilogram	71.8
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Note: Exposure Factors used to calculate contaminant intake

CHILD	Exposure Frequency	days/year	350
	Exposure Duration	years	1 to 6
	Inhalation Rate	m ³ /day	2.32 to 6.14
	Average Body Weight	kilogram	7.04 to 21.2
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Table 14
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Worker

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m³	mg/m³			URF	CPF	MICR	REL/RfC ug/m³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Omnitrans	5.92E+00	5.92E-03	3.0E-01	MEK				1.00E+03	2.90E-01							9.4E-04	
	5.92E+00	5.92E-03	2.0E-01	Toluene				3.00E+02	8.60E-02	2.1E-03	2.1E-03						
	5.92E+00	5.92E-03	1.0E-01	Acetone				3.50E-02	1.00E-01					9.1E-04	9.1E-04		
	5.92E+00	5.92E-03	1.0E-01	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						4.5E-04		
	5.92E+00	5.92E-03	2.0E-02	Isopropanol				7.00E+03	2.00E+00						9.1E-06		
	5.92E+00	5.92E-03	1.8E-01	VM&P Naphtha				3.30E+03	9.40E-01	1.7E-04							
	5.92E+00	5.92E-03	1.0E-01	Ethyl Benzene				2.00E+03	5.70E-01			1.6E-04		1.6E-04	1.6E-04	1.6E-04	
	5.92E+00	5.92E-03	1.0E-01	Xylene				7.00E+02	2.00E-01	4.5E-04	4.5E-04						
	5.92E+00	5.92E-03	1.0E-01	Isobutyl Alcohol													
Royal Coach Autobody	1.11E-01	1.11E-04	1.0E+00	Gasoline vapor	1.60E-06	5.60E-03	5.43E-08	2.10E+03	6.00E-01	2.8E-05							
	0.05533	5.53E-05	2.0E-02	EGBE				1.30E+04	3.7			4.6E-08					
	0.05533	5.53E-05	5.0E-02	N-Propanol				1.20E+03	3.40E-01	1.2E-06	1.2E-06				1.2E-06		1.2E-06
	0.05533	5.53E-05	5.0E-02	MEK				1.00E+03	2.90E-01							1.5E-06	
	0.05533	5.53E-05	1.7E-01	Toluene				3.00E+02	8.60E-02	1.7E-05	1.7E-05						
	0.05533	5.53E-05	6.6E-01	Acetone				3.50E-02	1.00E-01					5.6E-05	5.6E-05		
	0.05533	5.53E-05	4.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						1.7E-06		
					5.43E-08			2.76E-03 8.68E-03 6.28E-03 0.00E+00 1.06E-03 1.53E-03 7.21E-03 0.00E+00									

Note: Exposure Factors used to calculate contaminant intake

Exposure Frequency	days/year	240
Exposure Duration	years	40
Inhalation Rate	m³/day	16.7
Average Body Weight	kilogram	71.8
Average Time - Cancer	days	25550
Average Time - Noncancer	days	14600

Table 15
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Cumulative Risk Resident

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m ³	mg/m ³			URF	CPF	MICR	REL/RfC ug/m ³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
West Valley Gasline 19 K /mo 34.51 lbs TOG	3.09E+00	3.09E-03	1.1E-01	MEK				1.00E+03	2.90E-01						2.22E-02		
	3.09E+00	3.09E-03	4.5E-01	Toluene				3.00E+02	8.60E-02	3.06E-01	3.06E-01						
	3.09E+00	3.09E-03	1.4E-01	Acetone				3.50E-02	1.00E-01				8.20E-02	8.20E-02			
	3.09E+00	3.09E-03	8.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01					2.34E-02			
	3.09E+00	3.09E-03	7.0E-02	Isopropanol				2.30E+03	6.60E-01	6.21E-03							
	3.09E+00	3.09E-03	7.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	4.36E-03							
	3.09E+00	3.09E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			2.05E-03		2.05E-03	2.05E-03		
	3.09E+00	3.09E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	1.17E-02	1.17E-02						
	3.09E+00	3.09E-03	4.0E-02	Isobutyl Alcohol													
	3.08E+00	3.08E-03	1.0E+00	Gasoline vapor	1.60E-06	5.60E-03	1.23E-06	2.10E+03	6.00E-01	2.56E-02							
Total							1.2E-06			3.5E-01		2.1E-03	0.0E+00	8.4E-02	1.1E-01	2.4E-02	0.0E+00

