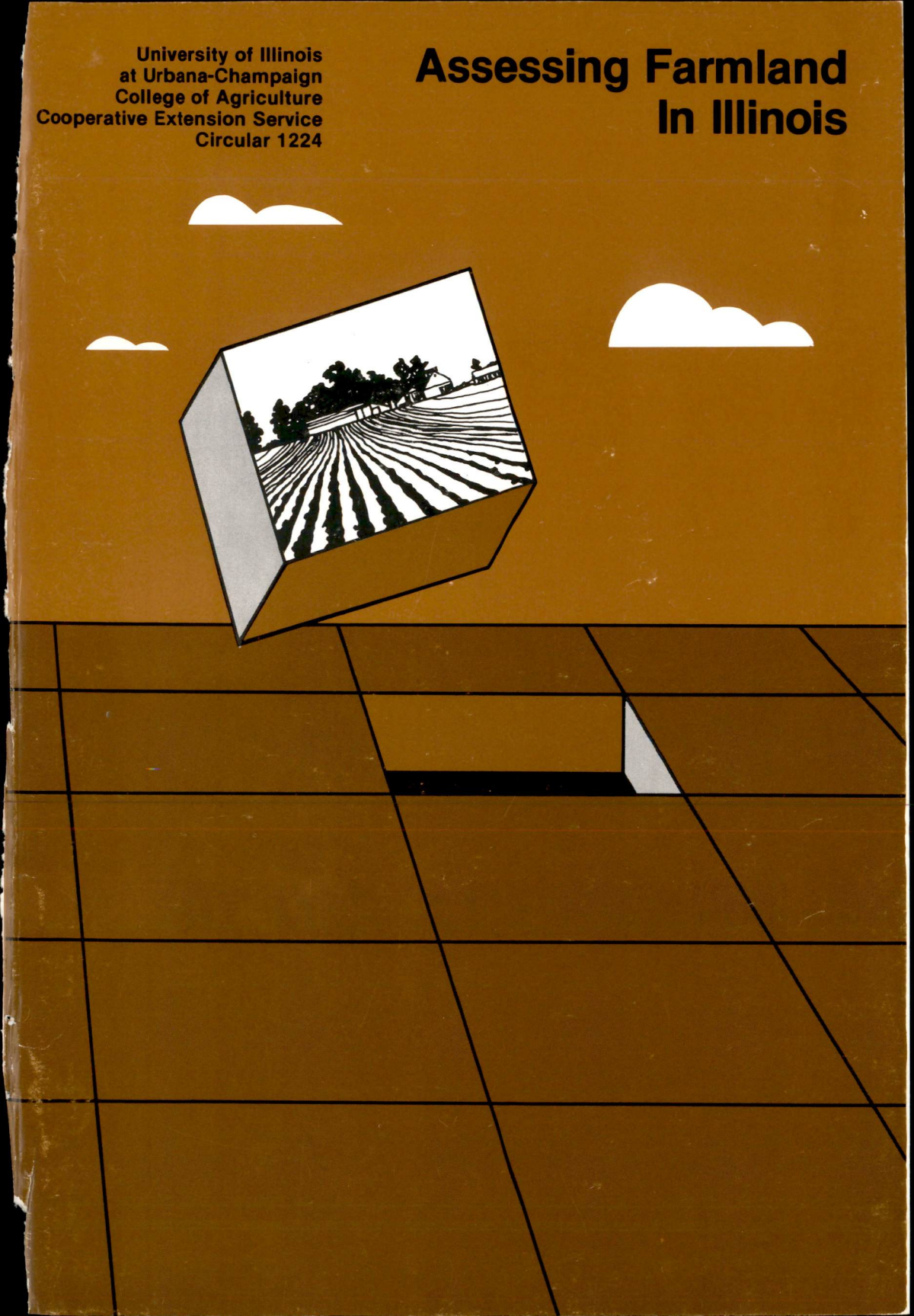
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University of Illinois
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Assessing Farmland In Illinois



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Property taxes are the means by which most of the costs of local government are paid. Property taxes are based on the assumption that the value of one's land and buildings is a measure of one's ability to contribute to these costs. In Illinois, the assessment of the value of one's land and buildings is performed by township and county assessing officials in accordance with state laws and administrative guidelines.

The tax rate that is applied to the assessed value of a taxable property also is determined locally. The rate is defined as the amount of money needed from property taxes to pay for a local government's expenditures divided by the assessed value of all property within that government's boundaries. The level of property taxation is thus directly determined by the annual budget of the local government.

About five billion dollars of property tax revenues is spent annually in the state for fire and police protection, local roads and streets, public health, parks and recreation, mental health clinics, criminal justice, and, most importantly, local schools. About 60 cents of every dollar of property taxes collected in Illinois is spent for primary and secondary education.

Until the late 1970s, farmland in Illinois was assessed in the same manner that most property in Illinois still is—on the basis of its fair cash market valuation. With the passage of what is commonly called the Illinois Farmland Assessment Act in 1977, however, farmland assessments for property tax purposes began to move away from fair cash market valuation toward agricultural use valuation. Use-value assessments, unlike market-value assessments, recognize a difference between value in use and value in exchange. Because use-value assessments are generally lower than market-value assessments, they provide property tax relief to farm owners.

With the passage of the 1981 amendment (PA82-121) to the Farmland Assessment Act, a four-year phased-in program was established for use-value assessments. Illinois joined 44 other states with differential farmland assessment programs.

Under the 1981 amendment, farmland in Illinois is assumed to have a use-value equal to the present value of the future residual income accruing to the land from farm production. To assure uniformity as well as accuracy in assessments, the state annually calculates a use-value for each soil productivity index rating and asks for local input into these values.

The following section of this circular details the legal and administrative aspects of Illinois's approach to farmland use-value assessment. Because use-values are calculated for each soil productivity index rating, the second section gives some background on how the soil productivity indexes themselves are calculated. The last two sections of this circular demonstrate the methods used to calculate use-values and assess farmland. This circular thus should give interested readers a brief but substantive overview of the way farm property is assessed in Illinois.

ADMINISTRATION OF FARMLAND ASSESSMENTS

Division of Administrative Responsibilities

Local Assessing Officials

The assessment of all taxable property, including farmland, is the duty of local assessing officials. In commission counties, the county supervisor of assessments makes the primary assessments. In township counties, the township or multitownship assessors make the primary assessments, although the county supervisor of assessments is responsible for reviewing these values. However, in some township counties the county supervisor of assessments makes the primary assessments on farm parcels when the county has elected to centralize the process in order to provide greater equity throughout the county or to reduce costs.

In all counties, those responsible for assessing farmland base their assessments on the soil productivity index use-values provided by the Department of Revenue and on the plan of implementation generally developed by the county supervisor of assessments. Both the use-values and the plan must go through a local review process before they can actually be used by the assessors.

Illinois Department of Revenue

The Department of Revenue is responsible for calculating use-value assessment data and for certifying this data to each county on an annual basis. The department is also charged with evaluating farmland assessments to ensure that each county is in compliance with the farmland assessment law at the end of the four-year phase-in period. To perform this evaluation, the department computes, on a per-acre basis, the county-average assessed valuations for cropland and for all farmland.

In addition to its certification and evaluation responsibilities, the department issues guidelines on the proper implementation of the farmland assessment law. The intent of the guidelines is to produce equitable farmland assessments throughout Illinois within the statutory provisions of the farmland assessment law. The guidelines (presented on pages 7 and 8) define four major farmland uses—cropland, permanent pasture, other farmland, and wasteland—and detail suggested assessment procedures for each use. The guidelines also suggest how counties might adjust for factors such as slope, erosion, and flooding and how they might assess acreage in roads, lanes, windbreaks, streams, drainage ditches, ponds, and other alternate uses.

The Department of Revenue is further responsible for reviewing any alternative plans of implementation or use-values proposed by county farmland assessment review committees.

County Farmland Assessment Review Committees

Under the 1981 amendment to the farmland assessment law, a county farmland assessment review committee was set up in each Illinois county. Each committee is composed of five members, one of which is the county supervisor of assessments, who serves as chair. The second member is the chair of the county board of review or another board member appointed by that chair. The remaining three members are farmers from the county. Any farm owner or operator may serve as a farmer-member of the committee.

Each county farmland assessment review committee has four main responsibilities. One is to review the use-value data provided to the county by the Department of Revenue. If a committee feels that the certified use-values are not applicable to the county, it can develop alternatives thought to be more appropriate for conditions in the county. These alternatives, with appropriate supporting documentation, are presented to the department for review.

Another of the committee's responsibilities is to review the county plan for implementing farmland use-value assessments, which is generally developed by the county supervisor of assessments. If the committee feels that the proposed plan does not fulfill statutory intent, it can develop an alternative. This alternative must also be submitted to the Department of Revenue for review.

A third responsibility of the committee is to hold a public hearing. The purpose of the hearing is to receive public comment on the proposed use-value assessment data and plan of implementation. After this hearing, the committee decides either to accept the certified use-values and the county's plan of implementation or to develop alternatives to present to the Department of Revenue.

Finally, the committee is responsible for providing technical assistance to local assessing officials. This assistance may involve the eligibility of a particular parcel for assessment as farmland, the treatment of unique and uncommon factors or factors that negatively affect productivity, or any other technical matter with which officials need assistance.

County Boards of Review

Each county has a board of review that is responsible for evaluating all assessments, including farmland assessments, set by local assessing officials and for changing any assessment that it feels has been made improperly. The county board of review also hears appeals from individual land owners and makes adjustments to assessments where warranted. Under the 1981 amendment to the farmland assessment law, the board may make across-the-board adjustments in annual farmland assessments through the use of board of review factors.

Illinois Property Tax Appeal Board

Owners of individual parcels of property who are dissatisfied with the decision of their county board of review may appeal to the Illinois Property Tax Appeal Board. The appeal board also hears the complaints of any county farmland assessment review committee that is dissatisfied with the Department of Revenue's response to its proposed alternatives to the use-values or the local implementation plan. The appeal board's decisions on the use-values or plan are final and are not subject to administrative review by the courts.

Farmland Assessment Technical Advisory Board

Also created under the 1981 amendment was the Farmland Assessment Technical Advisory Board. This is a five-member advisory board appointed by the director of the Illinois Department of Revenue. The members are technical experts from the colleges and schools of agriculture of the state universities and representatives of state and federal agricultural agencies. The responsibilities of the board are to provide data annually to the Department of Revenue for use in the calculation of the agricultural use-values and to provide technical assistance to the department in the administration of farmland assessments. To this end, the board reviews all guidelines and materials issued by the department concerning the implementation of farmland use-value assessments.

Administrative Cycle

The 1981 amendment to the farmland assessment law establishes a preliminary review cycle that precedes the actual assessment, which occurs on January 1 of each year.

On or about May 1 prior to the assessment date, the Illinois Department of Revenue makes its annual certification of use-value assessment data and county-average assessments to all county supervisors of assessments.

On or before June 1 prior to the assessment date, the county supervisor of assessments presents the review committee with the state-certified values and the county's proposed plan of implementation for the upcoming assessment year. The committee then holds a public hearing.

By August 1 the review committee must either have elected to accept the proposed values and plan or have developed alternatives. Alternatives must be presented to the Department of Revenue for review by August 1.

The Department of Revenue must review the proposed alternatives and make a decision about their acceptability by September 1. If the county review committee is dissatisfied with the department's decision, it has until October 1 to appeal that decision to the Illinois Property Tax Appeal Board.

The appeal board must hold a hearing within thirty days of receipt of the formal appeal and render its decision within sixty days. If there are less than sixty days before the assessment date of January 1, the board must render a final decision no later than December 31.

Definition of Farm Parcel

Under the farmland assessment law, the farm parcel is divided into four separate parts in the process of assessment. Each part is assessed and valued in a different fashion.

Farm Homesite

The farm homesite is defined as that land on a farm parcel being used for residential purposes. The homesite is assessed as all other residential land in the county at 33⅓ percent of its fair cash market value as residential land. The market value would be whatever comparable rural residential land is selling for in the area. This part of the farm parcel assessment is subject to county board of review and state equalization factors.

Farm Residence

The farm residence is to be assessed as all other residential improvements in the county at 33⅓ percent of its market value as residential property. The market value would be whatever comparable rural residences are selling for in the area. This part of the farm parcel assessment also is subject to county board of review and state equalization factors.

Farm Buildings

Farm buildings are assessed at 33⅓ percent of their contributory value to the productivity of the farm. Contributory value considers the current use of the improvements and what that use adds to the overall productivity of the farming operation. This part of the farm parcel assessment is subject only to county board of review factors.

Farmland

Farmland in Illinois is assessed on the basis of the use-values provided by the Illinois Department of Revenue to each county. The use-values, determined for each soil productivity index, form the basis for valuation

of three types of farmland—cropland, permanent pasture, and other farmland—as they are defined in the Department of Revenue's guidelines (see below). Adjustments may be made in the application for factors that may detract from productivity. The farmland portion of a farm parcel assessment is subject only to county board of review factors.

ILLINOIS DEPARTMENT OF REVENUE GUIDELINES

Definitions of Land Use

- CROPLAND includes all land from which crops are harvested or hay was cut; all land in orchards, vineyards, and nursery and ornamental stock; land in rotational pasture and grazing land that could have been used for crops without additional improvements; land used for cover crops, legumes, and soil improvement grasses; land on which crops failed; land in cultivated summer fallow; and idle cropland. (If land falls into any one or more of these categories, it will be assessed as cropland.)
- PERMANENT PASTURE includes any pasture land that is not normally tilled except for renovating.
- OTHER FARMLAND includes land in ponds; woodland pasture; woodland including woodlots, timber tracts, cutover, and deforested land; and farm building lots other than homesites.
- WASTELAND includes land not falling into any of the above categories and which cannot be cultivated or pastured.

Assessment Procedures

- CROPLAND will be assessed in accordance with the equalized assessed value of its soil productivity index as certified by the department. Each year the department will supply a chart showing the equalized assessed value of cropland for each productivity index. Cropland with a productivity index below the lowest productivity index certified by the department shall be assessed according to the procedure under [Section V, page F4, *Illinois Real Property Appraisal Manual* (1982)].
- PERMANENT PASTURE will be assessed at $\frac{1}{3}$ of its debased productivity index equalized assessed value as cropland. In no case will the equalized assessed value of permanent pasture be below $\frac{1}{3}$ of the equalized assessed value per acre of cropland of the lowest productivity index certified by the department.
- OTHER FARMLAND will be assessed at $\frac{1}{6}$ of its debased productivity index equalized assessed value as cropland. In no case will the equalized assessed value of other farmland be below $\frac{1}{6}$ of the equalized assessed value per acre of cropland of the lowest productivity index certified by the department.
- WASTELAND will be assessed based on its contributory value. In many instances wasteland contributes to the productivity of other types of farmland. Some land may be more productive because wasteland provides a path for water to run off or a place for water to collect. In cases where wasteland has a contributory value, it will be assessed at $\frac{1}{6}$ of the value of the lowest productivity index of cropland certified by the department. When wasteland has no contributory value, a zero assessment is recommended.

(continued)

GUIDELINES, continued

Debasement Factors

- DEBASEMENTS FOR SLOPE AND EROSION. Adjustments to a productivity index for slope and erosion should be made using Table 3 on page F5 of the *Illinois Real Property Appraisal Manual* (1982) [reproduced on page 15 of this circular].
- DEBASEMENTS FOR FLOODING. The productivity index of land that is subject to flooding should be adjusted as described in Circular 1156 published by the University of Illinois, College of Agriculture, Cooperative Extension Service [also described on page 16 of this circular].
- DEBASEMENTS FOR PONDING. No adjustment for ponding will be made. Where ponding consistently produces a crop loss, then a flooding adjustment should be made. [See page 16 for an explanation.]
- DEBASEMENTS FOR FIELD SIZE AND SHAPE. At this time the department offers no guidelines for field size and shape adjustments.
- DEBASEMENTS FOR DROUGHTINESS. No adjustment for soil droughtiness will be made. [See page 16 for an explanation.]

Guidelines for Alternate Uses

- ROADS. Acreage in dedicated roads will be removed from the total acreage when calculating the weighted average productivity index, and no value will be assigned to acreage in roads. Exception: If a portion of the right-of-way is being put to a farm use, this portion should be assessed.
- CREEKS, STREAMS, RIVERS, AND DRAINAGE DITCHES. Acreage in creeks, streams, rivers, and drainage ditches will be removed from the total acreage when calculating the weighted average productivity index and should be assessed as wasteland.
- GRASS WATERWAYS AND WINDBREAKS. Acreage in grass waterways and windbreaks will be assessed as other farmland.
- PONDS. Ponds will be assessed as other farmland. Exception: If a pond is used as part of the homesite, it will be assessed with the homesite at 33⅓ percent of the market value. If the pond is used commercially, it will disqualify the parcel for farmland assessment.
- POWER LINES. No adjustment should be made.
- LANES AND NONDEDICATED ROADS. Acreage in lanes and nondedicated roads will be assessed as the adjacent land use. This could be as cropland, permanent pasture, other farmland, or wasteland.
- BORROW PITS. Borrow pits will be assessed as wasteland. If borrow pits are a part of the homesite or are being used commercially, the same comments made under ponds will apply to borrow pits.

ILLINOIS SOIL PRODUCTIVITY INDEXES

The agricultural use valuation of land for property tax purposes depends on the productivity of the soil. Soil productivity is essentially the capacity of a soil to supply the nutrient and water needs of a growing crop. The objective in indexing soil productivity is to provide a scale that can be used to compare the relative capacities of Illinois soils to produce the state's principal grain crops.

The capacity of a soil to supply a crop's needs is greatly influenced by management practices and the suitability of the particular crop to the specific growing conditions. To provide a rating scale on which all soils are treated equitably, therefore, Illinois soil productivity indexes take into account not only the inherent physical properties of the soil but also these other influencing factors.

Factors Considered in Illinois Soil Productivity Indexes

Soil Properties and Topography

The most basic influence on the ability of a soil to produce is its physical and chemical properties. These properties are the result of how and from what the soil was originally formed as well as how climate and time have worked on these parent materials.*

Soils are classified and mapped on the basis of the kind, thickness, and arrangement of horizons or layers, as well as on the basis of such properties as the color, texture, structure, reaction, consistence, and mineralogical and chemical composition of these horizons. In the classification process, soils are named for the town or geographic feature near where they are first identified.

By comparing the individual properties of the classified soils, one begins to be able to identify those soils with more potential to produce the state's principal grain crops. For example, the soil Muscatine, with its dark brown to black color, nearly level slope, thickness, and prairie-loess parentage, can be expected to have more potential than the soil O'Fallon, with its moderately sloping nature, acidic qualities, and brown and gray silty clay loam horizon.

*For an account of how Illinois soils were formed and from what materials, see *Soils of Illinois,* pp. 34-39, University of Illinois Agricultural Experiment Station Bulletin 725. This bulletin is available from your county Extension office or from Agricultural Publications, 47 Mumford Hall, University of Illinois, 1301 W. Gregory Drive, Urbana, IL 61801, (217-333-2548).

Crop Suitability

The potential of soils to produce depends, of course, on the crop being produced since crops vary considerably in their adaption to different climates and soil conditions. For example, oats, a cool-season crop, yield poorly in the warmer climate of southern Illinois, and soybeans are better able than corn to maintain yields in areas of marginally droughty soils. For these and similar reasons, the indexing system is based on each soil's potential to produce the four principal grain crops in Illinois—corn, soybeans, wheat, and oats.

Because these grain crops vary in importance from one part of the state to another, the soil productivity indexes also are weighted to reflect the relative acreage of each grain crop in the region where a particular soil occurs. For example, more weight is given to wheat in the productivity indexes of predominantly southern Illinois soils than in the indexes of soils predominantly found in central and northern Illinois. Similarly, less emphasis is put on oat yields in productivity indexes for predominantly southern Illinois soils and more emphasis in indexes for predominantly northern Illinois soils.

