

★ planning advisory service

AMERICAN SOCIETY OF PLANNING OFFICIALS

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URBAN LAND USE*

Mapping and a statistical description of existing land uses are generally considered to be prerequisite to the planning for a locality. It is often hoped that by comparing land use statistics of a community with those of other communities, an "average" pattern will emerge. The "average" may be considered to be the "correct" or "optimum" distribution of land uses. Those who turn to comparative summary land use statistics for indications of optimum land use patterns, generally translate land use figures into ratios of area to population. Thus, land use statistics are often expressed as a certain number of acres to be devoted to commercial use per 100 persons. Or this formula may be reversed, and a city, for example of 25,000 population is urged to devote a certain percentage of its land area to commercial use.

The idea of possible optimum land use patterns is tantalizing. Indications of such optimum patterns do not emerge from existing data. Possibly when the methods employed in making land use surveys and the definition of land use categories are standardized, and when communities can be classified as to social, economic, and functional types, it may be possible to discover certain trends and derive optimum land use patterns. For example, after grouping together information for each social, economic and functional type of community, it may be found that high-income residential suburban communities, dependent upon cities of over one million population, reveal certain similar characteristics. On the basis of these similar characteristics it might be possible to abstract the best existing ratio of land uses to people, and to project such uses to similar communities under similar conditions. The bulk of the research in this field remains to be done. The Harvard City Planning Studies, Volume IV, Urban Land Uses, by Harland Bartholomew, which was published in 1932, was the first major comparative study.

At present, however, as may be seen quickly from the following tables, which are classified in three major population groups, there are almost no general conclusions that may be drawn from the grouping of communities of roughly the same population size. Therefore, no attempt was made to "average" the data within each table, and to condense the data to figures expressing, for example, the "average" park area of fifteen cities of under 50,000 population. Also, no attempt was made to translate

the data into a ratio of land use per 100 population, or other such standard. Not only do "optimum" land use patterns not emerge from the data, but we have been hesitant to strive for a further summarization or averaging of the summary data. A striking fact that may be observed from the data is the wide variation of the use of land within communities of roughly the same population size. Also, it will be noted that there are no valid distinctions between the population groups.

The value of the summary statistics included in the tables in this report lie in the fact that communities of different types, population sizes and geographic location were included. Firstly, the data give insights into the particular communities. Although one may know in general that Greenwich, Connecticut, is a residential community, it is interesting to note that 50 percent of the total area was reported devoted to residential use -- which is higher than for any other city included in the tables. Only six percent of the area is reported devoted to streets. One of the items to be investigated would be to see whether most of the town stems from a main highway (which may not be included in the community's total area). Similarly, in Duluth, Minnesota, generally considered to be an industrial community, 10.3 percent of its total area is reported devoted to parks, and only 3.5 percent of its total area is devoted to industrial use. These items of attention-attraction also serve to caution the planner to investigate the possibility that, for example, in Duluth, the bulk of the industry is outside incorporated limits of the city.

Secondly, because communities of different types, population sizes and geographic locations are represented in this report, it is possible to select from the tables for the purposes of comparison the community (or communities) which resembles that being studied locally, and to compare these land use patterns.

The study of existing land use is a necessary part of the evaluation of existing zoning provisions. A community may find that, although 10 percent of its area is zoned for commercial development, only a fraction of that anticipated amount has been used for commercial purposes. Overly optimistic zoning for commercial and industrial purposes has led to haphazard scattered development, precluding such use for well-planned residential or other purposes. On the other hand, some communities have under-zoned for industrial purposes, have delegated the community area to other purposes, and thus have left no large vacant sites available for new industrial construction. Sometimes, if measured in quantitative terms, the amount of land zoned for industrial purposes appears to be large, but upon examination, the area is found to be in no way suitable for development. One of the reasons suggested for the growth of blight has been the disparity between the areas zoned for certain types of development, and the actual amount and location of such development. A comparison of actual land uses and areas zoned for such uses in communities is of much value. A future PLANNING ADVISORY SERVICE Information Report may be issued on that subject and supplementary to this report.