Note: Exposure Factors used to calculate contaminant intake

ADULT	Exposure Frequency	days/year	350
	Exposure Duration	years	64
	Inhalation Rate	m ³ /day	20
	Average Body Weight	kilogram	71.8
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Note: Exposure Factors used to calculate contaminant intake

CHILD	Exposure Frequency	days/year	350
	Exposure Duration	years	1 to 6
	Inhalation Rate	m ³ /day	2.32 to 6.14
	Average Body Weight	kilogram	7.04 to 21.2
	Average Time - Cancer	days	25550
	Average Time - Noncancer	days	365

Table 16
Quantification of Carcinogenic Risks and Noncarcinogenic Risks - Worker

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Risk/Toxicological Endpoints									
	ug/m³	mg/m³			URF	CPF	MICR	REL/RfC ug/m³	RfD mg/kg/day	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
Metro Station Gaslone 19 K /mo 34.51 lbs TOG	3.09E+00	3.09E-03	1.1E-01	MEK				1.00E+03	2.90E-01							1.8E-04	
	3.09E+00	3.09E-03	4.5E-01	Toluene				3.00E+02	8.60E-02	2.5E-03	2.5E-03						
	3.09E+00	3.09E-03	1.4E-01	Acetone				3.50E-02	1.00E-01					6.6E-04	6.6E-04		
	3.09E+00	3.09E-03	8.0E-02	Butyl Benzyl Phthalate				7.00E+02	2.00E-01						1.9E-04		
	3.09E+00	3.09E-03	7.0E-02	Isopropanol				2.30E+03	6.60E-01	5.0E-05							
	3.09E+00	3.09E-03	7.0E-02	VM&P Naphtha				3.30E+03	9.40E-01	3.5E-05							
	3.09E+00	3.09E-03	2.0E-02	Ethyl Benzene				2.00E+03	5.70E-01			1.7E-05		1.7E-05	1.7E-05	1.7E-05	
	3.09E+00	3.09E-03	4.0E-02	Xylene				7.00E+02	2.00E-01	9.5E-05	9.5E-05						
	3.09E+00	3.09E-03	4.0E-02	Isobutyl Alcohol													
Total					2.90E-05	5.60E-03	1.54E-06	2.10E+03	6.00E-01	8.0E-04		1.7E-05	0.0E+00	6.8E-04	8.7E-04	2.0E-04	0.0E+00

Note: Exposure Factors used to calculate contaminant intake

Exposure Frequency	days/year	240
Exposure Duration	years	40
Inhalation Rate	m³/day	16.7
Average Body Weight	kilogram	71.8
Average Time - Cancer	days	25550
Average Time - Noncancer	days	14600

Table 17: Detection Thresholds For Odorants In Air And Water – Nitrogen Compounds

Compound	Character	Odor Threshold Concentration (ppmv)
Nitrogen Compounds		
Ammonia	Pungent	0.038 ^a
Methyl amine	Fishy	3.2 ^b
Triethylamine	Fishy	0.48 ^b
Trimethyl amine	Fishy	0.00044 ^b
Skatole	Feces	0.0000004 ^a

Table 18: Detection Thresholds For Odorants In Air And Water – Sulfur Compounds

Compound	Character	Odor Threshold Concentration (ppmv)
Sulfur Compounds		
Ethyl mercaptan	rotton cabbage	0.00001 ^a
Hydrogen sulfide	rotten eggs	0.0005 ^a
Carbon disulfide	disagree, sweet	0.0077
Dimethyl sulfide	rotten cabbage	0.001 ^a
Dimethyl disulfide	rotten cabbage	0.000026 ^a
Dimethyl trisulfide	rotten cabbage	0.0012 ^a
Methyl mercaptan	Sulfidey	0.00002 ^a
Allyl mercaptan	garlic coffee	0.0001 ^a
Propyl mercaptan	Unpleasant	0.0001 ^a
Amyl mercaptan	Putrid	0.00002 ^a
Benzyl merecaptan	Unpleasant	0.0003 ^a
Sulfur dioxide	Irritating	0.449 ^a
Carbon oxysulfide	Irritating	0.449 ^{a *}

Table 19: Detection Thresholds For Odorants In Air And Water – Volatile Fatty Acid Compounds