Level of Management

Crop yields on a particular soil under a given climate further depend on the level of management. A soil that consistently produces high yields when properly drained and fertilized and when close attention is given to weed and insect control will not produce well if these management inputs are inadequate or poorly timed. Because the effect of management is so great on crop yields, the level of management must be defined for measures of soil productivity to have any meaning.

The University of Illinois uses two management levels for rating Illinois soils. The basic management level includes the minimum inputs considered necessary for crop production to be feasible. Some drainage, for example, is required before crops can be grown on soils that naturally drain poorly. Some limestone must be applied to highly acidic soils. Some nitrogen, either from fertilizers, manure, or legumes, is needed for corn production. These minimal or basic requirements are far too low, however, for sustained high yields.

The high management level includes inputs that are near those required for maximum profit with current technology. Crop yields under the high management level also tend to increase as the management ability of Illinois farmers and the management inputs available to them improve.

Since productivity indexes are relative rather than absolute scales, it is more important that the same management level be used for soil comparisons than that the absolute yield levels be exact. Although yields

have tended to increase as management has improved, the relative differences between soils change very little. Thus, productivity indexes within a management scale are more stable measures of soil productivity than absolute yields, which fluctuate from year to year.

*Calculation of Productivity Indexes**

The actual data used to calculate the soil productivity index of a particular soil consist of (a) long-term, estimated, crop yields on that soil at a specified management level, (b) a base yield for each crop (used to convert estimated yields to a percentage basis), and (c) the proportions of the cropland acreage that are used for each crop in the area of the state where the soil occurs.

Several sources of information are used in establishing long-term, estimated, grain crop yields for each soil. These include long-term yield records from the Farm Business Farm Management (FBFM) program, long-term crop yields under specified management levels at the various University of Illinois agronomy research centers around the state, and average yields reported by the Illinois Cooperative Crop Reporting Service. Where data are not available for a particular soil, yield estimates are developed by comparing yields on closely related soils and making adjustments to reflect soil differences. The long-term crop yields used for each soil series under both basic and high levels of management can be found in Table 2 of Circular 1156.

The base yields used to convert yield estimates to a percentage basis are the average of the yields obtained under a basic level of management for several of the more productive soils in the state. These soils were selected because a large data base is available as a result of university experiments under specified levels of management. The average or base yields used for conversion purposes are as follows: corn, 103 bushels; soybeans, 33 bushels; wheat, 34 bushels; and oats, 66 bushels per acre.

The proportions of grain crop acreages used to weight the productivity indexes for the importance of each crop are based on figures supplied by the Illinois Cooperative Crop Reporting Service. The proportions used for northern Illinois are 55 percent for corn, 35 percent for soybeans, 6 percent for wheat, and 4 percent for oats. In southern Illinois, the proportions used for corn, soybeans, wheat, and oats are 35, 45, 20, and 0, respectively.

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*For those interested in a more complete discussion of soil productivity indexes, Cooperative Extension Service Circular 1156, *Soil Productivity in Illinois*, can be requested from the county Extension office or by writing Agricultural Publications.

Shown below is a sample calculation of a soil productivity index for a northern Illinois Fayette soil under high management. Similar procedures are used for basic management, but the estimated yields are lower.

Line Number		Corn	Soybeans	Wheat	Oats
1	Estimated yield under high level of management, bushels per acre	129	39	53	73
2	Base yield (index = 100)	103	33	34	66
3	Relative yield (line 1 ÷ line 2 × 100)	125.2	118.2	155.9	110.6
4	Fraction of total grain crop acreage	0.55	0.35	0.06	0.04
5	Weighted relative yield (line 3 × line 4)	68.9	41.4	9.4	4.4
6	Productivity index (sum of line 5 data)		124.1		
	Rounded to the nearest multiple of 5 = 125				

The productivity indexes used in assessing farmland in Illinois are the average of the indexes calculated for each soil series under a basic and high level of management (see Table 1). For those interested in the indexes under both the basic and high levels for each soil, see Table 2 in Circular 1156.

Adjustments to Productivity Indexes

Soil productivity indexes calculated by the procedure above apply to soils on nearly level topography that are not eroded or subject to flooding. Because slope, erosion, or flooding will reduce soil productivity, the index must be adjusted where a soil is subject to slope, erosion, or flooding.

It is important that adjustments in productivity indexes for increasing degrees of slope and erosion correspond to the management level used in calculating the productivity index. It also is important to note the quality of the subsoil when making slope and erosion adjustments. The effects of increasing slope and erosion are more severe on soils with subsoils unfavorable for root development than on soils with subsoils high in permeability, water-holding capacity, and fertility. Table 2 gives the percentages by which one needs to adjust the soil productivity index for increasing degrees of slope and erosion on soils with the quality of subsoils indicated. The data used in determining these percentages considered basic and high levels of management; these percentages reflect the average of these two levels.

Table 1. Productivity Indexes (PI) for Average Level Management

Soil no.	PI	Soil no.	PI	Soil no.	PI	Soil no.	PI	Soil no.	PI
2	87	54	47	109	87	178	82	242	105
3	87	55	110	112	95	180	107	243	100
4	85	56	115	113	95	184	85	244	117
5	80	57	100	116	92	187	75	248	92
6*	55	59	127	119	87	188	95	249	107
7*	42	60	100	120	57	189	110	250	92
8	57	61	115	122*	67	191	97	252	112
12	77	62	110	125	110	192	92	253	60
13	82	67	110	127	105	194	80	256	85
14	80	68	127	128	102	197	117	257	112
15	87	69	112	130	97	198	127	259	97
16	85	70	112	131	85	199	120	261	70
17	100	71	82	132	100	200	92	262	87
18	100	72	97	134	95	201	90	264	72
19	85	73	117	136	82	204	97	265	90
21	92	74	117	137	82	205	82	266	85
22	87	75	105	138	112	206	100	268	110
23	82	76	115	141	87	208	92	271	82
24	100	77	125	142	120	210	100	272	100
25*	45	78	110	145	115	212	85	274	90
26	82	81	127	146	102	214*	87	275	127
27	95	82	105	147*	80	215	92	277	120
28	97	83	87	148	115	218	92	278	107
29	62	84	65	149	125	219	115	279	100
30	50	85	52	150	87	221	105	280	100
34	95	87	82	151	97	223	97	282	45
35	55	88	67	152	125	224	82	284	122
36	125	89	82	153	115	227	97	286	87
37	120	91*	90	154	130	228*	67	287	95
40	85	92	60	155*	67	229	70	288	102
41	130	93*	45	159	90	230	85	289	100
42	75	97	95	162	115	232	110	290	100
43	130	98	72	164	90	233	100	291	97
45	90	100	90	165	85	234	115	292	100
46	115	102	105	167	92	235	97	293	120
47	115	103	105	171	120	236	105	294	112
48	110	104	115	172	85	238	80	295	100
49	75	105	110	173*	72	239	105	296	105
50	112	107	120	175	82	240	97	297	105
53	65	108	85	176	110	241*	37	298	90

Source: Illinois Department of Revenue, *Illinois Real Property Appraisal Manual,* Springfield, Illinois, December, 1982, page F7.

NOTE: For a list of soil names and their corresponding number, see Appendix C.

*Indicates unfavorable subsoil.

Table 1—*Continued*

Soil no.	PI	Soil no.	PI	Soil no.	PI	Soil no.	PI	Soil no.	PI
300	107	365	92	452	102	556*	77	691	45
301*	80	369	125	453	102	560*	62	696	90
302	105	370	85	454	107	561	70	697	105
304	80	375	112	456	97	562	100	698	97
306	120	379	90	457	65	563	77	706	70
307	95	380	67	460	82	564	90	723	100
308	100	382	95	461	90	565	85	727	85
309*	50	386	115	462	85	567	100	728	95
310	90	387	105	463	82	568	57	731	90
311	57	388	102	465	92	570	92	740	120
312	77	389*	40	467*	72	572	95	741	55
314	70	390*	77	469	90	574	85	742	87
315*	62	393*	67	470	80	576	75	743	90
316	22	394	112	471*	30	578	95	745*	90
317	92	397*	42	472	75	581*	60	746	87
318*	75	398	117	474	65	583	92	752	85
320*	75	400	107	475	90	584*	50	753	82
321	100	402	120	481	127	585	77	761*	50
322	97	404	100	482	92	587	112	763	107
323*	72	410	82	484	125	589	90	764	82
324	90	411	95	490	120	590	95	765	82
325	87	412	110	493	97	594	115	768	62
326	92	413	67	494	97	597	117	769*	72
327	82	414	102	495	110	598	57	771	85
329	102	415	105	496	102	599	40	772	95
330	100	416	105	497	102	600	120	774	80
331	112	417*	62	501	72	603	115	776	112
332	72	418*	72	503	85	605*	45	777	77
333	107	419	97	504	40	606	37	779	55
334	100	420	90	505*	52	609	117	780	82
335	80	422	82	506	90	617	105	781	97
337	87	424	117	508	105	619	97	782	105
338*	70	425*	30	509	75	620*	62	783	72
339*	50	426	77	511*	45	628	65	786*	55
340*	65	427	80	513	75	633	95	787	87
342	97	428	117	516	87	647	95	791	110
343	102	429	87	524	90	656	100	792	117
344	105	430	117	531	87	660*	57	903	100
346	85	431	107	537*	95	661	97	940	72
347	105	435	107	546	87	665	75	955*	30
348	105	440	110	547	80	673	80	956	67
353	110	442	115	549*	82	682	105	956*	47
354	60	443	107	551	45	683	127	961	60
361	82	448	90	554	87	684	117	977	30
363	95	451	127	555	82	685	90		

Table 2. Slope and Erosion Adjustment Factors (%)

Slope	Favorable subsoil			Unfavorable subsoil		
	Uneroded	Moderate erosion	Severe erosion	Uneroded	Moderate erosion	Severe erosion
0	100	98	89	100	94	79
2	100	96	87	100	92	77
4	99	95	86	98	90	75
6	98	93	85	96	89	74
8	96	92	83	94	87	72
10	95	90	82	93	85	70
12	93	89	80	90	83	68
14	91	86	77	88	81	66
16	88	84	75	86	78	63
18	86	81	73	83	76	61
20	83	78	69	80	72	57
22	80	75	67	77	69	55
24	77	72	63	74	65	51
26	73	68	60	70	62	48
28	70	64	57	67	59	43
30	66	60	52	62	56	39
32	61	56	47	58	50	35
34	56	52	43	54	47	32
36	53	49	41	50	43	29
38	51	46	37	48	40	27
40	49	44	36	46	38	25
42	48	43	35	45	37	23
44	47	42	34	44	37	22
46	46	42	34	42	36	22
48	46	42	33	42	36	

Source: Illinois Department of Revenue, *Illinois Real Property Appraisal Manual,* Springfield, Illinois, December, 1982, page F8.

SLOPE CLASSES: Slope classes are designated on soil maps by alphabetical letters and represent a range of slopes: **A** = 0-2% slope; **B** = 2-4%; **C** = 4-7%; **D** = 7-12%; **E** = 12-18%; **F** = 18-50%. Because the classes represent ranges, the Department of Revenue recommends using the following central points for each alphabetical designation: **A** = 0%. **B** = 4%. **C** = 6%. **D** = 10%. **E** = 16%. **F** = 26%. However, please note that the ranges comprising each class may vary with the publication and the date mapped. Check the ranges used in the map you are consulting. If they are different from those above, choose a central point close to the midpoint of the range used in your map.

EROSION CLASSES: **1** = uneroded. **2** = moderate. **3** = severe.

Adjustments in soil productivity indexes for flooding caused by stream overflow also are important, but the effects of flooding on a particular soil depend on stream and watershed characteristics and cannot be determined without knowledge of the flooding history of the stream in a particular location. For example, if flooding in a valley has caused three years of crop failure in the past ten years, estimated yields and productivity indexes for the bottomland soil should be reduced by 30 percent from those used for the same soil that is protected from flooding. However, if flooding in the spring consistently prevents corn planting but permits a late-seeded soybean crop in most years, the productivity index should be reduced, but some consideration also should be given to the fact that a soybean crop at reduced yields due to late planting can be harvested.

Ponding of water in depressional areas of upland soils can be a problem. However, ponding and the effects of ponding over a span of several seasons is considered in the development of soil productivity indexes through the assumptions made about management and through the long-term yields used for poorly drained soils. Therefore, except in special cases where ponding is induced by man-made obstructions, where artificial drainage is not used because of unsuitable outlets, or where ponding consistently produces a crop loss, no special adjustment for ponding on upland depressions is necessary.

Drought will severely depress yields in a given year. However, the frequency of drought over a span of ten or more years is included in the long-term yield estimates used in productivity index calculations. The inclusion of some years of drought stress in the indexes accounts in part for the claims of many farmers that the long-term yield estimates are low compared with their actual yields. Because the risk of drought is considered in the yield estimates for each soil, no special adjustment for drought is suggested.

VALUATION OF FARMLAND

Calculation of Agricultural Use-Values

The 1981 amendment to the Farmland Assessment Act prescribes that the use-value of farmland for property tax purposes be determined using a residual income capitalization method (sometimes called the capitalized net income method).

In an income capitalization method, use-values are based on the present value of the residual income that will accrue to the land in the future from farm production. Residual income is the gross income received from the sale of crops less the variable and nonland fixed costs of producing the crops, and the income method assumes that this residual income will continue to be earned year after year. The present value of this yearly income into perpetuity is determined through a capitalization procedure. This procedure is symbolized by the following equation:

$$\text{Use-value} = \frac{I}{R - S}$$

where

I = residual income,

R = the capitalization rate (the nominal opportunity cost of capital for farmland purchases adjusted for local taxes),

S = the expected nominal rate of growth in residual income.

As this equation suggests, the agricultural use-value will increase as residual income increases and will decrease as the capitalization rate increases.

The 1981 amendment to the Farmland Assessment Act defines the factors that go into the income capitalization method and provides methods of measuring them. The amendment specifies that the Illinois Department of Revenue calculate residual income for each average management soil productivity index by subtracting the most recent five-year-average nonland production costs from the most recent five-year-average gross income. The amendment also defines the capitalization rate as the average of the Federal Land Bank's farmland mortgage interest rate for the same five-year period used in estimating residual income.* The expected growth rate in income is implicitly defined as zero in the amendment.

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*Market capitalization rates historically fluctuate from 3 to 4 percent, which is generally less than the Federal Land Bank's rate. There is some precedent for using the Federal Land Bank's rate in the determination of agricultural use-values. This five-year rate is authorized for use to compute use-values of farmland for federal estate tax purposes.

As detailed in the amendment, the gross income is to be calculated using (1) five-year-average prices received by Illinois farmers for corn, soybeans, wheat, and oats, as reported by the Illinois Crop Reporting Service,* (2) yields for each soil series (these are based on yield equations and the yields used to calculate soil productivity indexes),† and (3) crop rotations actually used by Illinois farmers for each soil series over a five-year period.

The amendment specifies that the nonland production costs be provided by the College of Agriculture of the University of Illinois. These costs are based on estimates of actual production costs incurred by Illinois farmers and include variable and fixed costs plus returns to management, family labor, and nonland capital. Reflecting differences in soil productivity and associated average cropping patterns, the nonland costs also vary by soil productivity index.

The crop prices, crop rotations, nonland production costs, and Federal Land Bank interest rates are those of the most recent five-year period for which complete data are available. Thus, 1983 use-values and assessments were based on data averaged over the 1977 to 1981 period, and 1984 values on data averaged over the 1978 to 1982 period. Because of the time lag involved, farmland use-values and assessments may not exactly reflect the current economic conditions of agriculture in Illinois.

The following crop prices and capitalization rates have been used in the past several years in computing agricultural use-values:

Commodity	1982 values	1983 values	1984 values
	Crop prices ($ per bushel)		
Corn	2.39	2.48	2.55
Soybeans	6.53	6.81	6.62
Wheat	3.17	3.34	3.52
Oats	1.41	1.52	1.64
	Average interest rates		
	9.77%	10.37%	11.71%

Crop rotations as a percentage, per-acre nonland production costs averaged over 1978 to 1982, and crop yields for some selected average management soil productivity indexes (PI) are listed at the top of the next page as illustrations. These data are provided each year to the

*See *Illinois Agricultural Statistics: Annual Summary*, various years, Illinois Crop Reporting Service, Springfield, Illinois.

†See Circular 1156, especially Figure 3 on page 6.

Department of Revenue by the Farmland Assessment Technical Advisory Board as specified in the amendment.

Average management PI	Corn		Soybeans		Wheat		Oats		1984 nonland production costs
	yield	%	yield	%	yield	%	yield	%	
60	76	28	26	53	34	18	47	1	$163.30
80	101	37	34	46	43	16	60	1	206.76
100	123	61	38	38	53	<1	73	<1	236.46

A computation of the agricultural use-value for an average management soil productivity rating of 100 follows as an example of the procedure. Per-acre gross income for that rating is determined by first multiplying the per-acre yields for each crop (corn, soybeans, wheat, and oats) by each crop's average price and then by weighting the results by the respective crop rotation percentage. The weighting procedure yields the relative contribution of each crop to the gross income of land containing soils of this quality. Summing the relative contributions of the four crops provides an estimate of the per-acre gross income. The steps in this procedure for the 1984 assessment year are shown below:

Crop	Yield (bu/A)	X	Price ($/bu)	X	Crop mix*	=	Contribution* ($/A)
Corn	123	×	2.55	×	0.61	=	191
Soybeans	38	×	6.62	×	0.38	=	95
Wheat	53	×	3.52	×	0.01	=	2
Oats	73	×	1.64	×	0.01	=	1
					Total gross income		289

*Values are rounded.

Subtracting the per-acre nonland production costs of $236.46 from the gross income yields a residual land income estimate of $52.54 per acre. The 1984 use-value of land with soils that have an index of 100 is then found by dividing the residual income by the Federal Land Bank's five-year average mortgage interest rate of 11.71%. This division results in an estimated 1984 agricultural use-value of about $449 per acre for soils with average management indexes of 100. The land's assessed value, however, is 33⅓ percent of the agricultural use-value, or $150 per acre in this example. These calculations can be summarized as:

$$\text{Use-value} = \frac{\text{residual income}}{\text{interest rate}} = \frac{\$52.54}{0.1171} = \$449 \text{ per acre}$$

$$\text{Assessed value} = 0.33 \times \$449 = \$150 \text{ per acre}$$

The Department of Revenue computes the per-acre assessed value of cropland in the same manner for each average management soil productivity index. These computations assume a 0 to 2 percent slope and uneroded conditions. The department certifies this value, as well as related data, to local assessing officials for use in the local assessment of individual farm parcels (see Table 3 for the certified 1984 cropland use-value assessment data).

Calculation of County-Average Assessed Values

The Illinois Department of Revenue also is required to compute annually, for each county, the average assessed value for cropland and for all farmland. The average values are based on each county's soil characteristics and farmland uses. The county-average assessed values are used by the state as benchmarks in evaluating the local application of farmland use-value assessments. This oversight function is required because some local governments overlap county boundaries and because of the state school-aid formula.

To compute each county's benchmark value, the Department of Revenue first estimates the average value of each farmland use category in the county using the appropriate soil productivity index assessed value and land use assessment level (i.e., cropland, permanent pasture, and other farmland). The department then weights the value of each category by the percentage of the county's farmland in that category.

The major shortcoming in this procedure is the lack of adequate data on the acres of cropland, permanent pasture, and other farmland in each county for each soil productivity index. As a result, the department had to allocate the acreages of each of the county's soils to one of the use categories. This allocation remains critical in the annual establishment of county-average farmland assessment values.

The soil data used in the allocation came from Bulletin 735, *Soil Type Acreages for Illinois,* published by the Agricultural Experiment Station, University of Illinois. The acreages of each soil type were allocated to one of two categories based on an evaluation of the properties of each soil type (the procedure is illustrated in Figure 1). The two categories were cropland and noncropland, and the properties considered included soil wetness, the favorability of subsoils, slope and erosion characteristics, and soil productivity indexes. For example, areas of relatively flat land with dry uneroded soils that had favorable subsoils and an average management soil productivity index of 57.5 or more were classed as cropland. On the other hand, all areas with wet soils were classed as noncropland.