The comparative study of existing land use should be of help in shaping future policy determination. It may be found, for example, that there is practically no area devoted to multi-family residential construction. Housing market analysis may reveal the need for such facilities. Or, study of existing land use may reveal a large

percentage of vacant land which might be developed, or held vacant for future development.

Land use data may be used to measure existing land utilization against certain criteria of community development. For example, standards for recreation -- the amount of land considered to be necessary for recreational purposes -- may be compared to the amount of land now being devoted to parks, playgrounds, and other similar uses.

Although a summary inventory of existing land use gives clues to the value placed on particular uses in a community, insofar as it shows that other uses did not compete successfully for such limited spacial resources, the data do not indicate the location of uses, the intensity of the use of the land, the grouping of the uses, etc. For example, summary data on land use, as are usually given in the published reports of planning commissions, do not distinguish between commercial areas in central business districts, in neighborhood areas, along major streets, and in outlying shopping districts. Much greater specificity of the data would lead to more meaningful comparisons. Also, floor area devoted to particular uses, as well as land area, may be of much value. The commercial development in the central business district of a community may occupy only a fraction of the land area, but because of multi-storied buildings, may actually be utilizing much more "area" than in all other commercial land uses combined.

Most land use summary statistics are published for the area within the corporate boundaries of the community. Without knowledge of the land use on the fringes of the community (and in the metropolitan area of the community if the city is in the upper population brackets), a distorted view of the community may be obtained from study of the land use statistics for the city alone. Often industrial development or residential suburbs, or outlying shopping districts may be located on the periphery of the community. Park areas or open country on the outskirts of a community markedly affect the need for and the resulting provisions for park and recreation areas within that community. These are only a few examples of the necessity of interpreting land use data for a community in terms of a metropolitan setting. Data for the incorporated city and for suburban Greensboro, North Carolina, are given in Table II, and for the metropolitan area and incorporated City of Winnipeg, Canada, in Table III. The Los Angeles Metropolitan Area is also represented in Table III.

A major difficulty in comparing summary land use statistics is that the terminology used by communities varies greatly. Without uniform terminology and standardized classifications, it is possible only to make general comparisons. For example, "vacant land" is one community might exclude land on which shacks, billboards, and other "temporary" structures were erected, and yet another community might include such land in its "vacant" category. As another example, the method of determining whether land not built-upon but contiguous to industrial construction, and under the same ownership as the industrial plant, is industrial or vacant, varies considerably.

The American Society of Planning Officials has established a Committee on

Terminology to propose uniform definitions of terms which may be acceptable to the planning profession. The American Institute of Planners is also interested in this problem, and the efforts of these national groups, plus the thinking of interested individuals may lead to the compilation of more readily comparable data. At present, however, it must be borne in mind that methods of conducting land use surveys and summarizing data differ greatly, as do the definitions of terms, and the classifications into which uses are grouped.

A Guide to the Tables

The data presented in Tables I, II and III were assembled from published planning reports, usually issued by the local planning commission for the particular community. The data were accepted as given in these reports. Whenever acreage figures were given in the report from which the data was extracted, but percentage figures were not, the acreage figures were translated into percentage figures. When only percentage figures were given, PLANNING ADVISORY SERVICE supplied a total acreage figure from census reports, but did not transpose the percentages into acreage.

The categories into which the data were classified were selected by examination of each community's land use summary, and then selecting the most generally used classifications. Explanations of these categories are given below. Whenever it was evident that the statistics for the community deviated from these categories, a footnote explanation was given. For example, in Seattle, Washington (Table III), no information is given for the category "railroad", but the figure for "heavy industry" is footnoted, and the explanation indicates that "railroads" are included under "heavy industry".

Blank spaces in the table indicate that no information for that category was given in the report from which the data were extracted. The X's indicate that information was not given for that category, although logically such categories would apply to the community: for example, no information was given for Little Rock, Arkansas (Table II), for the land use devoted to "streets". Presumably some area must be devoted to streets, and the data, including the percentages, should be interpreted in view of the items that are missing from the table.