Compound	Character	Odor Threshold Concentration (ppmv)
Volatile Fatty Acids		
Formic acid	Biting	0.024 ^a
Acetic acid	Vinegar	1.019 ^a
Propionic acid	rancid, pungent	0.028 ^a
Butyric acid	Rancid	0.001 ^a
Isovaleric acid	Unpleasant	0.0006 ^a
Valeric acid	Unpleasant	0.0006 ^a

a Ruth 1986 (lowest OTC)

b Amoore and Hautala, 1983

c AIH, 1989

* Sulfur dioxide used as a surrogate

Table 20: Detection Thresholds For Odorants In Air And Water – Aldehydes and Ketones

Compound	Character	Odor Threshold Concentration (ppmv)
Aldehydes and Ketones		
Formaldahyde	Unpleasant	1.199 ^a
Acetaldehyde	green sweet	0.0001 ^a
Acetone	sweet, minty	20.6 ^a
Acreolin	burnt, sweet	0.0228 ^a
Propionaldyhyde	sweet, ester	0.011 ^a
Crotonaldyhyde	pungent, suffocating	0.037 ^a
Methyl ethyl ketone	sweet, minty	0.25 ^a
Butanaldyhyde	Sweet	9.5 ^a
Valeraldehyde	Pungent	0.028 ^a

^a Ruth 1986 (lowest OTC)

^b Amoore and Hautala, 1983

^c AIH, 1989

* Sulfur dioxide used as a surrogate

Table 21: Detection Thresholds For Odorants In Air And Water - Solvents

Compound	Character	Odor Threshold Concentration (ppmv)
Solvents		
Benzene	Solvent	12 ^a
1,3-butadiene	Aromatic	0.45 ^c
2-Butoxyethanol	Alcohol	0.10 ^c
Chlorobenzene	Solvent	0.68 ^a
Carbon tetrachloride	Solvent	96 ^a
Chloroform	Solvent	85 ^a
Chlorotoluene	Solvent	0.32 ^b
Cyclohexane	Hydrocarbon	25 ^b
Cyclohexene	Hydrocarbon	0.18 ^b
o-dichlorobenzene	Solvent	0.3 ^b
1-4 dioxane	Solvent	24 ^b
Ethane	Solvent	120000 ^b
Ethyl alcohol	Alcohol	84 ^b
Ethyl benzene	Solvent	2.3 ^b
Heptane	Hydrocarbon	150 ^b