Table 3. 1984 Cropland Use-Value Assessment Data

Average management soil productivity index	(1) Gross income	(2) Production costs	(3) Net income (column 1 – column 2)	(4) Proposed agricultural economic value	(5) Equalized assessed value (33⅓ % of column 4)
			(per acre)		
60	$167.52	$163.30	$4.22	$36.04	$12
61	170.49	165.93	4.56	38.97	13
62	173.46	168.66	4.80	41.01	14
63	176.44	171.19	5.25	44.82	15
64	179.41	173.82	5.59	47.76	16
65	182.38	176.44	5.94	50.70	17
66	185.35	179.07	6.28	53.64	18
67	188.32	181.69	6.63	56.58	19
68	191.29	184.32	6.97	59.52	20
69	194.27	186.96	7.31	62.43	21
70	197.24	189.59	7.65	65.37	22
71	200.21	192.21	8.00	68.32	23
72	203.27	193.83	9.44	80.61	27
73	206.33	195.45	10.88	92.91	31
74	209.40	197.07	12.33	105.29	35
75	212.46	198.69	13.77	117.59	39
76	215.52	200.31	15.21	129.89	43
77	218.58	201.93	16.65	142.19	47
78	221.64	203.55	18.09	154.48	52
79	224.71	205.17	19.54	166.87	56
80	227.76	206.76	20.97	179.08	60
81	230.83	208.41	22.42	191.46	64
82	233.89	210.03	23.86	203.76	68
83	236.95	211.65	25.30	216.05	72
84	240.02	213.26	26.75	228.44	76
85	243.08	214.89	28.19	240.73	80
86	246.14	216.51	29.63	253.03	84
87	249.20	218.13	31.07	265.33	88
88	252.27	219.74	32.52	277.71	93
89	255.33	221.36	33.96	289.50	97
90	258.38	222.99	35.39	302.22	101
91	261.45	224.61	36.84	314.60	105
92	264.51	226.22	38.28	326.90	109

(continued on next page)

Source: Illinois Department of Revenue. The department certifies new cropland assessment data each year.

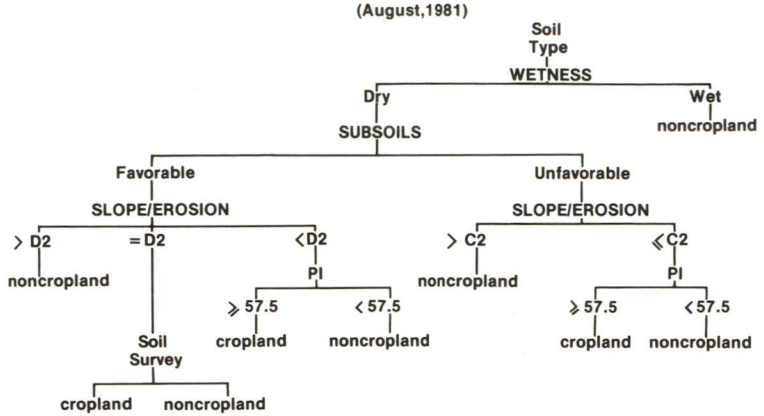
NOTE: If the average management soil productivity index for cropland is below 60, see the 1982 *Illinois Real Property Appraisal Manual,* page F4, for instructions on how to assess the acreage of that particular soil.

Table 3 —*Continued*

Average management soil productivity index	(1) Gross income	(2) Production costs	(3) Net income (column 1 – column 2)	(4) Proposed agricultural economic value	(5) Equalized assessed value (33⅓ % of column 4)
			(per acre)		
93	$267.58	$227.84	$ 39.43	$336.72	$112
94	270.64	229.46	41.17	351.58	117
95	273.69	231.09	42.60	363.79	121
96	276.76	232.70	44.06	376.26	125
97	279.81	234.32	45.49	388.47	130
98	282.89	235.38	47.50	405.64	135
99	285.95	235.93	50.02	427.16	142
100	289.01	236.46	52.55	448.76	150
101	292.07	236.98	55.08	470.37	157
102	295.13	237.49	57.63	492.14	164
103	298.20	237.99	60.20	514.09	171
104	301.26	238.49	62.77	536.04	179
105	304.32	238.97	65.35	558.07	186
106	307.38	239.45	67.93	580.10	193
107	310.45	239.91	70.54	602.39	201
108	313.51	240.36	73.14	624.59	208
109	316.57	240.81	75.76	646.97	216
110	319.63	241.25	78.38	669.34	223
111	322.69	241.68	81.00	691.72	231
112	325.76	242.10	83.65	713.92	238
113	328.82	242.52	86.29	736.89	246
114	331.88	242.94	88.94	759.52	253
115	334.94	243.33	91.60	782.24	261
116	338.00	243.45	94.54	807.34	269
117	341.07	243.55	97.51	832.71	278
118	344.13	243.65	100.47	857.98	286
119	347.19	243.75	103.43	883.26	294
120	350.25	243.85	106.39	908.54	303
121	353.31	243.95	109.35	933.82	311
122	356.38	244.05	112.32	959.18	320
123	359.44	244.16	115.28	984.46	328
124	362.50	244.26	118.30	1010.24	337
125	365.56	244.36	121.20	1035.01	345
126	368.63	244.46	124.17	1060.37	354
127	371.69	244.56	127.13	1085.65	362
128	374.75	244.66	130.09	1110.93	370
129	377.81	244.76	133.05	1136.21	379
130	380.87	244.86	136.01	1161.49	387

Figure 1. Decision Chart for Determining Cropland/Noncropland Soil Uses

Prepared by Property Tax Administration Bureau, Illinois Department of Revenue
(August,1981)



Once the soils had been classified as cropland or noncropland, the department summed up a county's acreages of first cropland and then noncropland across eleven ranges of average management soil productivity indexes. The eleven ranges used are as follows:

0 — 37.4
37.5 — 47.4
47.5 — 57.4
57.5 — 67.4
67.5 — 77.4
77.5 — 87.4
87.5 — 97.4
97.5 — 107.4
107.5 — 117.4
117.5 — 127.4
127.5 — 130.0

The acreages in each of these ranges were then divided by the county's total cropland or noncropland acreage to determine their percent contribution. Using *U.S. Census of Agriculture* data, the department also separated the noncropland acreage total into acres of permanent pasture and acres of other farmland.

Using these allocated acreages of cropland, permanent pasture, and other farmland, the Department of Revenue annually estimates the average value of cropland and all farmland in each county. However, because the allocated acreages are distributed across ranges of average management soil productivity indexes, the department uses an assessed

value that represents the midpoint of each of the eleven ranges. For the 1984 assessment year, for example, the values used were:

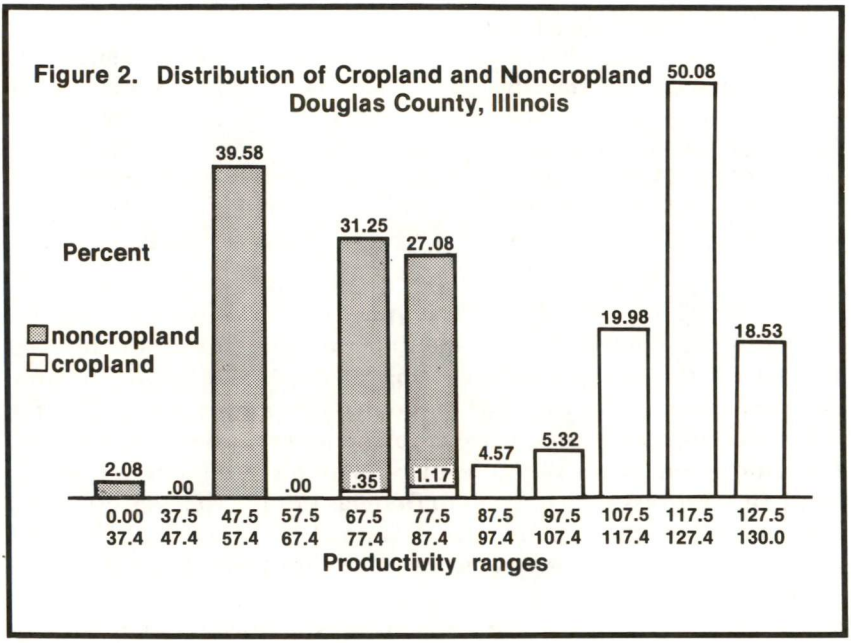
Soil productivity ranges	Midpoint of the ranges	1984 assessed value
0 — 37.4	18.7	12
37.5 — 47.4	42.5	12
47.5 — 57.4	52.5	12
57.5 — 67.4	62.5	14
67.5 — 77.4	72.5	29
77.5 — 87.4	82.5	70
87.5 — 97.4	92.5	111
97.5 — 107.4	102.5	168
107.5 — 117.4	112.5	242
117.5 — 127.4	122.5	324
127.5 — 130.0	128.8	377

The assessed values for the midpoint of the three lowest ranges are the same because the 1981 amendment puts a floor under the assessment of lower quality soils. That floor is the value for the lowest soil productivity index certified by the Department of Revenue. For 1984 that value is $12 (Table 3); therefore, the three lower ranges have an assessed value of $12 for 1984.

Perhaps the best explanation of the procedure described above would be an example. Therefore, the county-average cropland and all farmland assessed values for 1984 are computed below for Douglas County.

Douglas County's cropland acreage is distributed across seven of the eleven ranges of average management soil productivity indexes, and its noncropland acreage across four of the eleven ranges (Figure 2). The contribution of the cropland acreage included in each range to the county-average cropland assessed valuation is computed as follows:

Range	Proportion of cropland	X	1984 per-acre value ($)	=	Contribution ($/acre)
67.5 — 77.4	0.0035	×	29	=	0.10
77.5 — 87.4	0.0117	×	70	=	0.82
87.5 — 97.4	0.0457	×	111	=	5.07
97.5 — 107.4	0.0532	×	168	=	8.94
107.5 — 117.4	0.1998	×	242	=	48.35
117.5 — 127.4	0.5008	×	324	=	162.26
127.5 — 130.0	0.1853	×	377	=	69.86
				Total	295.40



For example, in Douglas County, the 19.98 percent of cropland with soils rated between 107.5 and 117.4 contributed $48.35 to the 1984 county-average cropland assessed value. Similarly, the 50.08 percent of cropland with soils rated between 117.5 and 127.4 contributed $162.26 to the 1984 county-average cropland value.

The sum of the contributions from the cropland in the seven productivity index ranges is the county-average assessed value for cropland.* In the case of Douglas County, this average is $295 per acre for 1984.

In a similar fashion, the contribution of the acres of noncropland in each soil productivity index range are computed and summed. For Douglas County these computations, shown at the top of the next page, are based on the distributions shown in Figure 2.

*The actual per-acre, county-average assessed value may be slightly lower after assessment than the value precalculated by the state due to adjustments for flooding.

Range	Proportion of non-cropland	X	1984 per-acre value ($)	=	Contribution ($/acre)
0 — 37.4	0.0208	×	12	=	0.25
47.5 — 57.4	0.3958	×	12	=	4.75
67.5 — 77.4	0.3125	×	29	=	9.06
77.5 — 87.4	0.2708	×	70	=	18.96
				Total	33.02

The $33.02 per acre in the example farm provides the basis for estimating the contribution of land in permanent pasture and in other farmland to the Douglas County average assessed value for all farmland. Recall that the assessment level for permanent pasture is one third the value of comparably productive cropland and that the level for other farmland is one sixth the value of comparably productive cropland. Applying these assessment levels to Douglas County yields an estimated average assessment for permanent pasture of $\frac{1}{3} \times \$33.02$ or $11.00 and an estimated average assessment for other farmland of $\frac{1}{6} \times \$33.02$ or $5.50.

The 1984 county-average assessments for the three farmland uses in Douglas County can thus be summarized as:

Land use	County-average assessment ($ per acre)	Total farmland (%)
Cropland	295.40	98.16
Permanent pasture	11.00	0.48
Other farmland	5.50	1.36

The county-average assessed value for all farmland is the sum of the individual land use assessments weighted by the proportion of total farmland represented by that land use. For Douglas County this procedure is:

Land use	County-average assessment ($ per acre)	X	Percent	=	Contribution ($ per acre)
Cropland	295.40	×	0.9816	=	289.96
Permanent pasture	11.00	×	0.0048	=	0.05
Other farmland	5.50	×	0.0136	=	0.07
				Total	290.08

The 1984 certified average assessment for all farmland in Douglas County is rounded to $290 per acre.

In a similar fashion the average assessments for cropland and all farmland are computed annually for all Illinois counties (see Table 4 for the 1984 county-average assessed values). As has been demonstrated in this section, soil and farmland use data for each county play a central role in establishing these farmland assessment benchmarks. Better land-use soil data from the county review committees would improve the accuracy of county-average farmland assessed values and contribute to the equity of farmland assessments across Illinois counties.

Table 4. 1984 Certification of Proposed Average Equalized Assessed Value (EAV) Per Acre of Cropland and All Farmland

County	Average EAV, cropland	Average EAV, all farmland	County	Average EAV, cropland	Average EAV, all farmland
Adams	$201	$131	Edwards	$ 90	$ 75
Alexander	98	82	Effingham	84	72
Bond	102	73	Fayette	109	92
Boone	179	172	Ford	214	201
Brown	176	109	Franklin	62	50
Bureau	268	231	Fulton	208	148
Calhoun	179	71	Gallatin	158	139
Carroll	235	186	Greene	238	175
Cass	211	143	Grundy	229	223
Champaign	293	279	Hamilton	72	59
Christian	238	225	Hancock	226	169
Clark	107	93	Hardin	95	31
Clay	76	68	Henderson	241	180
Clinton	93	76	Henry	233	207
Coles	260	233	Iroquois	190	183
Cook	148	134	Jackson	76	45
Crawford	101	88	Jasper	99	84
Cumberland	131	117	Jefferson	61	48
DeKalb	297	276	Jersey	190	129
DeWitt	306	289	JoDaviess	144	90
Douglas	295	290	Johnson	72	27
DuPage	186	176	Kane	232	219
Edgar	281	233	Kankakee	166	156

(continued on next page)

Source: Illinois Department of Revenue. The department certifies new equalized assessed values to each county each year.

Table 4—*Continued*

County	Average EAV, cropland	Average EAV, all farmland	County	Average EAV, cropland	Average EAV, all farmland
Kendall	$232	$227	Pike	$198	$143
Knox	258	200	Pope	93	41
Lake	151	141	Pulaski	89	65
LaSalle	262	246	Putnam	240	195
Lawrence	120	106	Randolph	99	71
Lee	248	235	Richland	72	63
Livingston	222	217	Rock Island	225	162
Logan	297	291	St. Clair	142	110
McDonough	309	277	Saline	89	62
McHenry	178	165	Sangamon	293	269
McLean	297	292	Schuyler	189	127
Macon	317	307	Scott	201	159
Macoupin	211	168	Shelby	178	159
Madison	169	135	Stark	284	247
Marion	69	55	Stephenson	209	185
Marshall	253	219	Tazewell	255	227
Mason	132	107	Union	123	68
Massac	95	64	Vermilion	240	225
Menard	263	224	Wabash	160	146
Mercer	270	209	Warren	310	276
Monroe	120	78	Washington	74	60
Montgomery	167	138	Wayne	76	66
Morgan	270	213	White	126	103
Moultrie	312	302	Whiteside	192	175
Ogle	220	181	Will	170	156
Peoria	223	164	Williamson	64	39
Perry	61	50	Winnebago	168	137
Piatt	309	298	Woodford	275	235

ASSESSING A FARM PARCEL

The assessing of land in a farm parcel according to its agricultural use-value consists of three major steps. First, the local assessing official determines the acreages of the major farmland uses. These land uses include cropland, permanent pasture, other farmland, wasteland, dedicated roads, building sites, etc. Second, based on the soils in the tract, the assessing official calculates a weighted or average management soil productivity index for each major land use. Third, the local official values or assesses each land use according to its soil productivity index and the guidelines furnished by the Illinois Department of Revenue.

Maps Used in the Assessment Process

The basic tools required to carry out these steps include aerial base tax maps and the county soil survey maps prepared by the USDA Soil Conservation Service (SCS) in cooperation with the Illinois Agricultural Experiment Station.

Aerial base tax maps are developed from aerial photographs that provide a complete visual record of all real property, including property boundaries. By using aerial maps with an appropriate scale, the assessing official can identify the required characteristics of each farm parcel. The Illinois Department of Revenue recommends that map scales of 1 inch to 400 feet or 1 inch to 600 feet be used for rural areas.

The SCS maps are used because they provide the soil detail needed for the assessment of individual tracts or parcels of farmland in a county. The SCS maps include the location of farmsteads, field borders, roads, woodland, ponds, and other features that aid in plotting soil boundaries accurately.

Even more importantly for assessment purposes, the four-inch-per mile soil maps delineate the types of soil in each farm parcel. The soil series is indicated by a number code.

The SCS maps also give the slope range and the degree of erosion (or amount of original surface soil remaining) for each soil series shown. Slope is designated by a letter, and erosion by a number. For example, if a portion of the map has the symbol 36C2, the soil series in that area is Tama silt loam (36), the slope is 4 to 7 percent (C), and erosion is moderate (2).* When the slope is less than two percent and the soil has no

*As mentioned in Table 2, the ranges comprising each slope class (A,B,C,D,E, and F) vary with survey publications and date mapped. Check the ranges used in your map.

evidence of erosion, the slope and erosion designations are usually omitted. Thus, 152 on a soil map designates uneroded Drummer silty clay loam with a 0 to 2 percent slope.

The smallest delineation that can be shown on a four-inch-per-mile soil map is about two acres. As a result, differences in very small areas of soils or other soil peculiarities can only be detailed in the survey descriptions that accompany each map. The information in these descriptions must be taken into account when weighting soil productivity indexes.*

At present, the Soil Conservation Service has published detailed soil surveys of 46 of the 102 counties in Illinois and is ready to publish or is completing surveys for 32 additional counties (Figure 3).

In the assessment process, the detailed SCS soil survey maps are overlaid on the aerial maps to provide an inventory of the soil series and the slope and erosion characteristics of each farm parcel (see Figure 4). If a county does not have detailed SCS soil surveys, additional steps are required to determine the amount and type of soil in the farm tract. These additional steps are provided in Appendix B.

Presented below is an example application of the procedure for assessing the farmland portion of a farm parcel.† A worksheet outlining the assessment procedure can be found in Appendix A. The worksheet organizes the steps in the assessment procedure in a logical sequence and provides space to carry out needed computations.** The worksheet is followed in developing this example farm parcel assessment. The example is based on the 320-acre farm presented in Figure 4.

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*For example, if two or more soils occur together in a pattern that is too intricate for the individual soils to be delineated at the scale being used, an adjusted productivity index must be calculated for use in step two of the assessment procedure. When the percentage that each soil contributes to the acreage in question is known, the following method of adjusting is used: the productivity index of each soil is multiplied by its percent contribution, and the resulting numbers are added together. This total is the adjusted productivity index. If the percentage of each soil type is not known, the productivity indexes for the individual soil types are simply averaged to produce an index for the acreage.

†Those interested in additional details should consult the Illinois Department of Revenue's *Illinois Real Property Appraisal Manual,* Section F, "The Assessment of Rural Property."

**The worksheet is not designed to replace the property tax record cards currently used in individual Illinois counties for assessing real property. It is intended to complement the official data enrolled on property tax record cards.

