

ONLINE APPENDIX

A Further Data Details

A.1 Details on Data Cleaning

The raw water consumption data set contains 2,599,862 observations and 308,529 households. Often the utility will make billing adjustments by manually changing a household's water consumption in a particular month to either credit or charge an account. Hence, negative and extremely large consumption values are either errors or billing adjustments and do not reflect actual consumption. Accordingly, we drop annual consumption below the 1st percentile of consumption and above the 99th percentile of consumption, as these are very likely to be outliers that do not reflect actual consumption. For our main specification, we also drop houses that were sold anytime in current growing season, the current non-growing season, or the lagged growing season (196,925 observations). We also do not have sales price information for all peer groups. For example, if no houses were sold within the peer group for a particular time period. This drop an additional (589,383 observations). Finally, including household-level fixed effects leads to 27,997 singleton observations. The remaining data set, after dropping parcels that had a transaction in the last year, has 1,823,150 observations and 265,789 households.

The raw fitted landscaping data set contains 544,882 observations and 74,112 households. Again, we drop observations below the 1st percentile of consumption and above the 99th percentile of consumption for similar reasons as above. The remaining data set contains 540,451 observations and 72,007 households. Finally, including household-level fixed effects leads to 7,313 singleton observations, resulting in a final data set of 531,650 observations and 71,477 households.

A.2 Further Summary Statistics

This appendix section contains summary statistics for some of the physical household characteristics.

Table A.1: Summary Statistics for Household Characteristics

Variable	Mean	Std. Dev.	Min.	Max.
# bathroom fixtures	6.84	2.34	2	31
house size (ft ²)	1,706.45	614.81	288	11,564
pool dummy	0.336	0.472	0	1
lot size (ft ²)	8,247	3,849	531	131,979

Notes: Means are taken over the 265,789 households in the water data.

A.3 Additional Figures

This figure shows the mean landscape greenness variable over time in our dataset, showing a slight but steady downward trend.

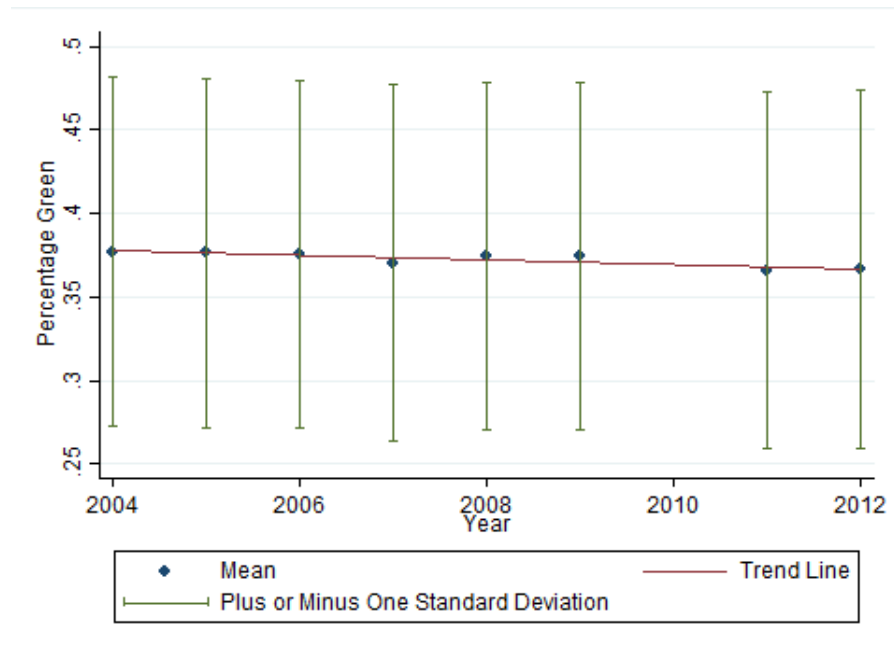


Figure A.1: Mean landscape greenness by year with one standard deviation whiskers, based on the remote sensing imagery.

A.4 Tables of Balance

The following Table displays comparisons of summary statistics of important observable household and demographic characteristics for key subsets of our data. Table A.2 compares the means of key variables between the water consumption data and the landscaping data. We performed two-sided t-tests of differences in means for each variable and report them in parentheses below the differences in means in column 3 of the table.