Table 21: Detection Thresholds For Odorants In Air And Water - Solvents

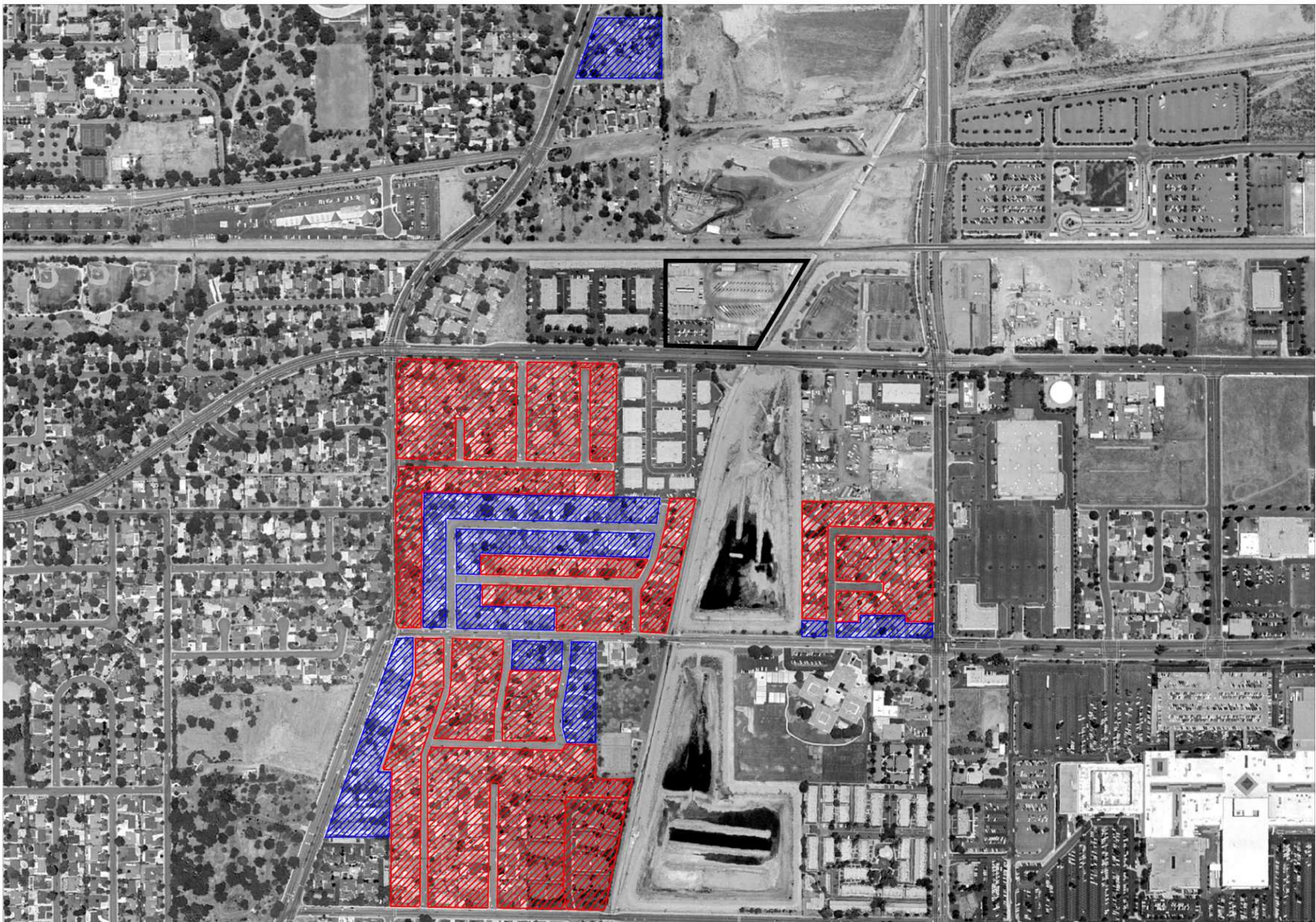
Compound	Character	Odor Threshold Concentration (ppmv)
Hexane	Hydrocarbon	130 ^b
Ethyl alcohol	Alcohol	1.6 ^b
Methyl alcohol	Ethyl alcohol	Alcohol
Nonane	Hydrocarbon	47 ^b
Ocatane	Hydrocarbon	48 ^b
Pentane	Hydrocarbon	400 ^b
Perchloroethylene	Solvent	27 ^b
Phenol	Solvent	0.04 ^b
Napthalene	Mothball	0.01 ^b
Toluene	Sweet	2.4 ^b
Trichlorethylene	Solvent	28 ^b
Vinyl chloride	Solvent	3000 ^b
m-xylene	Sweet, nailpolish	2.1b

a Ruth 1986 (lowest OTC)