Figure 3. Status of Soil Surveys
(October, 1983)

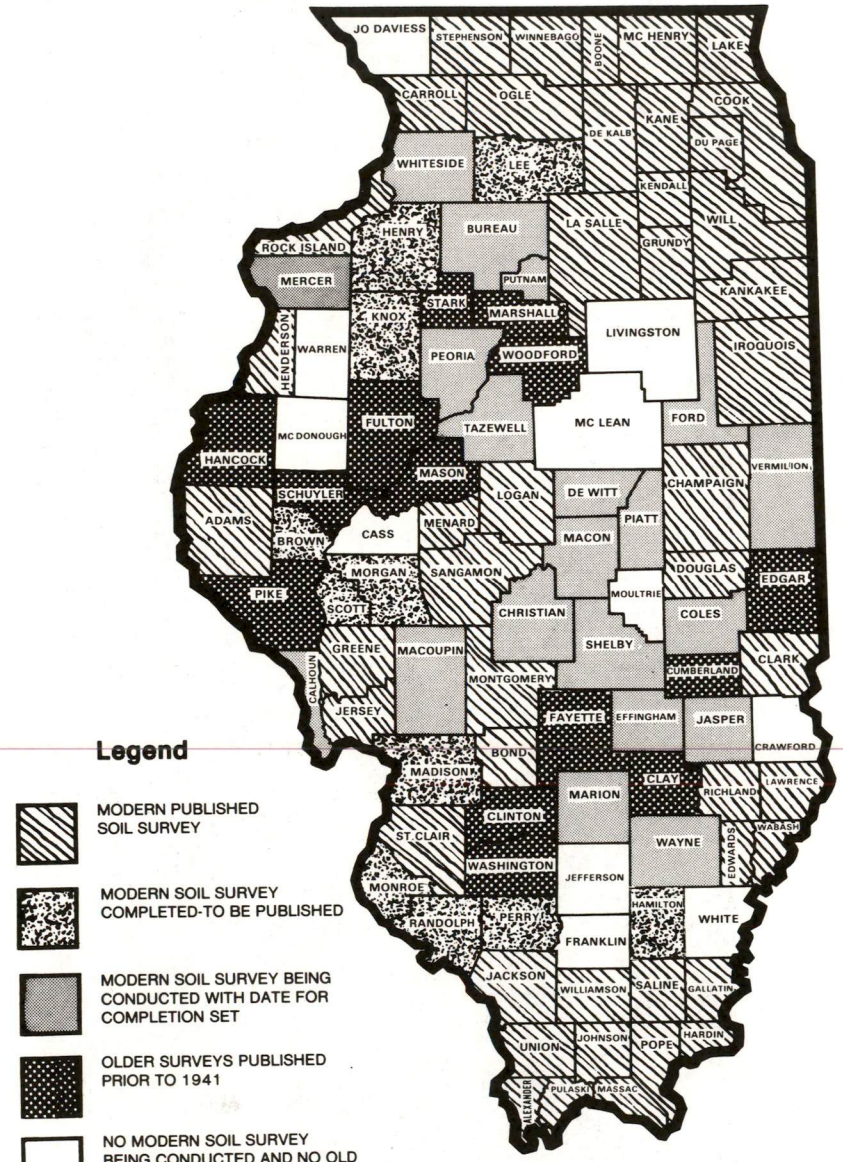
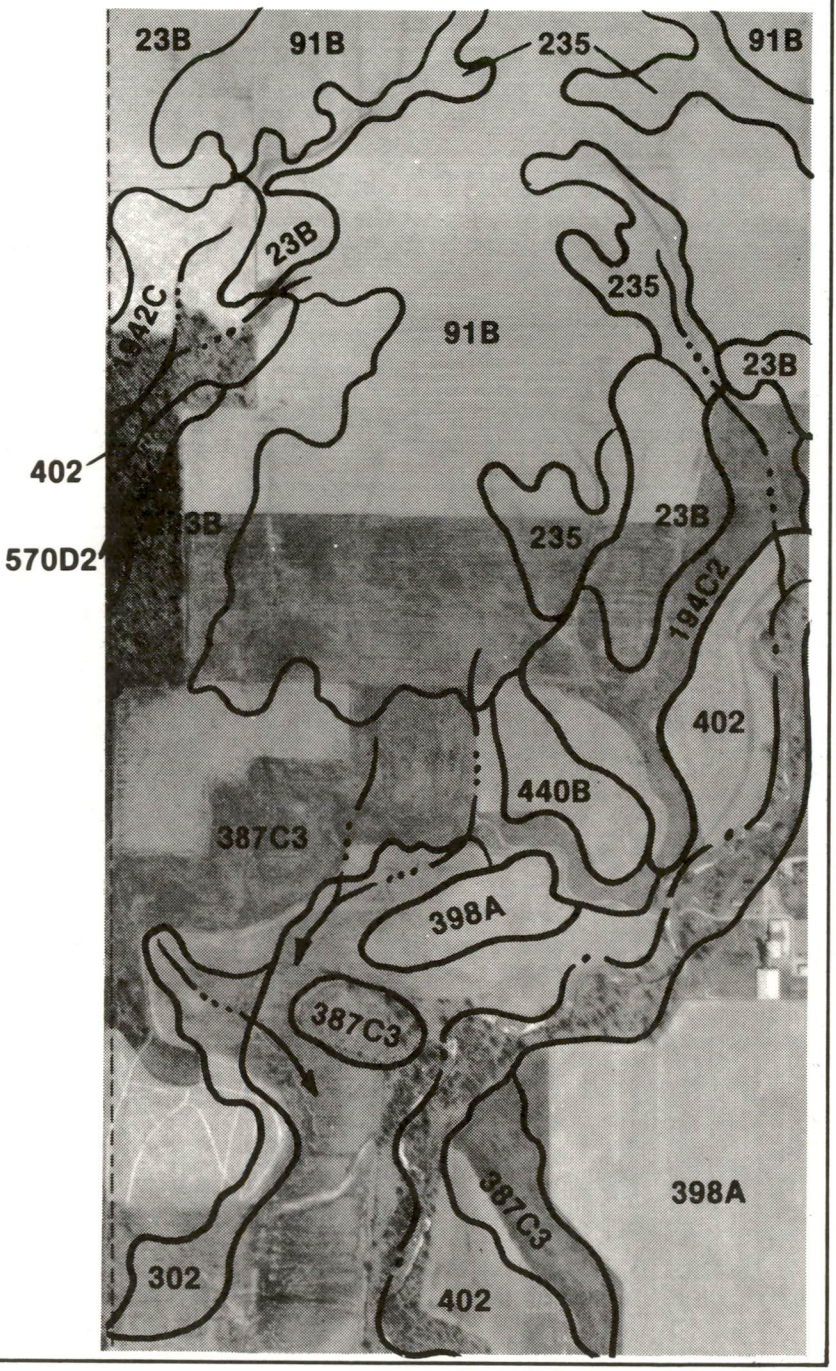


Figure 4. Aerial Base Tax Map with Soils Overlay



Step One: Determining Land Use

The first step is to determine the acres of land in alternative uses. Lines 6A through 6H on the worksheet identify the noncropland uses. (Farm tract identification data and other assessment information are recorded on lines 1 through 5.) The total noncropland acreage is entered on line 6I. The acres of land use and acres of each soil making up each land use are measured from the aerial base map using a planimeter, a grid, or an electronic area calculator.

From the aerial map (Figure 4), the acreage of each noncropland use in the example farm was determined and recorded on the example worksheet (below). Of this noncropland acreage of 46.48 acres (line 6I), 22.47 acres are to be assessed as other farmland (adding the acres in other farmland, grass waterways and windbreaks, and farm buildings), and 10.25 acres as permanent pasture.

Subtracting the 46.48 noncropland acres from the 320 acres in the example farm results in 273.52 acres of cropland. This figure is entered on line 7 of the example worksheet.

Noncropland and Cropland Acreage in Parcel

6.	Noncropland acreage	
	A. Acres in permanent pasture	10.25
	B. Acres in other farmland (includes timber and ponds)	17.49
	C. Acres in grass waterways and windbreaks	0
	D. Acres in farm buildings	4.98
	E. Acres in dedicated roads only	6.00
	F. Acres in rivers, creeks, streams, and drainage ditches	3.60
	G. Acres in wasteland (includes borrow pits)	3.16
	H. Homesite acreage	1.00
	I. Total noncropland acreage	46.48
7.	Cropland acreage, including rotational pasture (line 3 minus line 6I)	273.52

Step Two: Determining Soil Productivity Indexes

In the second step, the local assessing official must calculate a soil productivity index for each major land use. To begin the calculation, the official records the soil mapping unit and associated acreage for each land use and then looks up the appropriate average management soil productivity index for each soil series designated by the units (see Table 1, pages 13-14). As mentioned previously, however, the average management indexes are only for land with 0 to 2 percent slope and uneroded conditions. Using the adjustment factors in Table 2, the local official then adjusts each index to account for the actual slope and erosion conditions on both favorable and unfavorable subsoils (see Table 2, page 15). Multiplying the index by the appropriate factor adjusts for slope and erosion characteristics. Lines 8, 11, and 14 provide space to record the mapping unit, productivity index, adjustment factor, and acreage for cropland, permanent pasture, and other farmland, respectively.

Once the local official has determined the adjusted soil productivity index for each soil series in a farm use category, he or she must weight each adjusted index to reflect that soil's contribution to the use category. The contributions of all the soils in each use category are then summed (lines 9, 12, and 15). This sum is divided by the total acreage of that land use to achieve a weighted soil productivity index for the land use. Line 10 on the worksheet provides space for calculating the weighted index for cropland. Line 13 can be used for computing a weighted soil productivity index for permanent pasture, and line 16 for computing one for other farmland.

The example worksheet (opposite page) shows the data used to determine the weighted index for cropland for the example farm. Note that the worksheet indicates that soil 235 floods three out of every ten years. Because of this flooding, the index of soil 235 was adjusted by .70 [1.00 - (3 ÷ 10)]. Also note that the unfavorable subsoil of soil 91B was taken into account when an adjustment factor was chosen from Table 2. The weighted productivity index for cropland in this tract is shown on line 10 and is the 26,020 total contribution from all soils (line 9B) divided by the 273.52 cropland acres (line 9A), or 95.

In a similar manner, a weighted soil productivity index is computed for permanent pasture and for other farmland. The permanent pasture and other farmland computations for the example farm are shown on the example worksheet (pages 35 and 36). Line 13 indicates that the weighted tract productivity index for permanent pasture in the example farm is 75, while line 16 lists 84 as the weighted index for other farmland.

Calculation of Cropland Weighted Tract Productivity Index (PI)

8. Data for Calculating Total Contribution

Soil No.	PI	X	Adjustment	=	Adjusted PI	X	Acres	=	Contribution
235	97		.70		68		16.65		1,132
23B	82		.99		81		30.64		2,482
440B	110		.99		109		2.88		314
387C3	105		.83		87		35.00		3,045
398A	117		1.00		117		30.50		3,569
194C2	80		.92		74		20.00		1,480
302	105		1.00		105		8.60		903
402	120		1.00		120		48.76		5,851
918	90		1.00		90		80.49		7,244

9. TOTAL A. 273.52 (should agree with line 7) B. 26,020

Notes on soils 918 has unfavorable subsoil. 235 floods 3 out of every ten years.

10.

Total contribution (line 9B)	÷	Total acres (line 9A)	=	Weighted tract PI for cropland
26,020		273.52		95

Calculation of Permanent Pasture Weighted Tract Productivity Index (PI)

11. Data for Calculating Total Contribution

Soil No.	PI	X	Adjustment	=	Adjusted PI	X	Acres	=	Contribution
570D2	92		.86		79		2.25		178
194C2	80		.92		74		8.00		592

12. TOTAL A. 10.25 (should agree with line 6A) B. 770

Notes on soils None

13.

Total contribution (line 12B)	÷	Total acres (line 12A)	=	Weighted tract PI for permanent pasture
770		10.25		75

Calculation of Other Farmland Weighted Tract Productivity Index (PI)

14. Data for Calculating Total Contribution

Soil No.	PI	X	Adjustment	=	Adjusted PI	X	Acres	=	Contribution
402	120		1.00		120		3.08		370
238	82		.99		81		10.54		854
194C2	80		.92		74		8.85		655

15. TOTAL A. 22.47 (should agree with line 6B + 6C + 6D) B. 1,879

Notes on soils None

16.

Total contribution (line 15B)	÷	Total acres (line 15A)	=	Weighted tract PI for other farmland
1,879		22.47		84

Step Three: Assessing Each Land Use

The final step is to assess each land use according to the state-certified use valuation (called the equalized assessed value or EAV) for the weighted index calculated in step two and according to the specified level of assessment. It is important to use the EAVs certified for the current assessment year. The values given in this circular in Table 3 are for the 1984 assessment year only and are merely given as an example. Lines 17 through 20 on the worksheet provide space for recording the current year's EAVs for each land use. These can be obtained from the Department of Revenue or your local assessing official.

Once the appropriate EAVs have been determined for each land use, the farmland valuation is accomplished by multiplying the appropriate EAV by the acreage in the parcel dedicated to each use. Lines 21 through 24 provide space for the computations. Notice that any wasteland that contributes to the productivity of the parcel's farmland should be assessed (line 24). According to the Department of Revenue's guidelines, lines 6E, 6F, and 6G are to be assessed as wasteland.

In the example farm, cropland, with its adjusted tract soil productivity index of 95, is assessed at $121 per acre according to the 1984 certified EAVs (Table 3). That value is recorded on line 18 (see opposite page). The EAVs for permanent pasture, with a weighted index of 75, and other farmland, with a weighted index of 84, are found in Table 3 to be $39 and $76, respectively. However, the assessment level for permanent pasture is

one-third the level of comparably productive cropland, and the assessment level for other farmland is one-sixth that of comparably productive cropland. In addition, the assessed level for permanent pasture cannot be below ⅓ of the EAV of the lowest cropland productivity index certified by the state (line 17), and other farmland cannot be below ⅙ of the same EAV. Accordingly, in this example, permanent pasture is assessed at one-third of $39 or $13 per acre (line 19) and other farmland at one-sixth of $76 or $13 per acre (line 20).

Equalized Assessed Values (EAV) for the 19 84 (Current) Assessment Year

17.	19 84 EAV of the lowest cropland PI certified by the state: PI 60 (used as a reference point)	$ 12
18.	19 84 EAV of the weighted tract PI for cropland (line 10)	$ 121
19.	⅓ of the 19 84 EAV of the weighted tract PI for permanent pasture (line 13), but not less than ⅓ of line 17	$ 13
20.	⅙ of the 19 84 EAV of the weighted tract PI for other farmland (line 16), but not less than ⅙ of line 17	$ 13

The valuation of the cropland, permanent pasture, and other farmland in the example farm is shown on lines 21 through 23 of the example worksheet (page 38). It was determined that the 3.16 acres of wasteland (line 6G) contributed nothing to the example farm's agricultural value, but that the 3.6 acres of rivers, creeks, streams, and drainage ditches (line 6F) contributed to the value of adjoining cropland. The assessed value of this wasteland (line 24) is thus one-sixth the EAV of the lowest productivity index of cropland certified (line 17). Dedicated roads (line 6E) carry a zero assessment.

Total Farm Assessment

Items 25 through 28 on the worksheet provide space for a summary of all farm real estate assessments. These entries are totaled on line 29 to give the total farm real estate assessment for the year in question.

For the example farm, the 1984 homesite valuation was $2,000 (line 26); the 1984 farm building valuation was $13,400 (line 27); and the 1984 residence valuation was $10,000 (line 28). The 1984 farmland valuation was determined to be $33,528 by summing the valuations of lines 21 through 24 on line 25. The 1984 total farm real estate assessment for the example farm would thus be $58,928.

Farmland Valuation

21.	Cropland acreage (line 7)	X	EAV (line 18)	=	Cropland valuation	
	273.52		$ 121		$ 33,096	
22.	Permanent pasture acreage (line 6A)	X	EAV (line 19)	=	Permanent pasture valuation	
	10.25		$ 13		$ 133	
23.	Other farmland acreage (line 15A)	X	EAV (line 20)	=	Other farmland valuation	
	22.47		$ 13		$ 292	
24.	Any wasteland acreage (lines 6E, 6F, or 6G) contributing to farmland productivity	X	1/6 of line 17	=	Contributing waste-land valuation	
	3.60		$ 2		$ 7	

Parcel Valuation

25.	Farmland valuation (add lines 21, 22, 23, and 24)	$ 33,528
26.	Homesite (line 6H) valuation (obtain from local assessor)	$ 2,000
27.	Farm buildings valuation (obtain from local assessor)	$ 13,400
28.	Residence valuation (obtain from local assessor)	$ 10,000

19 84 Total Farm Real Estate Assessment

29.	Add lines 25, 26, 27, and 28	$ 58,928

APPENDIX A
Farm Assessment Worksheet
19 ____ Assessment Year

Date _____

County _____

1. Township or road district _____
2. Permanent parcel number _____
3. Acreage from deed _____
4. Name (from tax bill) _____
5. 19 ____ (last previous) assessed value by assessing officials:
   - A. Farmland $ _____
   - B. Homesite $ _____
   - C. Residence $ _____
   - D. Farm buildings $ _____
   - E. Total $ _____

Noncropland and Cropland Acreage in Parcel

6. Noncropland acreage
   - A. Acres in permanent pasture _____
   - B. Acres in other farmland (includes timber and ponds) _____
   - C. Acres in grass waterways and windbreaks _____
   - D. Acres in farm buildings _____
   - E. Acres in dedicated roads only _____
   - F. Acres in rivers, creeks, streams, and drainage ditches _____

G. Acres in wasteland (includes borrow pits) _____

H. Homesite acreage _____

I. Total noncropland acreage _____

7. Cropland acreage, including rotational pasture (line 3 minus line 6I) _____

Calculation of Cropland Weighted Tract Productivity Index (PI)

8. Data for Calculating Total Contribution

Soil No.	PI	X	Adjust-ment	=	Adjusted PI	X	Acres	=	Contribution

9. TOTAL A. _____ (should agree with line 7) B. _____

Notes on soils _____

10. Total contribution (line 9B) ÷ Total acres (line 9A) = Weighted tract PI for cropland

_____ _____ _____

Calculation of Permanent Pasture Weighted Tract Productivity Index (PI)

11. Data for Calculating Total Contribution

Soil No.	PI	X	Adjust-ment	=	Adjusted PI	X	Acres	=	Contribution

12. TOTAL A. _____ (should agree with line 6A) B. _____

Notes on soils _____

13. Total contribution (line 12B) ÷ Total acres (line 12A) = Weighted tract PI for permanent pasture

_____ _____ _____

Calculation of Other Farmland Weighted Tract Productivity Index (PI)

14. Data for Calculating Total Contribution

Soil No.	PI	X	Adjust-ment	=	Adjusted PI	X	Acres	=	Contribution

14. _____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

15. TOTAL A. _____ (should agree with line 6B + 6C + 6D) B. _____

Notes on soils _____

_____

16.

Total contribution (line 15B)	÷	Total acres (line 15A)	=	Weighted tract PI for other farmland
_____		_____		_____

Equalized Assessed Values (EAV) for the 19 ____ (Current) Assessment Year

17. 19 ____ EAV of the lowest cropland PI certified by the state: PI 60 (used as a reference point) $ _____

18. 19 ____ EAV of the weighted tract PI for cropland (line 10) $ _____

19. 1/3 of the 19 ____ EAV of the weighted tract PI for permanent pasture (line 13), but not less than 1/3 of line 17 $ _____

20. 1/6 of the 19 ____ EAV of the weighted tract PI for other farmland (line 16), but not less than 1/6 of line 17 $ _____

Farmland Valuation

21.