In reading the percentage columns, care must be taken to check whether the percentage includes all applicable items, and whether it is expressed in terms of total developed area (excluding the vacant portions), total land area (excluding water area) or total area (including water and land area within corporate boundaries). Here again, the data were accepted as given in the reports from which the information was compiled. If the percentage figures were expressed in detail greater than to one-tenth of one percent, the figures were "rounded" to one-tenth of one percent. In some cases, as for example, Greenwich, Connecticut (Table I), it may be assumed that the report from which the data were taken "rounded" the figures to one percent.

To conserve space, short descriptions are used in the tables to indicate the use categories. These categories are described more fully below. Since there are no standard definitions, there may be variations in the data due to inter-city differences in definitions. Wherever possible, such differences have been footnoted.

RESIDENTIAL - This category gives the total of all residential uses. Sub-totals for one, two, and multi-family use are given where they were available.

MULTI-FAMILY - Includes all residential forms not included in 1- and 2-family uses, such as 3-4 family dwellings, apartments, hotels, boarding houses, rooming houses, tourist courts etc.

COMMERCIAL - Includes all retail and wholesale offices, business offices, whether located in central or outlying districts.

INDUSTRIAL - This is a total of light and heavy industrial use totals, which are sub-totaled where information was available. It does not include railroad use, unless so footnoted.

RAILROAD - Includes acreage occupied by railroad tracks and yards.

PARKS - Includes all public parks and playgrounds, swimming pools, athletic fields, etc.

STREETS - Includes all city streets and alleys, boulevards and parkways.

PUBLIC, SEMI-PUBLIC - Includes all public schools, municipal buildings and other public property not included among "parks". Also privately owned institutions such as private schools, hospitals, churches, and cemeteries are included, as are utilities (unless otherwise footnoted), private recreational facilities such as private park golf courses, etc.

OTHER - Agricultural uses mainly comprise this category.

TOTAL DEVELOPED AREA - Includes the sum of all above uses.

VACANT - Includes undeveloped land.

TOTAL LAND AREA - Includes total developed area plus undeveloped land.

WATER - Includes rivers and riverways, lakes and other bodies of water within the city boundaries.

TOTAL AREA - This is the total of all above uses, usually called "total city area" in the reports from which data were extracted. There is probably some variation in the definition of this area by different cities, depending on whether water areas and suburban areas are included in "total city area".

YEAR - Unless otherwise noted, this is the year of publication of the report in which the figures were found. Care was taken to select reports published after 1940, with the main emphasis on the last half of the decade. In some cases, where the data were published early in the '40's, it is possible that the land use survey was made in the late '30's. This applies to Des Moines, Iowa, and Seattle, Washington.

TABLE I: URBAN LAND USE STATISTICS FOR

USE	ALBERT LEA, MINNESOTA		DECATUR, ALABAMA		FAIRFIELD, CONNECTICUT		GREENWICH, CONNECTICUT	
	Acres	%	Acres	%	Acres	%	Acres	%
Residential	492	36.7	426	10.9 ^a		10.3		50
1-family	405	30.3						
2-family	67	5.0						
Multi-family	20	1.4						
Commercial	29	2.1	37	1.0		0.6		1
Industrial	48	5.2	217	5.5		0.7		2
Light Industry	35	2.6	55	1.4				
Heavy Industry	13	1.7	162	4.1				
Railroad	94	7.0	177	4.5 ^b				
Parks	27	2.0						d
Streets	312	23.3	452	11.6				6
Public, Semi-public	41	3.0	108	2.8		9.6		8
Other	7	0.4				78.8		
TOTAL DEVELOPED AREA	1054							
Vacant	272	20.3	2487	63.7		c		30
TOTAL LAND AREA	1326	100.0	3904	100.0		100.0		
Water	365							3
TOTAL AREA	1691				7680		* 32,512	100
Year	1949		1942		1948		1944	

CITIES UNDER 50,000 POPULATION (1940 CENSUS)