b Amooore and Hautala, 1983

c AIH, 1989

* Sulfur dioxide used as a surrogate=



LEGEND

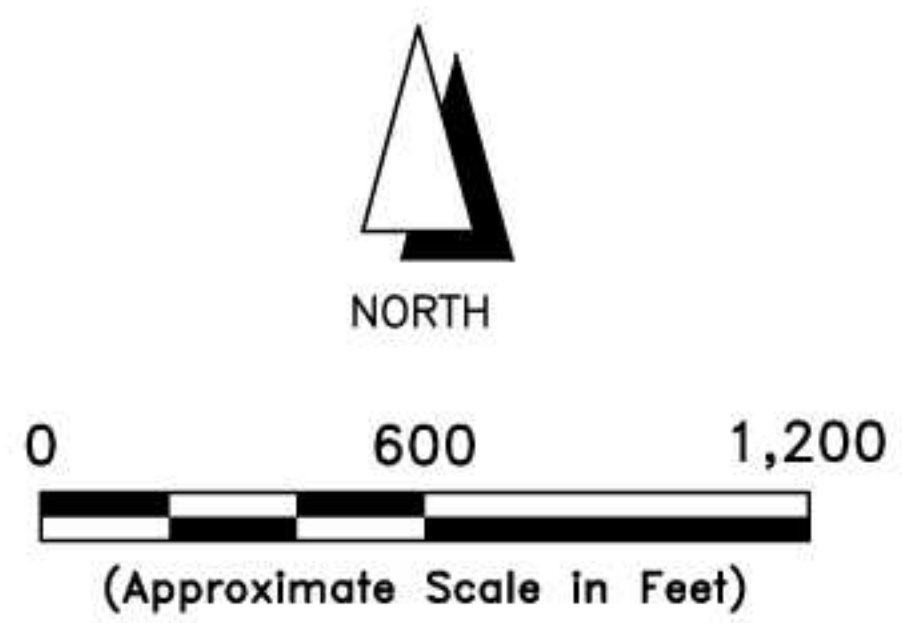
PROPERTY LINE/SITE BOUNDARY

RESIDENCES SURVEYED

ANTICIPATED SURVEY AREA - SURVEY RESTRICTED DUE TO WILD FIRES

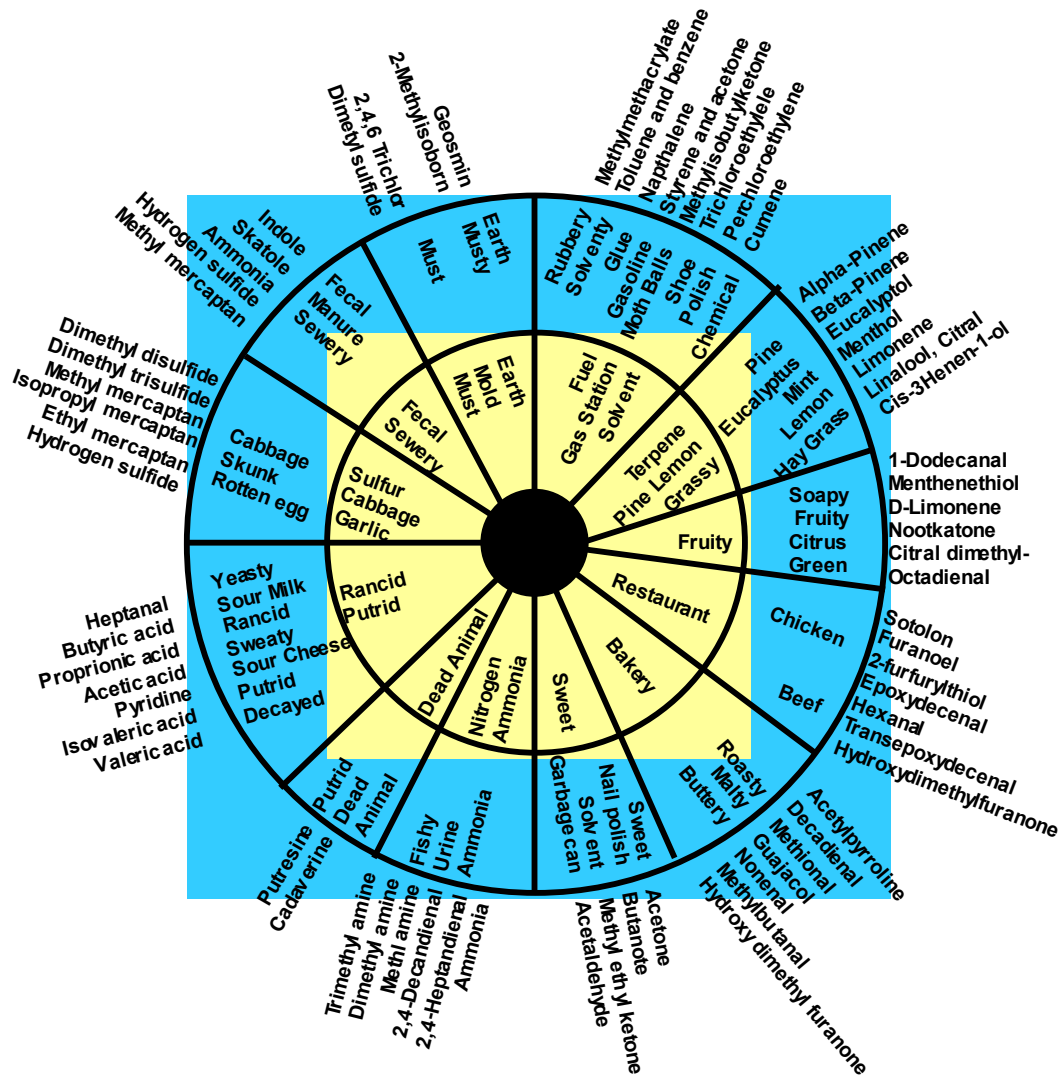
NOTES

1. All locations are approximate.

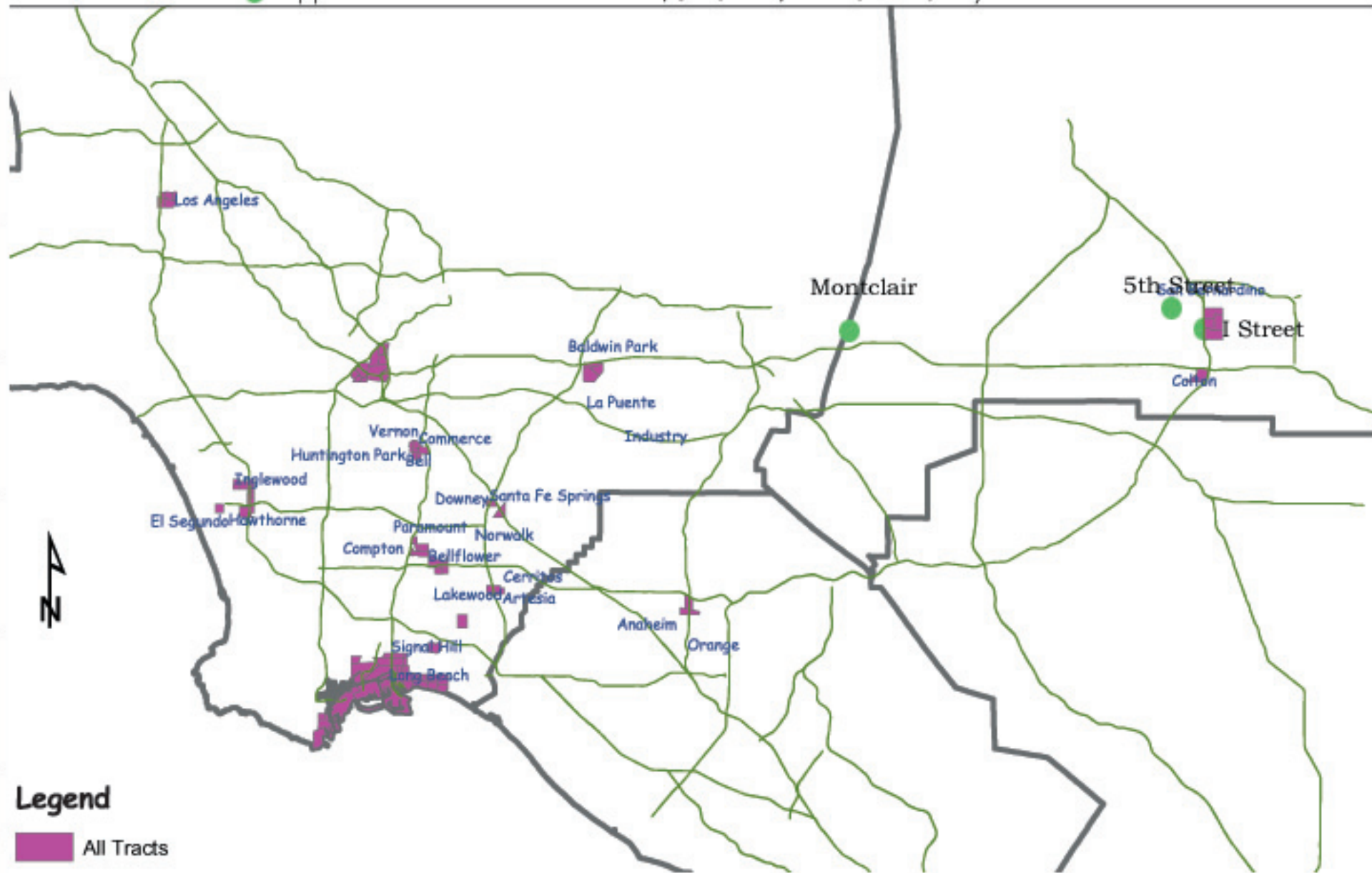


Title: Residences Surveyed in the Vicinity of the Omnitrans Fueling Facility 4748 Arrow Highway, Montclair, California			
Date: 11/03/03	Drafted By: RCH	Figure No: 17	
Project No: 015	Approved By: JJJC		

Figure 18: Qualitative Urban Odor Classification Wheel (Rosenfeld et al., 2003)



● Approximate location of Montclair, 5th Street, and I Street Study Areas



Legend

■ All Tracts



PREPARED SOLELY FOR THE USE OF OUR CLIENT AND NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHOM KOMEX MAY NOT ENTER INTO A CONTRACT.

Client:

Project/Site:

Title:

Census Tracts with Risk Greater Than 1,500 in 1,000,000
From Mobile Sources

Date:

Project No:

Figure No:

19