Cropland acreage (line 7)	X	EAV (line 18)	=	Cropland valuation
_____		$ _____		$ _____

22.	Permanent pasture acreage (line 6A)	X	EAV (line 19)	=	Permanent pasture valuation	
	_____		$ _____		$ _____	
23.	Other farmland acreage (line 15A)	X	EAV (line 20)	=	Other farmland valuation	
	_____		$ _____		$ _____	
24.	Any wasteland acreage (lines 6E, 6F, or 6G) contributing to farmland productivity	X	1/6 of line 17	=	Contributing wasteland valuation	
	_____		$ _____		$ _____	

Parcel Valuation

25.	Farmland valuation (add lines 21, 22, 23, and 24)	$ _____
26.	Homesite (line 6H) valuation (obtain from local assessor)	$ _____
27.	Farm buildings valuation (obtain from local assessor)	$ _____
28.	Residence valuation (obtain from local assessor)	$ _____

19 ____ Total Farm Real Estate Assessment

29.	Add lines 25, 26, 27, and 28	$ _____

APPENDIX B
Assessing Farmland Using a Soil Association Map

If a Soil Conservation Service (SCS) soil survey map is not available for a county, additional steps must be taken in the assessment procedure to determine the type and amount of soils as well as the slope and erosion characteristics of a parcel. In this determination, soil association maps play a large role.

A soil association is a grouping of individual soils that are generally found together. A soil association map is a small scale map of the county (usually on one page) showing the county and section boundaries and the soil association boundaries.

A soil association map is thus much less detailed and less accurate than the complete SCS survey. This generality does not make the soil association map useless, but it does mean that the local assessing official must do additional analysis to determine which and how much of each soil exists in a parcel. This additional analysis consists of Steps 1 through 5 below.* Once these steps have been completed, the official can then continue with Steps 1 through 3 outlined in the text.

Step 1. Secure the following publications and maps:

- Aerial Base Tax Maps
- Soil Association Maps. These are available from the Soil Conservation Service, except for the nine counties in which one has never been conducted [see last two paragraphs of this appendix for what to do for these counties]. The soil association maps will show the soil types most likely to be found in the county or in a particular area of the county. This is not exacting information, only an indication and basis for the remainder of the analysis. The soil association maps also give the physical characteristics and sometimes the percentage of the soils in each association.
- Other Aerial Base Photographs from the Soil Conservation Service or Regional Planning Commission. Aerial photographs will indicate differences in soil color and assist in determining the land use category. In addition, the Agricultural Stabilization and Conservation Service in each county has available color aerial slides, which are taken each year.

*Steps 1 through 5 are taken from the Illinois Department of Revenue's *Illinois Real Property Appraisal Manual,* Springfield, Illinois, December, 1982, pages F9 and F10.

- Topographic Maps. Topographic maps are available from the State Geological Survey, Natural Resources Building, Urbana, Illinois 61801. These maps are useful in slope determination and also show higher and lower areas often corresponding to soil type variations.
- Plat Book. Plat books can be obtained through the Farm Bureau. This book will pictorially show ownership and approximate property boundaries. Also road, creek, and river locations are shown.
- Previously Mapped Farms. The SCS has on file complete soil surveys for all parcels that have been surveyed on an individual basis. This information allows the assessing official to have detailed information on some parcels and to relate that information to surrounding parcels.
- Soil Survey Interpretation. The Soil Conservation Service has detailed descriptions of each soil type present in the county. These can be most helpful in matching field observations to the soil characteristics listed in the interpretation. Information is given as to location, slope, color, and texture, along with a more detailed analysis and management recommendations.
- Road Widths. The county highway department can provide the width of roads and information on from where the land was taken. Information on state highways is available from State of Illinois District Highway Offices. This knowledge is needed if tax maps are not available to determine the acreage to be assessed as roads.
- Property Record Cards. The property record card lists the legal description and acreage contained in each parcel.
- *Soil Type Acreages for Illinois.* This publication is University of Illinois Agricultural Experiment Station Bulletin 735. This bulletin lists the soil types present in each county, the area covered by each soil type and the percent of the county each comprises. This is useful in determining the relative probability of finding certain soils in the county.
- Flood Plain Maps and Drainage District Maps. Flood plain maps are available in many counties from county or regional planning commissions. Drainage district maps are available from the drainage district offices. These maps are useful in determining the probability of overflow and the location of drainage ditches and drainage canals.

- Old Soil Maps. Soil maps produced during the early part of the century are available for many counties. Although these maps are more general than detailed soil surveys, they are still useful in delineating some soil boundaries.

Step 2. After these suggested maps and publications are obtained, review each to obtain an understanding of how this material can be used in the location of soil types.

Step 3. Taking the information for a small area (one to several sections of land), review the information on the characteristics of the soils expected to be found in the area.

Step 4. Make a field inspection of each parcel. Generally, this can be made from public rights-of-way. In the field, the information reviewed in Step No. 3 is correlated to the physical characteristics (color, slope, wetness or dryness, erosion, etc.) of the soils observed. A decision is made in the field as to the soil types present and these are delineated on an aerial photograph. Variations in slope and erosion should also be recorded at this time. Boundaries of land use should also be outlined and labeled during the field inspection.

Step 5. Review the soil delineation in the office using the aerial photographs, topographic maps, and maps of previously surveyed farms. If any questions arise, another field inspection may be necessary.

Once the soils have been delineated using the above method, a fairly accurate soil map will have been made. Although this map cannot compare to a complete soil survey, it will be much more accurate than the soil association map if the above method is followed with diligence and consistency.

In the event that no soil association map or complete soil survey is available, the determination of soil types on a parcel is only slightly more difficult than the soil association method just outlined. In this case, all of the available maps and publications listed in Step No. 1 should be obtained.

The best source to use to correlate the soil types with their physical characteristics will be the maps of those farms for which a complete soil survey has been made. Using these soil surveys, aerial photographs, and field inspections of as many of the surveyed farms as necessary, it will become apparent where in the county or township various soils are located and their respective physical characteristics. This study, along with topographic maps and other information sources, will yield conclusions of which soil types exist in a tract and the boundaries of these soil types.

APPENDIX C
Alphabetical Index to Illinois Soil Series Numbers

Ade 98
Adrian 777
Alford 308
Allison 306
Alvin 131
Ambraw 302
Andres 293
Aptakisic 365
Arenzville 78
Argyle 227
Armiesburg 597
Ashdale 411
Ashkum 232
Assumption 259
Atkinson 661
Atlas 7
Atterberry 61
Ava 14
Ayr 204

Backbone 768
Banlic 787
Barrington 443
Batavia 105
Baxter 599
Baylis 472
Beardstown 188
Beasley 691
Beaucoup 70
Bedford 598
Beecher 298
Belknap 382
Berks 955
Billett 332
Birds 334
Birkbeck 233
Blackoar 603
Blair 5
Bloomfield 53
Blount 23
Bluford 13
Bodine 471
Bold 35
Bonfield 493
Bonnie 108
Booker 457
Boone 397
Bowdre 589
Bowes 792
Boyer 706
Brandon 956
Brenton 149
Broadwell 684
Brooklyn 136
Bryce 235
Burkhardt 961
Burnside 427

Cairo 590
Calamine 746
Calco 400
Camden 134
Canisteo 347
Cape 422
Carmi 286
Casco 323
Catlin 171
Channahon 315
Chatsworth 241
Chauncey 287
Chelsea 779
Chute 282
Cisne 2
Clarence 147
Clarksdale 257
Clarksville 471
Clinton 18
Coatsburg 660
Coffeen 428
Colo 402
Colp 122
Comfrey 776
Corwin 495
Cowden 112
Coyne 764
Crane 609
Creal 337

Dakota 379
Dana 56
Darmstadt 620
Darroch 740
Darwin 71
Del Rey 192
Denny 45
Denrock 262
Derinda 417
Dickinson 87, 742
Disco 266
Dodge 24
Dodgeville 40
Dorchester 239, 578
Douglas 128
Dowagiac 346
Downs 386
Dresden 325
Drummer 152
Drury 75
Dubuque 29
Dunbarton 505, 511
DuPage 321
Dupo 180
Durand 416

Ebbert 48
Edgington 272
Edinburg 249
Edmund 769
Edwards 312
Elburn 198
Elco 119
El Dara 264
Eleroy 547
Eleva 761
Elkhart 567
Elliott 146
Ellison 137
Elsah 475
Emma 469

Faxon 516
Fayette 280
Fieldon 380
Fincastle 496
Fishhook 6
Flagg 419
Flagler 783
Flanagan 154
Fox 327
Frankfort 320
Friesland 781
Frondorf 786

Gale 413
Genesee 431
Gilford 201
Ginat 460
Gorham 162
Gosport 551
Goss 606
Granby 513
Grantsburg 301
Grays 698
Grellton 780
Griswold 363

Hamburg 30
Harco 484
Harpster 67
Harrison 127
Hartsburg 244
Harvard 344
Harvel 252
Hayfield 771
Haymond 331
Hennepin 25
Herbert 62
Herrick 46
Hesch 389, 390, 537
Hickory 8
High Gap 556
Hitt 506
Homer 326
Hononegah 354
Hoopeston 172
Hosmer 214
Houghton 97, 103
Hoyleton 3
Huey 120
Huntington 600
Huntsville 77
Hurst 338

Iona 307
Ipava 43
Iva 454

Jacob 85
Jasper 440
Joliet 314
Joslin 763
Joy 275
Jules 28
Juneau 782

Kane 343
Kankakee 494
Karnak 426
Keller 470
Keltner 546
Kendall 242
Keomah 17
Kernan 554
Keytesville 309

Kidder 361
Knight 191

La Hogue 102
Lamont 175
Landes 304
La Rose 60
Lawler 647
Lawndale 683
Lawson 451
Lax 628
Lena 210
Lisbon 59
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Albany

TPJ -- J for Zellerbach?

Psnl. prop. in agric? (The invention of the wheel occurred when they first excempted psnl. prop.)

Rolling stock, farm machinery

Livestock

Granaries

Raisins, wines,

Grocery stores

Ctg. tables

Maps

Timber undercount.

Fred Forberg

Va. cities are not part of cities.

Golf courses

X Distribn. formulas – using assd. values (e.g. unitary tax distrib. formula)

X Perceiver – to perceive or tax

Supplemental Reading List

T. Alexander Majchrowicz */

Initial planning for the Economic Research Service/International Association of Assessing Officers Workshop included an examination of literature related to assessment, appraisal, and taxation processes. From this initial literature search and subsequent review, a list of publications relevant to the topics of the workshop was compiled. The reference list includes only recent publications--none is dated prior to 1980. This date was chosen to list works with which all workshop participants may not be familiar and should not be construed as an indication of the importance of materials published before 1980. Comprehensive reference lists for pre-1980 publications are found in many of the assessment, appraisal, and taxation journals and texts printed in that time period.

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United States Department of Agriculture
Economic Research Service
Washington, D.C. 20250

September 14, 1983

Mason Gaffney
3040 Tyler Avenue
Riverside, California 92503

Dear Mase:

I learned incidentally, one day, that one of the teachers in my daughter's high school had completed her doctorate on Carlyle. Within a half hour of our conversation about "the widow collecting nettles" she had a source. I thought you might like to share the fruits of my mini-quest.

You will note of course, that the passage is not precisely the same as the wording in "Progress and Poverty" and that it is in quotes. My counselor on Carlyle said that Tom was given to quoting himself without citation, a practice not uncommon in his day (especially Tom). Thus, the words may appear elsewhere. Henry George's version by omitting "and the law" does seem to change the meaning.

The passage enclosed is from Thomas Carlyle. The Complete Works of Thomas Carlyle. Vol. 4 NY: Thomas Crowell, 1869, p. 48. (The works are published in various volumes and collections.) The quotation is in his third essay "New Poor Law" of his set of essays on Chartism (the third paragraph).

Best regards.

Gene

GENE WUNDERLICH

Enclosure

A connoisseur of quotes -
send Prairie R!

diminished," as they cannot well help being; that no statistic tables as yet report much increase of deaths by starvation: this we do know, and not very conclusively anything more than this. If this be absorption of all the labor of the country, then all the labor of the country is absorbed.

To believe practically that the poor and luckless are here only as a nuisance to be abraded and abated, and in some permissible manner made away with, and swept out of sight, is not an amiable faith. That the arrangements of good and ill success in this perplexed scramble of a world, which a blind goddess was always thought to preside over, are in fact the work of a seeing goddess or god, and require only not to be meddled with: what stretch of heroic faculty or inspiration of genius was needed to teach one that? To button your pockets and stand still, is no complex recipe. *Laissez faire, laissez passer!* Whatever goes on, ought it not to go on; "the widow picking nettles for her children's dinner; and the perfumed seigneur delicately lounging in the Œil-du-Bœuf, who has an alchemy whereby he will extract from her the third nettle, and name it rent and law"? What is written and enacted, has it not black-on-white to show for itself? Justice is justice; but all attorney's parchment is of the nature of Targum or sacred-parchment. In brief, ours is a world requiring only to be well let alone. Scramble along, thou insane scramble of a world, with thy pope's tiaras, king's mantles and beggar's gabardines, chivalry-ribbons and plebeian gallows-ropes, where a Paul shall die on the gibbet and a Nero sit fiddling as imperial Cæsar; *thou* art all right, and shalt scramble even so; and whoever in the press is trodden down, has only to lie there and be trampled broad: — Such at bottom seems to be the chief social principle, if principle it have, which the Poor-Law Amendment Act has the merit of courageously asserting, in opposition to many things. A chief social principle which this present writer, for one, will by no manner of means believe in, but pronounce at all fit times to be false, heretical and damnable, if ever aught was!

And yet, as we said, Nature makes nothing in vain; not even a Poor-Law Amendment Act. For withal we are far

from joining in the outcry raised against these poor Poor-Law Commissioners, as if they were tigers in men's shape; as if their Amendment Act were a mere monstrosity and horror, deserving instant abrogation. They are not tigers; they are men filled with an idea of a theory: their Amendment Act, heretical and damnable as a whole truth, is orthodox and laudable as a *half*-truth; and was imperatively required to be put in practice. To create men filled with a theory, that refusal of outdoor relief was the one thing needful: Nature had no readier way of getting outdoor relief refused. In fact, if we look at the old Poor-Law, in its assertion of the opposite social principle, that Fortune's awards are *not* those of Justice, we shall find it to have become still more unsupportable, demanding, if England was not destined for speedy anarchy, to be done away with.

Any law, however well meant as a law, which has become a bounty on unthrift, idleness, bastardy and beer-drinking, must be put an end to. In all ways it needs, especially in these times, to be proclaimed aloud that for the idle man there is no place in this England of ours. He that will not work, and save according to his means, let him go else-whither; let him know that for *him* the Law has made no soft provision, but a hard and stern one; that by the Law of Nature, which the Law of England would vainly contend against in the long-run, *he* is doomed either to quit these habits, or miserably be extruded from this Earth, which is made on principles different from these. He that will not work according to his faculty, let him perish according to his necessity: there is no law juster than that. Would to Heaven one could preach it abroad into the hearts of all sons and daughters of Adam, for it is a law applicable to all; and bring it to bear, with practical obligation strict as the Poor-Law Bastille, on all! We had then, in good truth, a "perfect constitution of society;" and "God's fair Earth and Task-garden, where whosoever is not working must be begging or stealing," were then actually what always, through so many changes and struggles, it is endeavoring to become.

That this law of "No work no recompense" should first of

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ASSESSORS, RECORDERS, AND COMPUTERS AND WHERE THEY NOW STAND

ABSTRACT. Among the many local and other governmental officials necessarily involved with land records, especially those that are parcel-oriented, there is a singularly important triangle consisting of assessors, recorders, and computers.

This paper focuses on what that triangle looks like and may become, given the usefulness for so many that is already inherent in modern multipurpose, parcel-oriented land information systems.

INTRODUCTION

It bears repeating, even in this paper, that many local and other government officials necessarily get involved with land records in order to serve their employers, otherwise known as the people. I shall in what follows underscore the diversity of that group of officials by focusing on a singularly important triangle within it, namely, the one that joins tax assessors, recorders, and computers. This three-sided entity is critically important already in some jurisdictions, even as its computer capability awaits institutional birth in others. Assessing, after all, deals on a mass basis with fundamental activities relating to individual parcels of realty, namely, valuation and taxation. Recording tells the public, with respect to each among many parcels of realty, what a recorded transfer of that parcel manifests about the parcel's ownership. In many places both assessing and recording need what computers make possible--a jointly usable system of parcel-oriented land records available to any function needing them, in a framework of integrity and more efficient performance for all functions concerned.

To sharpen the focus I will look at four domains touched or touchable by our three-sided marvel--property, government, technology, and the user community (in a word, people).

*Views expressed are those of the author and not necessarily of the Bureau of the Census.

THE PROPERTY BASE

Our information on property emerges from something unique the Census Bureau has done every five years beginning in 1957, as part of the Census of Governments, in compliance with Title 13 of the United States Code. This is the taxable property values survey--a project in which the Bureau sends people to about 2,000 local recording and assessing offices, to enumerate on-site two samples. The first is a randomly selected group of about 200,000 individual real property sales, each with its pre-sale assessed value. The sales come from the warranty deeds in grantor-grantee indexes and similar public records, and the assessed value for each selected sale comes from the local assessment roll.

About one million individual parcel assessed values comprise the second sample. Each such value is selected on a stratified random basis from the entire realty assessment roll in the same 2,000 places.

Following enumeration, the Bureau asks a transacting party to each sale (usually buyer), to complete voluntarily a printed questionnaire, disclosing for statistical purposes only, the sales price and actual use of the property. Most people do respond, voluntarily.

Then for each usable response, the Bureau divides the assessed value of the sales price to get the assessment-sales price ratio. The median among such ratios is the de facto assessment level for the assessing jurisdiction (usually county) in terms of the market as indicated by sales prices. The ratio for each sale will of course be higher or lower than the median ratio, or in a few instances, equal to it. The Bureau averages those deviations and divides that average by the median to get the coefficient of dispersion, a measure of the extent to which individual assessed values are not at the de facto level.

By statistically expanding its second sample, one million individual parcel assessed values, the Bureau estimates distributions, within seven use categories (single and multi-family residences, commercial, agricultural, etc.), of number of parcels and assessed values which make up the taxable property base, for the country as a whole, each of its States, and many local places.

Available nowhere else on a nationally consistent basis, such statistics constitute a numerical snapshot every five years of what the entire country's real property inventory looks like, in terms of value and composition.

In the process of conducting six such surveys, the Bureau of the Census has necessarily acquired a distinctive, "hands on" familiarity with recording and assessment administration, including conveyancing documents, parcel identification and classification, aspects of public notice, and property valuation, plus the new thread in the mosaic, computerization.

In that connection, the Bureau's methodology benefited from State and local computerization, and from increasing State government participation in assessment administration. To enumerate about one of every four of the one million individual parcels selected for its assessment roll composition sample, the Bureau worked out agreements to get them on magnetic tape for over 500 of the jurisdictions involved. Moreover, it was possible to obtain tapes, for each local jurisdiction sampled, from the State governments in Arizona, Florida, and New York, and, for some counties from the State government in Tennessee, because local assessing jurisdictions provided those States routinely with such materials.

Additionally, the Bureau contracted with private vendors to get jurisdiction samples on magnetic tape for 35 counties in California, seven in Colorado, five in Nevada, one in New Mexico, and seven in Oregon. In summary, the Bureau enumerated the composition sample on magnetic tape in 540 of the 1,996 jurisdictions in the 1982 sample. Corresponding figure for 1977 was 93.

The property base is big. In 1981 the market value of locally assessed realty amounted to $6.7 trillion, a figure more than 9.5 times the corresponding estimate of $700 billion twenty-five years earlier.

Stated in terms of assessed value, the total for locally assessed realty reached $2.5 trillion, about eleven times more than the amount of $210 billion reported for 1956. The entire aggregate of assessed value, including personal property and State-assessed property, neared $3 trillion in 1981, up from a total of less than a tenth of that amount twenty-five years earlier. Most of the increase, in terms both of percentage and absolute amount, came by way of a 140 percent jump from $1.2 trillion in 1976 to $2.96 trillion in 1981. The corresponding 1982 base, probably well over $3 trillion but not yet quantified, yielded $93 billion in property taxes in 1983[1].