HARRISON, NEW YORK		MANCHESTER, MASSACHUSETTS		MAPLEWOOD, NEW JERSEY (T)		MASON CITY, IOWA		MERIDIAN, MISSISSIPPI		MONTCLAIR, NEW JERSEY (T)	
Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
9060	64.3	1860	97.8 ^f	1167	56.7	941	11.8	1611	25.7 ⁱ	2155	54.6
						866	10.9			1862	47.1
						51	0.6			142	3.6
						24	0.3			151	3.9 ^j
21	0.3	35	1.8 ^g	70	3.4	57	0.7	149	2.4	89	2.3
1	0.01	2.5	0.2	29	1.4	467	5.9	231	3.7	34	0.8
1	0.01	2.5	0.2			85	1.1				
						382	4.8				
				24	1.2	358	4.5	112	1.8	67	1.7
			^h	46	2.2	41	0.5	27	0.4	231	5.9
1480	10.5		^h	362	17.6	880	11.0	1020	16.3	628	15.9
1336	9.7		^h	231	11.2	268	3.3	338	5.3	290	7.4
2182	15.3 ^e										
		1900	100.0			3012	37.7				
				131	6.3	4885	61.1	2730	43.5	449	11.4
				2060	100.0						
						98	1.2	54	0.9		
14080	100.0					7995	100.0	6274	100.0	3943	100.0
1948		1949		1949		1940		1940		1946	

TABLE I (CONTINUED)

USE	PATCHOGUE, NEW YORK		PETALUMA, CALIFORNIA		PETERSBURG, VIRGINIA		PORT HURON, MICHIGAN		QUINCY, ILLINOIS	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Residential		37.0	505	49.0		34.3	1284	26.9	1599	42.0
1-Family			425	41.2			1172	24.5	1276	33.6
2-Family			49	4.8			77	1.6	246	6.4
Multi-family			31	3.0			35	0.8	77	2.0
Commercial		3.5	70	6.7		1.9	81	1.7	87	2.3
Industrial		^k x	107	10.4		7.7	191	4.0	214	5.7
Light Industry							84	1.8	127	3.4
Heavy Industry							107	2.2	87	2.3
Railroad		^k x		^l		3.9	109	2.3	62	1.7
Parks		^k x	74	7.2		17.0	151	3.2	183	4.8
Streets		15.0	218	21.1		22.4	1151	24.1	987	26.0
Public, Semi-public		^k x	58	5.6		12.8	205	4.3	167	4.4
Other			x				89	1.9		
TOTAL DEVELOPED AREA	880	64.0	1350	100.0		100.0	3171	66.4	3299	86.9
Vacant		36.0	317				1519	31.8	497	13.1
TOTAL LAND AREA	1382	100.0	1667				4780	100.0		
Water	202						3526			
TOTAL AREA						[*] 3200	8306		3796	100.0
Year	1940		1948		1949		1947		1949	

TABLE I FOOTNOTES

a.	Decatur, Ala.	Residences - White	352	acres
		Colored	74	"
b.	"	Includes "Transport and Public Utilities"		
c.	Fairfield, Conn.	Included under "Other"		
d.	Greenwich, Conn.	Included under "Public, Semi-public"		
e.	Harrison, N.Y.	Includes "Farming and Miscellaneous"		
f.	Manchester, Mass.	Residential - year round	769	acres
		summer homes	1091	"
g.	"	Includes 18.6 acres of "Business with Residence"		
h.	"	The official land use survey does not include data for these categories. It is possible that they do not apply for Manchester.		
i.	Meridian, Miss.	Residences - White	1122	acres (17.9%)
		Colored	490	" (7.8%)
j.	Montclair, N.J.	Rooming and boarding houses -	50	" (1.3%)
k.	Patchogue, N.Y.	No data is available for the following: Industrial, Railroad, Parks, and Public, Semi-public uses. Since 8.5% of the total developed land is not accounted for, it must be assumed to apply to one or more of these categories.		

l. Petaluma, Calif. Included under "Streets"

*. From the U.S. Bureau of the Census, Areas of the U.S., 1940.