Table A.2: Summary Statistics by Water and Landscape Data Sets

	Water Data	Landscape Data	Difference
lot size	8,247 (3,850)	9,989 (6,461)	1,742 (7.150)***
house sqft	1,706.453 (614.806)	1,840.331 (671.653)	133.878 (0.974)***
# bath fixtures	6.835 (2.344)	7.035 (2.393)	0.200 (0.004)***
median HH income	59,026 (24,042)	62,816 (23,430)	3,790 (37)***
% white	71.325 (17.093)	77.379 (12.578)	6.054 (0.025)***
% black	4.921 (4.657)	4.053 (2.577)	-0.868 (0.007)***
% latino	34.392 (27.240)	23.563 (18.681)	-10.829 (0.040)***
N	265,789	71,477	265,789

Notes: Column 1 reports means for households in the water consumption data with standard deviations in parentheses. Column 2 reports means for households in the landscape data with standard deviations in parentheses. Column 3 reports the difference in means with standard errors of differences in means in parentheses. *** denotes significance at 1% level, ** at 5% level, * at 10% level.

Table A.3: Summary Statistics by SRP Status

	(1)	(2)	(3)
	Unmatched		
	non-SRP	SRP	t-stat
lot size (ft ²)	9,498.9	7,952.4	-67.97***
water consumption (ccf)	21.3	19.8	-29.7***
house size (ft ²)	1556.8	1966.7	-159.25***
# bath fixtures	6.056	7.839	-196.66***
1(has pool)	0.193	.435	-144.15***
median HH income	70,391	45,663	-325.25***

Notes: Table reports means of variables. Column 3 presents t-statistics for a test of differences in means. *** denotes significance at 1% level, ** at 5% level, * at 10% level.

B First Stage Results and Robustness Checks

This appendix provides the results from the first stage of the IV specifications in our primary results.

Table A.4: First Stage for Preferred IV

	(1)	
	log peer consumption	log peer landscape
peer sale (IV)	0.087*** (0.006)	0.089*** (0.006)
peer sales prices (1000's\$/100ft ²)	-1.469*** (0.392)	-1.008*** (0.374)
Δ peer sales prices (1000's\$/100ft ²)	1.519*** (0.443)	1.190*** (0.433)
fraction peer new construction	0.117 (0.086)	0.110 (0.088)
Household Fixed Effects	Y	Y
Year by Subdivision Fixed Effects	Y	N
Year by Census Block Fixed Effects	N	Y
R-squared	0.666	0.729
N	1,823,150	1,823,150

Notes: This table presents the first stage results from our preferred IV specifications in Table 2. The dependent variable is the average number of peer switches, our primary variable of interest. The independent variable of interest is the fraction of houses sold in the peer group (Peer Sale IV). Standard errors are clustered at the subdivision level. *** denotes significance at the 1 percent level, ** at the 5 percent level, * at the 10 percent level.

Table A.5: Regression of Sales Dummy on Peer Sales

	1(sold)
peer sales (IV)	-0.0016 (0.0029)
Household Fixed Effects	Y
Census Block x Year Fixed Effects	Y
R-squared	0.156
N	1,979,932

Notes: This table reports the results of regressing a dummy variable for whether house i was sold in period t on the lag of the average number of sold homes in the peer group, our instrumental variable in the main regressions. Standard errors are clustered at the subdivision level. *** denotes significance at 1% level, ** at 5% level, * at 10% level.

Table A.6: Alternative Thresholds for Defining a Switch

	(1) 35th	(2) 25th	(3) 10th
fraction of peer switches in $t - 1$	0.44** (0.470)	0.29*** (0.13)	0.171* (0.10)
Housing price controls	Y	Y	Y
New construction controls	Y	Y	Y
Household Fixed Effects	Y	Y	Y
Census block x Year Fixed Effects	Y	Y	Y
R-squared	0.190	0.211	0.233
N	1,823,150	1,823,150	1,823,150

Notes: The dependent variable is 1(household switch in water consumption in t). Each column presents the results from a specification All specifications instrument for the fraction of peer switches using the fraction of parcels with housing transactions within 500' in the previous year. An observation is a household parcel-year. All variable definitions are the same as in Table 2. Standard errors are clustered at the subdivision level. *** denotes significance at 1% level, ** at 5% level, * at 10% level.

Table A.7: Robustness Checks Comparing Different Radii

	(1)	(2)	(3)
	400'	600'	700'
fraction of peer switches in $t - 1$	0.22*	0.29**	0.26**
	(0.12)	(0.13)	(0.13)
Housing price controls	Y	Y	Y
New construction controls	Y	Y	Y
Household Fixed Effects	Y	Y	Y
Census block x Year Fixed Effects	Y	Y	Y
R-squared	0.21	0.21	0.21
N	1,744,916	1,855,559	1,871,640

Notes: All columns run our preferred IV specification using the fraction of movers in the peer group as the instrument for the peer group variable. Each column uses a different radius for the peer group definition. On average, there are respectively 22.9, 26.25, and 26.7 houses within a 400, 600, and 700 foot radius of any household in our study. Standard errors are clustered at the subdivision level. *** denotes significance at 1% level, ** at 5% level, * at 10% level.