During the twenty-five year period beginning in 1956, the number of taxable realty parcels has increased from 61.1 million to 98.4 million. Among use categories, only "acreage and farms" exhibited little growth during that time. There were 14.2 million such parcels in 1956 and 14.8 million in 1981.

For 1981, new single-family homes sold for an average price, nationwide, of $84,377, almost 90 percent higher than the corresponding average of $44,770 in 1976. Range of prices within States in 1981 went from $51,079 in Alabama to $171,798 in Hawaii. Incidentally, a separate Census Bureau-Department of Commerce survey reported that the average sales price nationwide for a new house went over $100,000 for the first time in May of 1984, when it reached $101,000, as new home sales reached an annual rate of 612,000, down from 654,000 in May of 1983[2].

Not surprisingly, average prices of previously occupied single-family homes are lower than for new ones. In 1981 the nationwide average stood at $66,606, within a range that went from $37,596 in Arkansas to $143,209 in Hawaii. Five years earlier the corresponding nationwide

average was $34,596, ranging from $22,574 in Arkansas to $78,409 in Hawaii.

Nationwide, the aggregate assessment-sales price ratio for previously occupied single-family houses, has climbed, in stages, from 29.8 percent in 1956 to 43.9 percent in 1981. During the same period, the median area coefficient of dispersion, among all local jurisdictions sampled, has gone from 29.9 percent in 1956, down to 19.2 percent in 1966, and back up to 21.3 percent in 1981. This means essentially that, all other things being equal, and based only on sales prices, any randomly selected 1981 assessed value on an existing single-family house may have been as much as 21.3 percent above or below the assessed value which produced median ratio for the area. Twenty-five years earlier the corresponding variations up or down from the median ratio (i.e., the de facto assessment level) could have been as much as 30 percent.

Note that Census survey findings add to public knowledge about two key aspects of real estate, from an orientation that conditions much day-to-day activity affecting or affected by real property. The two aspects are status and change, and the orientation is that of the real property parcel.

Status has to do with condition at a particular moment, such as property use, attributes, location, value, ownership. Change relates to substantial alteration in one or several of such characteristics or situations.

Property in our society needs attention constantly with respect to both aspects. A simple house purchase involves questions of value, financing, property size, location, legal establishment of ownership and warranty of title. Business decisions often incorporate some kind of consensus about property just acquired or to be built, or sold, or expanded, or demolished. Similar concerns confront those responsible for public property and public policy. Here responsibility includes many functions, from effective siting of health service delivery to locating schools, to deciding on the depth of underground utility installations.

The parcel is a commonly understood and thus often useful building block. In the taxable property values survey a parcel is whatever the local assessor says it is. This usually means the idea that a parcel is the area of land in a single description, separately owned and capable of being separately conveyed. As such, the parcel is a "natural" unit in a modern land records system.

ASSESSORS AND RECORDERS - GOVERNMENT OFFICIALS

Any litany of public functions associated with status and change of property will be long, but two, assessing and recording, predominate for activity relating to real property parcels. One reason for this is that their records are important not only for effective performance of the two functions themselves, but also as sources of information useful for other functions as well.

Both assessing and recording are local responsibilities of local government officials, except in Maryland and Montana, where assessors are State employees, each assigned to or elected from specified counties or other jurisdictions. In 1981 there were 13,527 officials of primary assessing jurisdictions, of whom 9,236 had responsibility for providing the assessed values to be used for county or county-equivalent taxes[3]. Thirty-one States and the District of Columbia assign the primary or initial assessing responsibility to a county or county-equivalent official. In the six New England States (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), plus Michigan, New Jersey, New York, (except New York City and Nassau and Tompkins Counties), and Wisconsin, the assessor is a town or municipal official. A third group consisting of Kansas (where this classification is nominal) and eight other States (Illinois, Indiana, Iowa, Minnesota, Missouri, North Dakota, Pennsylvania, and South Carolina) exhibits a mixed organizational pattern, wherein municipal assessors have the duty or the option to assess, within guidelines or equalization directives of county officials.

Assessors deal with individual parcels of realty, on a mass basis. Classically they discover, list, and value for purposes of taxation all property in the assigned jurisdiction that is not specifically exempt. For assessors, identification of each property must be specific, distinctive, without ambiguity. Their records necessarily show the status of each property as of the valuation date in the jurisdiction, including the results of any changes in that status since the previous valuation date.

In 18 States and the District of Columbia, each "assessed value" which assessors officially determine should be "market value," or the same thing otherwise described. Eleven States provide two or more specified legal assessment levels, each applicable to a specified classification of property, real, or personal, or both. The eleven States follow:

State and number of classes

Alabama	3	Michigan	6	Oregon	2
Arizona	9	Minnesota	19	South Carolina	5
Iowa	4	Montana	6	Tennessee	3
Louisiana	4	North Dakota	4		

Nineteen States specify a single percentage of market value as the legal standard for all assessments. In practice, as mentioned earlier, de facto assessment levels can vary substantially from the legal levels prescribed.

Since Proposition 13 in 1978, California has had a dual standard of assessment. For any property not sold since 1978, the assessed value is that of the base year, 1975, subject to increases of no more than two percent annually. Whenever a qualifying "change of ownership" occurs, however, reappraisal is mandatory and the new assessment must be at the market value level. An additional California change emerged in 1983, with

passage of "supplemental assessment" legislation that prescribes two successive assessed values in the same year for affected property. Idaho emulated California to a degree with statutory change that bases all assessed values on the market level as of December 31, 1978.

Perennially assessors seek two goals: a de facto assessment level that is the same as the legally prescribed level, and uniformity among all individual assessments. Thus they require as much value related information as possible on each property, including sales prices, and rentals, plus data on property size, physical features, age of structures, types of construction, depreciation, and similar details. Necessarily assessors amass and maintain a data file on individual properties that is ordinarily more comprehensive and more complete than any other available anywhere. In most jurisdictions assessors, theoretically at least, arrive at a separate estimate of the value of each property annually, as of the applicable valuation date.

Land title recording in the United States is commonly a county government function, except in Connecticut, Rhode Island, and Vermont, where city and town governments have the responsibility. In a few county function States, there may be more than one recording office in a single county. Since the country had 3,041 counties in 1982,[4] the total number of recording officials nationwide approximates 3,500. They may be elected or appointed, usually with the title "recorder" or "register of deeds", but sometimes performing the recording function as part of a related job, such as county clerk or city clerk.

Recording evolved from English conveyancing transplanted to a colonial environment in the United States. Its aim historically was to promote alienation of public land and land generally, within the framework of the Land Ordinance of 1785 that institutionalized the rectangular survey system, eventually adopted in thirty States. The purpose of recording today remains to effect public notice necessary for giving the instrument of conveyance priority over adverse claims, such as those of creditors and subsequent purchasers. Recording itself usually constitutes constructive notice, assuming the recorded conveyances are reasonably discoverable, whether the subsequent purchaser has checked those discoverable land records or not[5]. An instrument of conveyance may be completely valid, and effective between the parties concerned, even if the lack of a required element (such as acknowledgement of the grantor's signature) means the instrument cannot be recorded.

There are three types of recording statutes, called race (so named because it implies a "race to the records"), notice, and race-notice. Under a "race statute," the first person to record has priority, with or without notice of a previous unrecorded transfer. Very few States have this type of law. Under a "notice statute" the first person to record has priority if that person does not have notice of a previous unrecorded transfer. About half of the States have this type. Under a "race-notice statute" the first person who takes good title without notice and also records first has priority.

There are auxiliary advantages for recorded documents. Ordinarily they are admissible in evidence without further proof. If an original is lost or destroyed, a certified copy of the record entry is admissible as secondary evidence. Where delivery of a deed is disputed, recordation creates a presumption of delivery, and under some circumstances, may even satisfy the delivery requirement.

Necessarily, recorders like assessors deal with instruments applicable to individual parcels, or groups of individual parcels. As with assessing, identification of the property involved in each instance must be specific, distinctive, without ambiguity. Assuredly recording would benefit from some of the of the provisions contained in the Uniform Simplification in the Uniform Simplification of Land Transfers Act (USLTA), though others need further review. Section 2-301 of USLTA would relax requisites for recording and is therefore progress. At the same time Section 3-202 (b) requires "indexing information" sufficient to permit recording but does not make the index part of the official record. This is very hesitant reform. The USLTA still has not been adopted by any State despite approval by the National Conference of Commissioners on State Laws in 1976, and subsequent amendment in 1977. Meanwhile, the function of recorders remains to show whatever change in status is revealed by the instruments recorded in official records that are reasonably discoverable by the public, and thus in the chain of title.

NEW TECHNOLOGY, IN EXISTING PRACTICE AND IN PROSPECT

Assessors and recorders have many important responsibilities that are separate, but some of equal importance that are interrelated.

In that connection let's look briefly at existing practices revealed by responses of assessors and recorders to planning surveys conducted by the Census Bureau a few years ago, as a preliminary to the 1982 Census of Governments.[6]

Assessors, responsible for a value for each property each year, have resorted to data processing increasingly over the last decade. As stated earlier, they are essentially mass appraisers, with a time-sensitive need to prepare the public record of individual assessed values, and to notify individual taxpayers of individual changes from assessed values of the previous period. Computers do much to satisfy this need, now for valuation as well as assessment bookkeeping, with the advent of things like multiple regression analysis and adaptive feedback.

Responses by assessors to the planning survey for 1982 reflect the increased use of computers. Almost 60 percent of those who replied said their assessment rolls are on magnetic tape. This amounts to more than four times the proportion of responding assessors who ten years earlier reported a capability for some form of computerized output - magnetic tape, punched cards, or a combination of both.

Data items commonly displayed on assessment rolls include the following (percentage of responding assessors who said so is indicated in each case):

Data item	Percentage
Gross assessed value	74 (with 65 percent reporting separate land, improvement, and total values)
Name of owner	94
Address of owner	84
Identification of subject property	
Parcel identification number	87
Parcel address	53
Legal description	78
Parcel size	66
Parcel use	64

Smaller percentages of responding assessors, as indicated, reported displaying the following additional information on assessment rolls:

Data items	Percentage
Age of assessment	38
Estimated market value	27
Purchase price	18
Date of purchase	27
Vacant lot type	43
Acreage type	49
Value of partial exemption, if any	34
Reason for partial exemption	38
Zoning classification	11
Census tract number	1

Appearance of data on the local assessment roll has particular importance because the roll is a public record, a status that often does not apply to secondary records such as individual property appraisal files. The latter will contain all physical characteristics and ownership data relating to a parcel, including sales prices, in addition to operating statements (rental income and expenses) of commercial property. Assessors will ordinarily need to classify such operating data as unavailable if not confidential.

Almost all of the recorders responding said they use grantor-grantee indexes. One out of every four reported use of a tract index as well. These latter answers came from one or more recorders in each of 35 States, including North Dakota, Oklahoma, South Dakota, and Wyoming, States cited by Curtis as maintaining the tract system of indexing. Curtis, incidentally comments that the "tract system is the ideal method for recording conveyances since all that is required of a title examiner is to ascertain the location of the land for which he is searching title and to digest the contents of the appropriate file." 7

Most common location identification recorded is the legal description, cited by nine of ten respondents. Only 20 percent of the responding recorders specified the assessor's parcel number, recommended in Section 6-207(a) USLTA as the preferred basis for geographic indexing. It might be noted that counties in California may now by ordinance require that each deed presented for recording must contain the assessor's parcel number. Los Angeles County so requires.

As for basic data items, most recorders nationwide said they include names of transacting parties, date of transfer, date of recording, and type of instrument on realty transfer instruments. Items which sometimes appear on such instruments follow, with frequency in each case as indicated:

Item	Percentage of respondents
Amount of sales price	31
Amount of assessed value	9
Size of parcel	22
Actual use of parcel	7

Among storage methods, three out of five responding recorders opt for miniaturization via microfilm or microfiche. Using available space efficiently remains a paramount concern.

Regarding automation, however, only 10 percent of those responding said that their recorded real property transfer information was available on magnetic tape. In view of computer proliferation generally since the survey, this proportion may constitute substantial understatement. If so, recorders' transmission of transfer data to other local and State officials may also be more prompt than survey findings indicated. Among recorders responding, nine out of ten said they sent transfer date to other officials (including assessors) within 30 days of recording. Four of each nine said they reported within two weeks.

A separate word is in order about jurisdiction size, and what it may imply or not imply about impending change. Many jurisdictions serve populations of less than 5,000 each. In the planning survey among recorders, for example, among 80 respondents from that population group, 59 said they accept for recording less than 500 transfer documents each year. There were 71 responses from recorders serving jurisdictions with populations between 5,000 and 10,000 each. More than half of these (39) reported that they accept less than 1,000 realty transfer instruments for recording annually. Thus, 10 percent of all recorders responding experienced a volume of less than 1,000 transfer instruments during the year preceding the survey. At the other end, three percent of respondents said they accepted for recording more than 50,000 such instruments annually.

Similar differences in size characterize the assessing environment. Jurisdiction parcel counts range from less than 1,000 in rural counties to 1.4 million in Cook County, Illinois, to two million in Los Angeles County.

Size is undoubtedly an important element among those conditioning policy and procedural choice. Whether and how to computerize exemplify the kinds of decisions size may influence, even in a time like the present, when automation can take a variety of forms. In some of such circircumstances, the important size is that of the group of places being served by a single computer facility, not the size of an individual jurisdiction.

In one recent study of 165 cities and counties in seven plains States, with populations generally ranging from 800 to 100,000,[8] Donald Norris of the University of Nebraska reports that more than half of the surveyed governments used computers in 1983. This is an increase of 17 percent over findings from a somewhat similar study in 1975. Most of the responding computer-using governments had in-house systems, most often minicomputers, though desktop and microcomputers were also frequently used. In-house administration centered in whichever department did the financial management. The "big six" among functions automated were payroll, accounting, budgeting, utility billing, tax assessment, and tax billing. Among the places surveyed, cities opted for computers in operational use almost twice as frequently as counties.

MULTIPURPOSE LAND RECORDS

With regard to public functions, there is a twin dynamic at work in any dissection of what exists and in any rationale for patterns of variety that accommodate tradition and little else. One-half of that twin force is a restive public, perhaps more impatient than vigilant, eager in any event to get on with any change that will expedite cost-effective improvement in functions deemed necessary for the common weal. The other half is, for want of a more precise term, technology, a force of frequently uncertain effect, at least in the short run, with power to frustrate as well as liberate as it struggles to viability. Moreover, it needs usually to gain widespread acceptance in a compatible manner, leaving in place what exists during whatever time transition to new departures requires.

Such is the land records environment. Improving it benefits from recognizing what each land records function needs, identifying common elements among them, and constructing the multipurpose system that will make possible more efficient performance of each, without duplication of effort and without the essentially separate, uncoordinated indexes that can hamper public access. A multipurpose system accords with what people want and with what technology makes possible. People want to be able to find what they need quickly, for each land-related activity involved, without the necessity to learn a different way to identify parcels, or read maps, or discover owners in each public office encountered.

In its "nuts and bolts" report on procedures and standards,[9] the National Research Council identified separate requirements:

For real property tax assessment

Records for locating, valuing, identifying owners of, and taxing individual parcels, such as:

Property ownership maps, with graphic as well as verbal representation of legal descriptions.

Property record files containing for each parcel the physical, fiscal, and other data necessary to appraise it (including for some a multi-year history of assessments, sales, building permits, and assessment appeals).

Market data files, with information for each property on sales, rentals, operating expenses, building costs.

Assessment rolls, the public records containing for each property the owner, legal description, assessed value, property use.

For land-title recording

Copies of deeds, land contracts, wills, other parcel-oriented documents involved in tracking changes in parcels, and in constructing for each a chain of title.

Maps for locating and identifying parcels.

Name, address, parcel-identifier, and legal description indexes usable for recourse to other land records.

For land-use planning and regulation

Site-specific records containing population, economic, social, and environmental data, needed to make land-use inventories, evaluate development, locate public facilities, make transportation plans, delineate zoning and other districts.

For public works

Records necessary in the design, construction, maintenance, and operation of public buildings, utilities, and transportation routes.

Records for mapping and maintaining underground water, sewage, electricity, gas, and telephone systems.

For public health and safety functions

Records of individual properties being altered to conform with building or occupancy code requirements.

Records of individual properties identified as hazards, or as sites of public safety structures.

For financial management functions

Records for tax billing, fiscal impact analysis, tax liens, enforcement action.

The need for land records to serve a variety of different interrelated functions establishes the reasonableness of a multipurpose system, with the following structural components:

1) A reference frame made up of a geodetic network, with monumentation as densely spaced as those for section and quarter-section corners of the Public Land Survey System.

2) A series of accurate base maps, at scales ranging from 1:500 to 1:25,000.

3) A cadastral overlay which displays each parcel and its unique identifying number.

4) A group of registers or files that contains interests in land parcels, each including a parcel identifier to facilitate use of the land data in the particular file referenced.

Achieving such structures describes a fundamental goal of the Institute for Modernization of Land Data Systems (MOLDS), a nonprofit, multidisciplinary corporation organized ten years ago to foster research and in other ways expedite development of modern multipurpose land information systems, in this and all other countries. Its board of directors includes representatives from National Association of County Recorders and Clerks, National Association of Counties, International Association of Assessing Officers, International City Management Association, Council of State Governments, American Bar Association, American Congress on Surveying and Mapping, Lincoln Institute of Land Policy, Urban and Regional Information Systems Association, other leading private sector groups, Federal agencies from the Departments of Agriculture, Commerce, Housing and Urban Development, Interior, and Transportation, plus organizations from Puerto Rico, Canada, Mexico, and other parts of the world.

Progress toward such systems in North Carolina received attention in an article by Donald P. Holliday and David H. Rogers.[10] They point out the great importance of careful planning beforehand, and of the need for a county to complete new, large-scale mapping (at scales for some areas of one inch to 100 feet) as essential for sucessfully installing and maintaining a new system. An average county in North Carolina will spend about $600,000 over three years to map 30,000 parcels of land. Of critical importance in cadastral, or parcel, maps that evolve is the unique identifier used. Holloway and Rogers call this the PIN (parcel identification number). Each parcel has a unique PIN, and this PIN is used subsequently for every function having anything to do with the parcel it identifies. The system is computerized. Each county decides on installing it voluntarily, in each case with fiscal assistance from the State.

LAND RECORDS THE PUBLIC WANTS

What the people want is what really matters, since taxes and service charges they approve, and the capital investments they agree to undertake, pay for and maintain a land records system. It must be useful to the general public.

What are people telling us they want, at least for the many public and private purposes that must be served by a parcel-oriented land records system?

In terms of the recording function, there is evident a popular consensus in favor of simplification, a maximum in intra-functional cooperation and a minimum in duplication, a sensitivity to legal requirements for the various kinds of notice, but without slavish adherence to technicalities that frustrate recording by preventing it, a similarly careful regard for title searches within limits reasonable for valid chains of title, and a disposition to automate recording, indexing, and retrieval of information wherever this is feasible.

Action on the USLTA should go forward in the above perspective, expeditiously. Its call for removing technicalities (such as acknowledgment) that prevent recordation merit support, just as its failure to make indexing an essential of recordation should be reexamined. The Act's provision for geographic indexing is a step forward that everyone can endorse, especially the provision in Section 6-207(a) that "if practicable, the index shall be based upon the system of parcels used for tax assessment." Worth considering are the Act's provisions to record material by reference and thus reduce volume by eliminating what is identified as non-essential. Section 6-204(c) authorizes use of computer storage systems, a favorable provision which may stimulate adding something else, namely the removal of any existing requirements that restrict recording to the use of paper, pen, and ink. Also to be encouraged, separate from USLTA if this is more feasible, is State legislation mandating the recording of survey plans for conveyance and subdivision, and requiring a reliable survey for all new deeds.

In terms of assessing, people have made abundantly clear their approval of things technology now brings within reach: uniform annual assessing, at the prescribed level of value, in the practical, realistic sense that assures attention every year to each taxable parcel, as laws have required for decades; individual notice of changes in assessment, in a way and at a time that allows the possibility of pursuing an assessment appeal at lowest possible cost and with greatest possible informality.