X Unknown

T Town

TABLE II: URBAN LAND USE STATISTICS FOR CITIES

USE	CHARLESTON, WEST VIRGINIA		DES MOINES, IOWA		DULUTH, MINNESOTA		FORT WAYNE, INDIANA		FORT WORTH, TEXAS	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Residential		19.3	7523	21.2	3600	9.0	3890	33.4	5834	20.3
1-family			7035	19.8	3000	7.5	3377	29.0	5583	19.5
2-family			111	0.3	400	1.0			125	0.4
Multi-family			377	1.1	200	0.5	520	4.4	126	0.4
Commercial		1.5	416	1.2	300	0.7	238	2.1	239	0.8
Industrial		18.0	647	1.8	1375	3.5	1053	9.0 ^b	936	3.0
Light Industry		2.0	229	0.6	775	2.0			384	1.3
Heavy Industry		16.0	418	1.2	600	1.5			552	1.7
Railroad		3.5	949	2.7	400	1.0			1199	4.2
Parks			1004	2.8	4100	10.3			1461	5.1
Streets		15.0	4450	12.5	5000	12.5	2990	25.7	6453	22.4
Public, Semi-public		4.5	2807	7.9	1466	3.7	1212	10.4	X	5.2 ^c
Other										
TOTAL DEVELOPED AREA			17796	50.1	16241	40.7				
Vacant		38.2	17734	49.9 ^a	23600	59.3	2262	19.4	11194	39.0
TOTAL LAND AREA									28707	100.0
Water										
TOTAL AREA	5440*	100.0	35530	100.0	39841	100.0	11652	100.0		
Year	1948		1939		1941		1948		1940	

WITH 50,000 to 250,000 POPULATION (1940 CENSUS)

GREENSBORO, NORTH CAROLINA City Limits ^c Suburban ^e				LITTLE ROCK, ARKANSAS		NORFOLK, VIRGINIA		OKLAHOMA CITY, OKLAHOMA		OMAHA, NEBRASKA		RICHMOND, VIRGINIA	
Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
2881	24.8	1356	3.8	2723	24.4	3988	17.8		38.0	7925	30.9	5430	21.4
2521	21.7	1341	3.8	2568	23.0	2508	11.2		32.6	7469	29.1	4488	17.7
167	1.4	12	.03	96	0.9	624	2.8		3.8	198	0.8	604	2.4
193	1.7	3	.01	59	0.5	856	3.8		1.6	258	1.0	338	1.3
133	1.2	91	0.4	161	1.4	484	2.2		2.1	498	2.0	412	1.6
401	3.4	265	0.8	371	3.3	5320	23.8 ^f		3.8	988	3.9	1148	4.5
191	1.6	73	0.2	109	1.0				1.7			648	2.5
210	1.8	192	0.6	262	2.3				2.1			500	2.0
				283	2.5	1180	5.3 ^g		3.1	1518	6.0	737	2.9
				X	X	557	2.5		5.2	1767	6.8	1030	4.0
1660	14.2	1437	4.1	X	X	2992	13.4		25.5	5886	22.9	4165	16.4
1409	12.1	1465	4.1	X	X	543	2.4		4.6	2272	8.8	2065	8.1
		25773	73.3										
				6855	61.4	15065	67.4			20854	81.3	14990	58.9
5103	44.0	4516	12.8	4334	38.6	3790	17.0		17.3	4813	18.7	8675	34.1
30	0.3	252	0.7			3499	15.6		0.3			1766	7.0
11617	100.0	35157	100.0	11189	100.0	22354	100.0	16852	100.0	25667	100.0	25431	100.0
1948		1948		1941		1948		1946		1945		1942	

TABLE II (CONTINUED)

USE	SCHENECTADY, NEW YORK		STOCKTON, CALIFORNIA		TACOMA, WASHINGTON		WATERLOO, IOWA	
	Acres	%	Acres	%	Acres	%	Acres	%
Residential	1869	28.1	1498	23.6	5622	18.3	2231	25.3
1-family	1055	15.8	1271	20.0	5307	17.3		
2-family	650	9.8	89	1.4	165	0.5		
Multi-Family	164	2.5	138	2.2	150	0.5		
Commercial	205	3.1	135	2.1	295	1.0	175	1.9
Industrial	554	8.3	569	9.0	850	2.8	302	3.4
Light Industry	131	1.9	310	4.9	299	1.0		
Heavy Industry	423	6.4	259	4.1	551	1.8		
Railroad	218	3.3	233	3.7	1182	3.8	401	4.6
Parks	427	6.4	244	3.8	1180	3.8	500	5.7
Streets	1072	16.2	1537	24.1	6452	21.0	1947	22.1
Public, Semi-public	739	11.1	327	5.2	1437	4.8	485	5.5
Other					13671	44.5 ^h		
TOTAL DEVELOPED AREA			4543	71.5			6041	68.5
Vacant	1472	22.2	1819	28.5		1	2384	27.0
TOTAL LAND AREA			6362	100.0				
Water	87	1.3	257				400	4.5
TOTAL AREA	6643	100.0	6619		30689	100.0	8825	100.0
Year	1946		1944		1947		1946	