The consensus favors automating the entire assessment process, to the extent this can be accomplished in the estimation of something as inherently subjective as market value of property. It implies maximum use of multiple regression analysis and any other applicable technique that expedites appraisal. Thus it also implies the need for a land

records system that makes promptly available all data bearing on value, such as real property sales.

There is obviously public endorsement of moves by States such as Arizona, California, Florida, New York, Tennessee, and Wisconsin, to coordinate records and procedures used locally, in a computerized framework to the extent possible, with consultative and other State assistance available as needed. A corollary is approbation of efforts to standardize data bases as much as possible, with respect to elements such as property use coding and parcel identification systems. The preferred among such latter systems will be geocoded, oriented to professional survey standards.

FOOTNOTES

[1]See Quarterly Summary of Federal, State, and Local Tax Revenue, Report GT83, No. 4, For assessed value and parcel data, see Taxable Property Values and Assessment/Sales Price Ratios, vol. 2, 1982 Census of Governments, U.S. Bureau of the Census, Washington, D.C., February 1984.

[2]New York Times, June 30, 1984, page 1.

[3]See Taxable Property Values and Assessment/Sales Price Ratios, vol. 2, 1982 Census of Governments, op. cit., page XXV.

[4]Governmental Organization, vol. 1, 1982 Census of Governments, U.S. Bureau Bureau of the Census, GC82(1), Washington, D.C., page 3.

[5]See "Simplifying Land Transfers: The Recordation and Marketable Title Provisions of the Uniform Simplification of Land Transfers Act" by Jerome J. Curtis Jr.; 62 Oregon Law Review, No. 3, 1983, pp. 363-401; "The Tennessee Recording System" By Toxey H. Sewell, 50 Tennessee Law Review No. 1, Fall 1982, pp. 2-69, esp. pp. 15-16; "Land Records of the Uniform Simplification of Land Transfers Act" by Peter B. Maggs, pp. 491-510, and "The Uniform Simplification of Land Transfers Act: Article 2 - Conveyancing and Recording" by Taylor Mattis, both articles in 1981 Southern Illinois University Law Journal, no. 4, 1981.

[6]Results were tabulated and reports prepared under a cooperative arrangement with the U.S. Department of Agriculture. The one dealing with recorders, by T. Alexander Macjhrowicz, will be published later in 1984. For assessors records data, see Information Contained in Local Assessment Records, 1972 to 1982 by T. Alexander Macjhrowicz, U.S. Department of Agriculture, Economic Research Service, Natural Resource Economics Division, Washington, D.C., January 1984.

[7]Curtis, 62 Oregon Law Review, op. cit., pp.365-366.

[8]See "Computers and Small Local Governments: Uses and Users" by Donald F. Norris, Public Administration Review, January/February 1984, pp. 70-78. The researchers used a stratified random sampling procedure. They selected 75 cities with populations of 2,500 to 49,999, and 75 counties with populations under 100,000 in Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. In addition, they selected 15 Nebraska cities randomly, from those with populations of 800 to 2,499, to get material on computer use in non-urban settings.

[9]See Procedures and Standards for a Multipurpose Cadastre, report by the Panel on a Multipurpose Cadastre for the National Research Council, 1983, especially chapter 5, available from National Academy Press, 2101 Constitution Avenue, N. W., Washington, D. C. 20418. See also, from the same source, Need for a Multipurpose Cadastre, 1980.

[10]See "PINning It All Together - A New Land Records Management System" by Donald P. Holloway and David H. Rogers, Popular Government, Summer 1983, pp. 6-12.

AVAILABILITY OF LAND VALUE AND SIZE DATA FROM LOCAL LAND RECORDS

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AVAILABILITY OF LAND VALUE AND SIZE DATA FROM LOCAL LAND RECORDS

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ABSTRACT. Local government offices collect and maintain large amounts of data concerning land. These data bases include information on a diversity of subjects, such as: land value (assessed, appraised, market), parcel size, parcel location, property use (zoned, benefited, "highest and best"), ownership, date and type of transfer, sales price, and amounts of property taxes and/or transfer taxes billed. What is the availability of these data? How uniform are data base systems and definitions? What are the current and prospective storage media (mainframe tape, microcomputer disk, hard copy)? The Census Bureau monitors these and other areas in connection with its Taxable Property Values Survey conducted every 5 years as a major part of each census of governments. Data are presented on findings of such a study conducted in 1980 and previous efforts dating back, in present format, to 1957. Observations are provided regarding the availability, uniformity, and usefulness of these data in the analysis of rural (and other) land ownership and value.

INTRODUCTION

There is a wide and growing interest in land records maintained by local governments. The U.S. Department of Agriculture, Economic Research Service (ERS), has expressed a particular interest in this area. Their primary concern is

fiscal records and related land title transfer documents, as a source of information on land ownership and value. Though not always for the same reasons, the Bureau of the Census has had a longstanding interest in these same topics. The most visible expression of this interest can be found in results of the census of governments conducted every 5 years, as required by law under Title 13, United States Code, Section 161. The 1982 census, similar to those taken since 1957, covers four major subject fields--governmental organization, taxable property values, public employment, and governmental finances.

The Taxable Property Values (TPV) Survey of each census fulfills the legal mandate to include "...data on taxes and tax valuations....of states, counties, cities, and other governmental units." It provides estimates of numbers of parcels and assessed values in each of seven use categories, together with assessment-sales price ratios and coefficients of intra- and inter-area dispersion. Thus, the survey provides data on the size and composition of the taxable property base. It also addresses important equity matters such as de facto levels of assessment and the uniformity achieved at each level, within and among primary assessing jurisidictions (counties in most states) throughout the country.

The 1982 Taxable Property Values Survey covered the nearly 100 million taxable real property parcels in the Nation in 1981. By way of comparison, there were about 60 million such parcels identified by the 1957 TPV Survey. One segment of these surveys relates to the entire inventory of realty; the other addresses the portion of that inventory sold during a specified period of time. (Parcels in these surveys are whatever the various local assessors define them to be.)

Historically, for the Taxable Property Values Survey, the Census Bureau has enumerated a sample of 1-1 1/2 million realty parcels for its assessed values phase, and 200,000-250,000 property transfers for its real property sales phase. Collection of data for the former phase requires us to contact about 2,000 sample assessing jurisdictions, of the 9,200 such jurisdictions providing assessed values for county (or county-equivalent) general property taxation. Data for the latter phase were obtained from a sample of 1,500 local recorders (of the approximately 3,500 nationwide) responsible for property transfer records in the same 2,000 jurisdictions covered by the assessed values phase.

In order to carry out so extensive a project as the TPV Survey, a considerable amount of technical research and planning are required. This research covers a diversity of topics, including: Assessment administration, assessment standards, equalization, ratio studies, property taxes (ad valorem and transfer), exemptions, tax limits, parcel identification systems, property use coding, and so on. Reference materials and source documents for our research include such things as: State revenue reports; state and local ratio studies; state statutes; subscription services, such as Commerce Clearing House's "State Tax Reporter;" periodicals and professional journals, etc.

Planning for each TPV Survey includes three basic surveys: 1) Survey of Assessed Values, 2) Survey of Local Assessment Records, and 3) Survey of Real Property Transfer Records. A fourth planning survey was conducted in 1975 and again in 1980. The 1980 survey resulted in the report State and Local Ratio Studies, Property Tax Assessment, and Transfer Taxes. This latter survey will not be repeated in the near future due to budgetary and other considerations. An update of the first survey, on assessed values, is presently being processed

but will not be covered in this paper. The second and third surveys, on assessment and transfer records, are most relevant to the immediate concerns of this workshop and thus make up a major portion of the body of this paper.

ASSESSMENT ADMINISTRATION

Assessing is the responsibility of an appointed or elected county or other designated official for determining the value of property subject to local general property taxation, as of the specified valuation date. (For a state-by-state listing of titles of officials with local responsibility for the assessing function, see Attachment A.) Two characteristics affect and reflect assessment performance: Conformance with value levels, at market or other specified value level(s) prescribed in the particular state's constitution and statutes; and uniformity with the assessed value of other taxable properties subject to the same prescribed legal level(s).

Legal Standards for Assessed Values

Each state, in its constitution or statutes or both, prescribes one legal standard for all assessed values, or a group of standards covering specified types of property. The legal standard may be the same for realty and personalty, or there may be specified differences. Regardless, the standards almost always are related to market value.

In 1981, 18 states and the District of Columbia called for assessments at market value, or some equivalent--"full and true value" in Alaska, "true value in money" in Delaware, "actual value" in Nebraska, or "fair market value" in Virginia. Another group of 19 states specified a single percentage

of market value, or a way of calculating a single percentage annually. In 11 states there is no single realty assessment level. For these states, "classified property taxation" was in effect in 1981, as summarized below:

State and Number of Classes

Alabama	3	Montana	6
Arizona	9	North Dakota	4
Iowa	4	Oregon	2
Louisiana	4	South Carolina	5
*Michigan	6	Tennessee	3
Minnesota	19		

*Classification via equalizatin categories.

Three of the 19 areas in the "market value group" above provide for differential tax rates. They are the District of Columbia with three rate classes and Massachusetts and West Virginia with four each. The latter state moved to a 60 percent level in 1982 (to be implemented incrementally during subsequent reappraisals).

Another variety of legal standard is the "benefitted use" (or current use) laws. In 1981 this kind of legislation was present in all states except Georgia, which now has it, and Wisconsin which has an income tax credit. The purpose of benefitted use laws is to benefit the particular use or uses specified, frequently agricultural, open space, or historical property.

Acreage Parcels

To help bring all of the above into focus, look at Attachment B. There we see the number of parcels, aggregate assessment, and total and average estimated market value of taxable acreage (including farm) parcels, by state, in 1956. The 1981 version of these data can be seen in Attachment C.

While the total number of acreage parcels in the Nation remained fairly constant (an increase of 4 percent, from 14.2 million in 1956 to 14.8 million in 1981), changes were substantial in individual states and the U.S. totals. For example, the aggregate assessed value of acreage parcels in the county increased 742 percent (from $29 billion in 1956 to $245 billion in 1981). Similarly, the estimated market value of these acreage parcels rose by 731 percent (from $136 billion in 1956 to $1.1 trillion in 1981). A comparable increase in average value per acreage parcel occurred, up 702 percent (from $9,447 in 1956 to $75,783 in 1981).

These increases were caused by a number of factors, including inflation and a general trend toward assessing closer to full market value. This trend, of course, was mitigated for acreage parcels due to the introduction of "benefitted use" legislation (see above) now prevalent throughout the country. Unfortunately, we do not have comprehensive data base on total and average parcel size for the various property use categories. We are giving serious consideration to expanding parcel size coverage to our TPV Survey data enumerated for the 1987 census and beyond.

Attachment D shows acreage (including farm) parcels as a percentage of total parcels, and level of change over time, by state, for 1981 and 1956. The acreage parcels as a percent of total parcels ranges from about 60 percent for North Dakota (highest for 1981 and 1956) down to 2 percent for New Jersey in 1981. (The District of Columbia, as a highly urbanized area, understandably has no acreage parcels; D.C. does, however, have 9 percent of its taxable parcels assessed as vacant platted lots.)

This attachment also displays the change in rank and percent of acreage parcels between 1956 and 1981.

SURVEY OF LOCAL ASSESSMENT RECORDS

This Census Bureau survey is designed to collect data on the content and organization of local assessment records, and on estimated numbers of realty parcels on assessment rolls. Information also is sought on automated data processing capability to help identify those jurisdictions that potentially may be enumerated with the aid of computers.

Responses on the nature and content of the assessment records will be of assistance in writing instructions for field operations, as well as being a control device in evaluating the quality of field work. Also, parcel count estimates help in planning and budgeting enumerating hours and costs, and serving as a benchmark for data actually field compiled. Information supplied regarding automated data processing capability in many cases leads to computerized enumeration of assessment roll data. The sample materials submitted by the respondents provide a basis for understanding the diversity of forms and records being used by local assessing units. They also aid in communicating with Census field personnel who work with such records on-site.

The GP-1 Sample Panel

For the Survey of Local Assessment Records conducted in 1980 (copy of 1982 Form GP-1 attached), the sample panel was made up of those jurisdictions in the 1977 TPV census sample. It generally included all municipalities and townships over 50,000 population in the six New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), Michigan,

New Jersey, New York, and Wisconsin. Also included were counties for the 40 remaining states (plus the District of Columbia), with populations of 50,000 or more. Finally, selected "special circumstance" jurisdictions were added, such as, Virginia independent cities and consolidated city-county governments.

Two variations of the same basic questionnaire are being used for the 1985 version of this survey--a GP-1 ("long" form) and GP-1A ("short" form). Copies of both are attached. In general, these forms are being sent to the primary assessing officials in the areas listed below. The diversity of population categories was necessary to ensure adequate sample coverage without causing too great a respondent burden in any particular state.

GP-1:

1. Municipal and township assessing areas with populations of 50,000 or more for: Connecticut, District of Columbia, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Wisconsin.
2. County assessing areas with populations of 50,000 or more in the 40 states not covered in Item 1. above.
3. Special circumstance jurisdictions (see above).

GP-1A:

1. Counties with populations between 25,000 and 50,000, except for those in the 20 states referenced below in Items 2-5 (and Delaware whose three counties are all over 50,000 population).

2. Counties with populations between 10,000 and 50,000 in the following states: Alaska, Colorado, Idaho, Montana, Nebraska, Nevada, North Dakota, South Dakota, Utah, and Wyoming.
3. Municipalities and townships with populations between 10,000 and 50,000 in: Connecticut, Massachusetts, New Jersey, and Rhode Island.
4. Municipalities and townships with populations between 5,000 and 50,000 in the following states: Maine, Michigan, New Hampshire, and New York.
5. Municipalities and townships with populations between 2,500 and 50,000 in Vermont and Wisconsin.
6. Special circumstance jurisdictions (see above).

Results of 1979 GP-1 Survey

As was seen in Attachment D, many of the states held their acreage parcel rankings between 1956 and 1981. In fact, for both years the first 11 positions are occupied by the same states (though not in the exact order for each year). Attachment E displays for these 11 states the assessment roll coverage for selected items, based on results of our 1979 GP-1 Survey.

Valid survey responses were received from a total of 382 assessing jurisdictions in these 11 states, with 210 of these coming from Wisconsin (the only "city/town" state in this group). As expected, certain items of information are almost uniformly available, e.g., name and address of owner(s). Other information is seldom available, such as sale price. Some of the other more interesting aggregate results include: Parcel size or dimensions, 59 percent; benefited (current) use, 45 percent; actual use, 73 percent; and estimated market value, 35 percent.

RECORDING ADMINISTRATION

Land title recording in the United States is usually a function of county government. However, in Connecticut, Rhode Island, and Vermont (and District of Columbia), the city and town governments have this responsibility. In a few county-function states, there may be more than one recording office in a single county. Thus, since there are 3,041 counties in the country, three states have city/town recorders, and some counties have multiple recorders, we estimate these are approximately 3,500 recording officials nationwide. They may be elected or appointed, usually with the title "recorder" or "register of deeds." Sometimes they perform the recording function as part of a related job, such as county or city clerk. For a state-by-state listing of titles of officials performing the local recording function see Attachment F.

SURVEY OF REAL PROPERTY TRANSFER RECORDS

This survey is used to collect data on the content and organization of local real property transfer records, and on estimated volume of realty transfers. Information also is requested on automated data processing capability in an effort to identify those jurisdictions lending themselves to automated enumeration.

As with the survey of assessment records, responses on the nature and content of real property transfer records are of help both in writing instructions for field operations, as well as being a control device in evaluating the quality of field work. In a similar fashion, sales volume estimates help in planning workload and costs. Information concerning automated data processing capability often leads to computer enumeration of realty transfer data for the census survey.

The GP-2 Sample Panel

For the Survey of Real Property Transfer Records conducted in 1980 (copy of 1982 census Form GP-2 attached), the sample panel was made up of those jurisdictions in the 1977 TPV census panel. It generally included all municipalities and townships over 50,000 population in Connecticut, Rhode Island, and Vermont. Also included were counties in the states (plus the District of Columbia) with populations of 50,000 or more. A sufficient number of smaller assessing areas were included as needed to enable estimation of state area totals for the census TPV report. Finally, selected "special circumstance" jurisdictions were added, such as Virginia independent cities and consolidated city-county governments.

Again, as with the GP-1, two versions of the same basic form are being used for the 1985 version of this survey--a GP-2 ("long" form) and GP-2A ("short" form). Copies of both are attached. These forms, in general, are being mailed to the local recording official in the areas listed below.

GP-2:

1. Counties with a population of 50,000 or more, except those in Alaska and the four states (and District of Columbia) referenced in Item 2 below.
2. Municipal and township recording areas, with populations of 50,000 or more for the following: Connecticut, District of Columbia, Rhode Island, and Vermont.

GP-2A:

1. Counties with populations between 25,000 and 50,000, except for those in the 31 states referenced below in Items 2, 3, and 4 (and Alaska which has Recording Districts and the following states where all or most county

recording areas have populations of 50,000 or more and thus are covered by GP-2's: Delaware, Massachusetts, New Jersey, New York, Ohio, and Pennsylvania).

2. Counties with populations between 10,000 and 50,000 in the following states: Colorado, Idaho, Montana, Nebraska, Nevada, North Dakota, South Dakota, Utah, and Wyoming.
3. Municipalities and townships with populations between 10,000 and 50,000 in Connecticut and Rhode Island.
4. Municipalities and townships with populations between 2,500 and 50,0000 in Vermont.
5. Special circumstances (see above).

Results of 1979 GP-2 Survey

As noted earlier, the same states occupied the top 11 spots for most acreage parcels in 1956 and 1981. Attachment G shows for these states the property transfer record coverage for selected items, based on results of our 1979 GP-2 Survey.

Valid survey responses were received from a total of 250 recording jurisdictions in these 11 states. Predictably, "date of recording", "date of transfer", and "type of deed" head the list of information items most often included in transfer records. At the other end of the spectrum, items least likely to be in transfer records are: "assessed value", "actual use", and "zoned use" of property. Not unexpectedly, this coverage varies greatly from state-to-state.

STORAGE MEDIA

Current storage needs for "large" (greater than 100,000 parcels) jurisdictions' land record systems still require a mainframe/mini computer. The presently inimitable 9-track magnetic tape is still quite useful for this purpose. This probably will change in 5 to 10 years. By the 1990's, advances in video-disk technology and Intel's new '286 chips will provide even very large jurisdictions (greater than 500,000 parcels) with the ability to use a desktop micro/CPU for their land record/assessment systems. For a substantial decrease in cost and a significant increase in capability, many jurisdictions will opt for the new systems.

Exactly what will these storage schema provide? Some examples of current situations and future possibilities serve to illustrate the point. Los Angeles County currently has approximately 2 million parcels of taxable real estate. Assuming a present "run-of-the-mill" mainframe using 9-track tape at 6250 bpi and a record size of 1350 bytes, about 20 magnetic tapes would be required to hold information relating to the Los Angeles County parcel inventory. Twenty tapes, a mainframe, and the appropriate human accouterment to keep the whole thing in operation. While the needs of Los Angeles County are sobering, imagine the requirements of a system designed to keep track of the entire Nation's roll of taxable real property. At about 100,000 parcels per magnetic tape, around 1,000 tapes would be needed to store such data for the 100 million taxable parcels in the United States.

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* Based on estimated record size needed to accommodate information included in conveyance document recently developed by the American Bar Association's Property Tax Committee in its proposed Model Real property Transfer Information Act.