TABLE III: URBAN LAND USE STATISTICS FOR

USE	DETROIT, MICHIGAN		KANSAS CITY, MISSOURI		MINNEAPOLIS, MINNESOTA		PORTLAND, OREGON		PROVIDENCE, RHODE ISLAND	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Residential	27059	30.2	10377	26.2	13500	36.8	9408	22.9	3247	24.8
1-family	20018	22.3	9329	23.6	12500	34.1	8879	21.6	1410	10.8
2-family	5343	6.0	477	1.2 ^c	700	1.9	218	0.5	1099	8.4
Multi-family	1698	1.9	571	1.4 ^d	300	0.8	311	0.8	738	5.6
Commercial	3400	3.8	1128	2.9	600	1.6	844	2.0	635	4.9
Industrial	4105	4.6 ^a	1344	3.4	900	2.5	1412	3.4	1158	8.8
Light Industry					900	2.5	434	1.0	988	7.5
Heavy Industry							978	2.4	170	1.3
Railroad	1700	1.9	1972	5.0	2500	6.8	1226	3.0		f
Parks			2880	7.3	2471	6.8	1177	2.9	1153	8.8
Streets	24790	27.5	7240	18.3 ^e	6912	18.9	9275	22.5	2648	20.2
Public, Semi-public	8075	9.0	1223	3.1	2722	7.5	1634	4.0	2375	18.1
Other	254	0.3 ^b								
TOTAL DEVELOPED AREA					29605	80.9	24976	60.7	11216	85.6
Vacant	19989	22.3	13329	33.8	7000	19.1	16164	39.3	1882	14.4
TOTAL LAND AREA	89732	100.0	39493	100.0						
Water			781							
TOTAL AREA			40274		36605	100.0	41140	100.0	13098	100.0
Year	1943		1946		1941		1941		1941	

CITIES OVER 250,000 POPULATION (1940 CENSUS)

ST. LOUIS, MISSOURI		SEATTLE, WASHINGTON		WINNIPEG, CANADA				LOS ANGELES COUNTY, CALIFORNIA	
Acres	%	Acres	%	Metropolitan Area		"City of Winnipeg"		Metropolitan Area.	
Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
11925	29.6	9347	23.0	5060	32.3	3086	38.5	81291	29.8
6813	16.9	8826	21.7	4668	29.8	2730	34.0	76552	28.0
2564	6.4			93	0.6	66	0.9		
2548	6.3	521	1.3	299	1.9	290	3.6	4739	1.8
1724	4.2	872	2.1	280	1.9	237	2.9	7203	2.6
3116	7.7	1839	4.5	1065	6.8	577	7.2	10501	5.5
1387	3.4	1168	2.9	498	3.2	375	4.7	2424	0.9
1729	4.3	673	1.6 ⁸	567	3.6	202	2.5	8077	3.0
1757	4.3			2400	15.3	655	8.2	4497	1.6
2557	6.3	1930	4.7	2275	14.5	1062	13.2	12188	4.5
8803	21.8	11038	27.1	3747	23.9	1945	24.2	65929	24.1
4218	10.4	804	2.0	818	5.2	453	5.7	11662	4.3
34100	84.3	25832	63.4	15645	100.0	8015	100.0	193271	70.8
6361	15.7	14902	36.6					79803	29.2
40461	100.0	40734	100.0					273074	100.0
1941		1938		1946				1941	

TABLE III FOOTNOTES

a.	Detroit, Mich	Includes -	Primary Industry	3793 acres
			Industrial Auto Parking	132 "
			Warehousing	180 "

b. " Includes 254 acres for airports

c. Kansas City, Mo. Described as "duplex"

d. " Described as "apartments"

e. " Includes 944 acres (2.4%) of "Boulevards and Parkways"

f. Providence, R.I. Included in "Light Industry" and "Commercial" figures

g. Seattle, Wash. Includes - Railroads

* These figures are for the "Metropolitan Area".

** These figures are for the "City of Winnipeg".

*** Thirty statistical areas, Los Angeles County, Calif.
Master Plan of Land Use, County of Los Angeles, 1941, p. 98a.
 These 30 areas define the metropolitan area of the county.

X Unknown

APPENDIX I: PUBLIC AND SEMI-PUBLIC LAND USE FOR SELECTED CITIES #

USE	ALBERT LEA, MINNESOTA		DETROIT, MICHIGAN		FAIRFIELD, CONNECTICUT		HARRISON, NEW YORK		MAPLEWOOD, NEW JERSEY		PORT HURON, MICHIGAN		WINNIPEG, Metropolitan Area		CANADA City of Winnipeg	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public, Semi-public	41	3.0	8075	9.0		9.6	1336	9.7	231	11.2	205	4.3	818	5.2	453	5.7
Schools	17	1.3				0.3	56	0.4	57	2.8	14.4	0.3	240	1.5	126	1.6
Other Public Buildings	4	0.3					181	1.3	23	1.1	36	0.7				
Misc. Public Property	15	1.1														
Utilities			840	0.9		4.6										
Churches	5	0.3 ^a				0.1	114	0.8 ^b			18	0.4	94	0.6	54	0.7
Cemeteries			1166	1.3		6.4					133	2.8	367	2.3	227	2.8
Institutions			2097	2.3 ^d		1.1							117	0.7	46	0.6
Recreation*			3972	4.4		3.1	985	7.3			4	0.1				
Other Semi-public									151	7.3 ^c						

This table gives more detailed information about the category "Public, Semi-public", which is summarized in Tables I - III. This data is available for only a few cities. Since all but two (Detroit and Winnipeg) are cities under 50,000, no division by size of city has been made in this table.

* Includes semi-public recreational facilities, golf clubs, private parks, etc.

a. Albert Lea, Minnesota -- Includes "Churches, Institutions"

b. Harrison, New York -- Includes "Churches and Cemeteries"

c. Maplewood, New Jersey -- Semi-public uses not broken down further

d. Detroit, Michigan -- Includes "Public and Semi-public Institutions"

APPENDIX II: PERCENTAGE OF DEVELOPED AREA OCCUPIED BY MAJOR URBAN LAND USES#
48 self-contained cities*

USE	Less than 50,000 17 cities % of developed area	50,000 to 150,000 20 cities % of developed area	150,000 & over 11 cities. % of developed area	Total 48 cities % of devel- oped area
Single-family residence	32.86	35.42	32.49	33.53
Two-family residence	3.29	3.23	4.39	3.88
Multiple dwelling	1.75	1.52	3.26	2.51
Commercial use	2.60	2.54	3.24	2.93
Public & semi-public use	11.25	7.61	9.87	9.24
Parks and playgrounds	5.07	6.40	8.10	7.21
Light industrial use	4.19	2.29	3.17	2.97
Heavy industrial use	2.63	3.38	3.75	3.51
Railroad use	4.09	4.75	4.69	4.65
Streets and alleys	32.27	32.86	27.04	29.57
Total developed area	100.0	100.0	100.0	100.0

From: "Urban Land Use - 1949", by Eldridge Lovelace, in Journal of the American Institute of Planners, Vol. XV, No. 2 (Summer 1949) p. 27.

* Some of the cities studied by Lovelace are:

Cape Girardeau, and Springfield, Missouri
 Carlsbad, Roswell, and Santa Fe, New Mexico
 Centralia, Illinois
 Davenport and Mason City, Iowa
 Greenville, South Carolina
 Hamilton, Ohio
 Hutchinson, Kansas
 Knoxville, Tennessee
 Muskogee, Oklahoma
 Petersburg, Portsmouth, and Williamsburg, Virginia
 St. Petersburg, Florida
 San Angelo, Texas
 Schenectady and Troy, New York
 Vancouver, British Columbia