Compare all this with the technological numbers of the near future. While even the '286 chips as configured today would not provide adequate processing power to manipulate the data base referred to above, a mainframe coupled with optical disk storage will allow cheap and plentiful storage. Even though optical disk drives currently on the market do not allow rewrite capability, (the ability to write to a particular location more than once) their present capacities of around 600 megabytes remain impressive. Again, given the previous assumptions about our land record base, the entire county of Los Angeles could be stored on only 5 optical disks. This theoretical national database would require about 250 disks. Basically, the land information relating to these 100,000,000 parcels could be stored in a good-sized filing cabinet!

CONCLUSION

Though not the author's intention at the outset, this paper seems to raise more questions than it answers regarding availability of data from local land records. For instance, why does the content of these records differ so much from state to state, or even jurisdiction to jurisdiction? Are the information needs of these areas truly that unique? How accurate are the market value estimates produced by the Census Bureau (or others)? What alternative estimating procedures are available? Obviously this list could go on and on.

Hopefully, though, this paper does answer a few questions and provide food for thought regarding current availability of land data and possible future directions of land data record systems. If a more comprehensive, standard, and accessible land data system is to emerge it is imperative that those of us interested in this area keep abreast of each others needs and priorities. Toward that end, this Assessment Workshop is clearly a step in the right direction.

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Local Responsibility for Assessing Function

Attachment A

State No.	State Name	Level	Title of Official
01	Alabama	County	Assessor
02	Alaska	Borough or City	Assessor
03	Arizona	County	Assessor
04	Arkansas	County	Assessor
05	California	County (and San Francisco City)	Assessor
06	Colorado	County (and Denver City)	Assessor
07	Connecticut	City or Town	Assessor
08	Delaware	County	Board of Assessment
09	Dist. of Columbia	D.C.	Director of Finance-Revenue
10	Florida	County (and Jacksonville City)	Property Appraiser
11	Georgia	County (and Columbus City)	Board of Tax Assessors
12	Hawaii	County (and Honolulu City)	Assessor
13	Idaho	County	Assessor
14	Illinois	County	County Assessing Official
15	Indiana	County (and Indianapolis City)	Assessor
16	Iowa	County	Assessor
17	Kansas	County	County Appraiser
18	Kentucky	County (and Lex.-Fay.Urban Co.Govt)	Property Valuation Administrator
19	Louisiana	Parish (and New Orleans City & Baton Rouge City-City Assessor)	Parish Assessor
20	Maine	City or Town	Assessor
21	Maryland	County (and Baltimore City)	Supervisor of Assessment
22	Massachusetts	City or Town	Assessor
23	Michigan	City or Township	Assessor
24	Minnesota	County	Assessor
25	Mississippi	County	Assessor
26	Missouri	County (and St. Louis City)	Assessor
27	Montana	County (and Anaconda City and Butte City)	Assessor
28	Nebraska	County	Assessor
29	Nevada	County (and Carson City)	Assessor
30	New Hampshire	City or Town	Assessor
31	New Jersey	City or Township	Assessor
32	New Mexico	County	Assessor
33	New York	City or Town (and Nassau & Tompkins Counties-Director, Real Property Tax Service)	Assessor
34	North Carolina	County	Tax Supervisor
35	North Dakota	County	County Auditor
36	Ohio	County	County Auditor
37	Oklahoma	County	Assessor
38	Oregon	County	Assessor
39	Pennsylvania	County (and Philadelphia City)	Assessor
40	Rhode Island	City or Town	Assessor
41	South Carolina	County	County Auditor
42	South Dakota	County	Director of Equalization
43	Tennessee	County (and Metro Nashville-Davidson)	Assessor
44	Texas	County	Chief Appraiser
45	Utah	County	Assessor
46	Vermont	City or Town	Board of Listers
47	Virginia	County or Independent City	Assessor
48	Washington	County	Assessor
49	West Virginia	County	Assessor
50	Wisconsin	City and Town (Milwaukee City - City Tax Commissioner)	Assessor
51	Wyoming	County	Assessor

NUMBER OF PARCELS, AGGREGATE ASSESSMENT, AND TOTAL AND AVERAGE ESTIMATED MARKET VALUE OF TAXABLE ACREAGE (INCLUDING FARM) PARCELS, BY STATE: 1956

STATE	NUMBER OF PARCELS	AGGREGATE ASSESSMENT (MILLIONS)	ASSESSMENT -SALES RATIO	ESTIMATED MARKET VALUE TOTAL AMOUNT (MILLIONS)	ESTIMATED MARKET VALUE AVG. VALUE PER PARCEL
Alabama	283,000	258	16.4%	1,573	5,559
Alaska	*	*	*	*	*
Arizona	56,000	82	7.8%	1,051	18,773
Arkansas	636,000	164	*	*	*
California	507,000	1,790	13.9%	12,878	25,400
Colorado	128,000	428	20.1%	2,129	16,636
Connecticutt	48,000	203	36.4%	558	11,619
Delaware	18,000	75	*	*	*
D. C.	*	*	*	*	*
Florida	221,000	432	10.9%	3,963	17,933
Georgia	213,000	273	14.9%	1,832	8,602
Hawaii	0	0	*	*	*
Idaho	143,000	195	9.6%	2,031	14,205
Illinois	705,000	4,255	43.1%	9,872	14,003
Indiana	434,000	996	18.5%	5,384	12,405
Iowa	894,000	2,074	24.2%	8,570	9,586
Kansas	459,000	1,234	27.9%	4,423	9,636
Kentucky	274,000	634	29.7%	2,135	7,791
Louisiana	178,000	236	8.8%	2,682	15,066
Maine	132,000	103	30.8%	334	2,533
Maryland	81,000	445	34.4%	1,294	15,970
Massachusetts	130,000	156	24.7%	632	4,858
Michigan	506,000	1,003	19.9%	5,040	9,961
Minnesota	580,000	443	15.8%	2,804	4,834
Mississippi	352,000	264	14.6%	1,808	5,137
Missouri	603,000	1,014	26.7%	3,798	6,298
Montana	114,000	100	7.0%	1,429	12,531
Nebraska	296,000	1,196	29.6%	4,041	13,650
Nevada	13,000	58	18.2%	319	24,514
New Hampshire	55,000	72	34.4%	209	3,805
New Jersey	67,000	172	12.8%	1,344	20,056
New Mexico	59,000	118	11.9%	992	16,807
New York	323,000	728	27.7%	2,628	8,137
North Carolina	319,000	859	26.6%	3,229	10,123
North Dakota	293,000	283	15.1%	1,874	6,396
Ohio	535,000	1,666	26.1%	6,383	11,931
Oklahoma	422,000	463	15.7%	2,949	6,988
Oregon	198,000	400	15.8%	2,532	12,786
Pennsylvania	387,000	666	19.0%	3,505	9,058
Rhode Island	9,000	24	51.4%	47	5,188
South Carolina	181,000	98	*	*	*
South Dakota	223,000	887	45.8%	1,937	8,685
Tennessee	352,000	438	20.8%	2,106	5,982
Texas	964,000	1,259	9.2%	13,685	14,196
Utah	115,000	94	12.1%	777	6,755
Vermont	54,000	64	0.3%	212	3,924
Virginia	364,000	477	13.8%	3,457	9,496
Washington	310,000	382	15.0%	2,547	8,215
West Virginia	242,000	269	27.0%	996	4,117
Wisconsin	680,000	1,453	43.4%	3,348	4,923
Wyoming	29,000	100	20.6%	485	16,739
U. S. Total	14,185,000	29,083		135,820	
U.S. Average	278,137	570	19.0%	2,663	9,447

* Data Not Available

NUMBER OF PARCELS, AGGREGATE ASSESSMENT, AND TOTAL AND AVERAGE ESTIMATED MARKET VALUE OF TAXABLE ACREAGE (INCLUDING FARM) PARCELS, BY STATE: 1981

STATE	NUMBER OF PARCELS	AGGREGATE ASSESSMENT (MILLIONS)	ASSESSMENT -SALES RATIO	ESTIMATED MARKET VALUE TOTAL AMOUNT (MILLIONS)	ESTIMATED MARKET VALUE AVG. VALUE PER PARCEL
Alabama	369,506	983	8.9%	11,045	29,891
Alaska	10,597	758	*	*	*
Arizona	34,256	145	2.6%	5,577	162,801
Arkansas	626,492	874	3.1%	28,194	45,002
California	356,774	25,841	34.2%	75,558	211,782
Colorado	123,962	519	4.6%	11,283	91,017
Connecticutt	36,161	712	25.7%	2,770	76,614
Delaware	18,964	351	18.4%	1,908	100,591
D. C.	*	*	*	*	*
Florida	438,099	15,576	35.7%	43,630	99,590
Georgia	307,808	4,241	21.2%	20,005	64,991
Hawaii	63,827	1,632	23.8%	6,857	107,433
Idaho	127,923	5,019	41.6%	12,065	94,314
Illinois	585,884	9,319	12.2%	76,385	130,376
Indiana	419,017	2,705	6.9%	39,203	93,559
Iowa	888,186	22,401	27.6%	81,163	91,381
Kansas	491,169	1,932	3.3%	58,545	119,196
Kentucky	241,017	7,807	74.1%	10,536	43,714
Louisiana	203,901	587	3.2%	18,344	89,964
Maine	173,273	1,754	57.7%	3,040	17,544
Maryland	79,440	1,772	14.7%	12,054	151,742
Massachusetts	106,469	1,170	32.5%	3,600	33,813
Michigan	460,296	9,363	27.1%	34,550	75,060
Minnesota	492,846	6,565	13.1%	50,115	101,684
Mississippi	346,346	593	3.8%	15,605	45,057
Missouri	505,434	1,631	6.1%	26,738	52,900
Montana	138,076	203	1.4%	14,500	105,015
Nebraska	257,871	13,825	41.4%	33,394	129,498
Nevada	23,018	383	12.9%	2,969	128,986
New Hampshire	55,416	745	46.1%	1,616	29,162
New Jersey	54,270	1,338	54.4%	2,460	45,321
New Mexico	93,065	347	6.2%	5,597	60,138
New York	345,661	3,981	35.0%	11,374	32,906
North Carolin	503,911	11,003	44.4%	24,782	49,178
North Dakota	327,336	465	3.0%	15,500	47,352
Ohio	582,883	7,794	19.5%	39,969	68,572
Oklahoma	317,886	641	2.5%	25,640	80,658
Oregon	298,213	8,156	27.8%	29,338	98,380
Pennsylvania	307,547	1,214	10.1%	12,020	39,083
Rhode Island	8,893	84	32.6%	258	28,974
South Carolin	235,614	162	1.3%	12,462	52,890
South Dakota	195,398	2,846	17.7%	16,079	82,289
Tennessee	284,520	2,094	8.5%	24,635	86,585
Texas	1,197,093	28,139	27.6%	101,953	85,167
Utah	121,725	274	6.2%	4,419	36,306
Vermont	42,810	7	0.2%	3,500	81,757
Virginia	325,959	11,857	58.9%	20,131	61,758
Washington	436,603	9,739	38.6%	25,231	57,788
West Virginia	206,931	796	15.0%	5,307	25,645
Wisconsin	868,430	14,482	36.5%	39,677	45,688
Wyoming	40,793	251	3.5%	7,171	175,800
U. S. Total	14,777,569	245,076		1,128,749	
U. S. Average	289,756	4,805	20.7%	22,132	75,783

* Data Not Available

ACREAGE (INCLUDING FARM) PARCELS AS A PERCENTAGE OF TOTAL PARCELS , AND LEVEL OF CHANGE OVER TIME, BY STATE: 1956 AND 1981

1956 STATE	pct	1981 STATE	pct	CHANGE 1956 to 1981 RANK	PERCENT
1. North Dakota	60	North Dakota	56	+ 0	- 4
2. South Dakota	55	Iowa	48	+ 1	- 5
3. Iowa	53	South Dakota	45	- 1	-10
4. Arkansas	53	Arkansas	37	+ 0	-16
5. Idaho	51	Kansas	37	+ 5	- 1
6. Mississippi	47	Wisconsin	35	+ 2	- 7
7. Nebraska	43	Nebraska	32	+ 0	-11
8. Wisconsin	42	Montana	32	+ 1	- 8
9. Montana	40	Mississippi	29	- 3	-18
10. Kansas	38	Minnesota	27	+ 1	- 9
11. Minnesota	36	Idaho	26	- 6	-25
12. Missouri	35	Maine	26	+ 6	- 5
13. Tennessee	35	Oregon	24	+11	- 3
14. Vermont	34	Alabama	24	+ 6	- 7
15. Kentucky	33	Missouri	23	- 3	-12
16. South Carolina	32	Wyoming	21	+ 7	- 7
17. West Virginia	32	Washington	20	+ 8	- 5
18. Maine	31	West Virginia	19	- 1	-13
19. Oklahoma	31	Hawaii	18	*	*
20. Alabama	31	Kentucky	18	- 5	-15
21. North Carolina	29	Vermont	18	- 7	-16
22. Virginia	28	North Carolina	18	- 1	-11
23. Wyoming	28	Oklahoma	18	- 4	-13
24. Oregon	27	Utah	17	+ 2	- 7
25. Washington	25	Virginia	16	- 3	-12
26. Utah	24	Indiana	16	+ 6	- 5
27. Texas	24	South Carolina	16	-11	-16
28. New Mexico	23	Georgia	14	+ 1	- 9
29. Georgia	23	Texas	14	- 2	-10
30. New Hampshire	23	Illinois	14	+ 4	- 6
31. Colorado	22	Tennessee	14	-18	-21
32. Indiana	21	Louisiana	13	+ 1	- 8
33. Louisiana	21	New Hampshire	13	- 3	-10
34. Illinois	20	Ohio	12	+ 2	- 3
35. Michigan	17	Michigan	12	+ 0	- 5
36. Ohio	15	New Mexico	10	- 8	-13
37. Arizona	15	Delaware	8	+ 2	- 5
38. Florida	13	Florida	8	+ 0	- 5
39. Delaware	13	Colorado	8	- 8	-14
40. Nevada	13	Pennsylvania	7	+ 1	- 4
41. Pennsylvania	11	New York	7	+ 3	- 2
42. California	11	Massachusetts	6	+ 3	- 3
43. Maryland	10	Nevada	6	- 3	- 7
44. New York	9	Alaska	6	*	*
45. Massachusetts	9	Maryland	5	- 2	- 5
46. Connecticut	7	California	4	- 4	- 7
47. New Jersey	4	Connecticut	4	+ 1	- 3
48. Rhode Island	3	Rhode Island	3	+ 0	+ 0
49. D. C.	0	Arizona	2	-12	-13
50. Alaska	0	New Jersey	2	- 3	- 2
51. Hawaii	0	D. C.	0	- 2	+ 0

Source: 1957 and 1982 Censuses of Governments, Taxable Property Values and Assessment-Sales Price Ratios, U. S. Bureau of the Census, Washington, D. C.

* Alaska and Hawaii were not states in 1956.

ASSESSMENT ROLL COVERAGE, REAL PROPERTY PARCELS
SUBJECT TO GENERAL PROPERTY TAX, SELECTED STATES: 1979

State	No. Resp	Parcel Size or Dimensions		Gross Assessed Value: Land Component Shown Separately		Gross Assessed Value: Improvemt Component Shown Separately		Gross Assessed Value: Total Shown		Benefited Current Use		Age of Assessed Value		Estimated Market Value		Actual Use		Acreage Parcel Classification		Zoning Classification		Name of Owner		Address of Owner		Type of Ownership		Purchase Price		Date of Purchase	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%	No.	%	No.	%	No.	%	No.	%	No.	%
Arkansas	13	7	54	9	69	9	69	13	100	1	8	3	23	1	8	6	46	2	15	1	8	10	77	7	54	4	31	2	15	2	15
Idaho	18	10	56	18	100	18	100	18	100	12	67	8	44	16	89	14	78	13	72	3	17	17	94	17	94	7	39	1	6	1	6
Iowa	27	14	52	24	89	24	89	27	100	7	26	19	70	17	63	22	81	17	63	0	0	27	100	25	93	10	37	10	37	10	37
Kansas	15	11	73	14	93	14	93	15	100	7	47	9	60	5	33	14	93	10	67	4	27	12	80	10	67	5	33	4	27	8	53
Minnesota	25	18	72	18	72	18	72	25	100	23	92	16	64	24	96	23	92	20	80	3	12	23	92	20	80	9	36	12	48	12	48
Mississippi	8	7	88	7	88	7	88	8	100	3	38	1	13	3	38	3	38	1	13	0	0	8	100	4	50	3	38	0	0	0	0
Montana	16	6	38	10	63	10	63	14	88	10	63	2	13	5	31	9	56	11	69	0	0	15	94	16	100	5	31	0	0	0	0
Nebraska	17	15	88	15	88	15	88	17	100	9	53	14	82	8	47	13	76	9	53	3	18	17	100	11	65	6	35	3	18	5	29
North Dakota	17	10	59	13	76	13	76	15	88	8	47	5	29	14	82	12	71	8	47	0	0	14	82	10	59	4	24	0	0	2	12
South Dakota	16	14	88	15	94	15	94	16	100	8	50	9	56	9	56	12	75	11	69	3	19	16	100	10	63	10	63	8	50	8	50
Wisconsin	210	115	55	174	83	174	83	191	91	85	40	56	27	32	15	151	72	114	54	25	12	198	94	163	78	39	19	26	12	30	14
Eleven State Total	382	277	59	317	83	317	83	359	94	173	45	142	37	134	35	279	73	216	57	42	11	357	93	293	77	102	27	66	17	78	20

Source: Survey of Local Assessment Records (GP-1), 1982 Census of Governments, U.S. Bureau of the Census, Washington, DC (1980).

Note: Data presented above are for the 11 States which in 1981 and 1956 had the most acreage parcels. Numbers and percentages of total are based on those jurisdictions responding to the 1982 Forms GP-1.

Attachment E

Local Responsibility for Recording Function

tate No.	State Name	Level	Title of Official
01	Alabama	County	Judge of Probate
02	Alaska	Recording Districts	District Recorder
03	Arizona	County	County Recorder
04	Arkansas	County	County and Circuit Clerk
05	California	County (and San Francisco City) (Los Angeles County--Registrar-Recorder)	County Recorder
06	Colorado	County (and Denver City)	Clerk and Recorder
07	Connecticut	City or Town	City and/or Town Clerk
08	Delaware	County	Recorder of Deeds
09	Dist. of Columbia	D.C.	Recorder of Deeds
10	Florida	County (and Jacksonville City)	Clerk of Circuit Court
11	Georgia	County (and Columbus City)	Clerk of Superior Court
12	Hawaii	County (and Honolulu City)	Registrar of Conveyances
13	Idaho	County	Clerk-Auditor-Recorder
14	Illinois	County	Recorder of Deeds
15	Indiana	County (and Indianapolis City)	Recorder
16	Iowa	County (2 offices in Lee Co.)	Recorder
17	Kansas	County	Register of Deeds
18	Kentucky	County (and Lex.-Fay.Urban Co.Govt	County Clerk
19	Louisiana	Parish (and Baton Rouge City) (New Orleans City-Register of Conveyances)	Clerk of Court
20	Maine	County (2 dists.in Aroostook Co.)	Register of Deeds
21	Maryland	County (Baltimore City-Clerk of Superior Court)	Clerk of Circuit Court
22	Massachusetts	County (Boston City and 2 dists.in Berkshire Co. and Essex County)	Register of Deeds
23	Michigan	County	Register of Deeds
24	Minnesota	County	County Recorder
25	Mississippi	County	Clerk of Chancery Court
26	Missouri	County (and St. Louis City)	Recorder of Deeds
27	Montana	County (and Anaconda City and Butte City)	Clerk and Recorder
28	Nebraska	County	Register of Deeds
29	Nevada	County (and Carson City)	Recorder
30	New Hampshire	County	Register of Deeds
31	New Jersey	County	County Clerk
32	New Mexico	County	County Clerk
33	New York	County (and New York City-City Register)	County Clerk
34	North Carolina	County	Register of Deeds
35	North Dakota	County	Register of Deeds
36	Ohio	County	Recorder
37	Oklahoma	County	County Clerk
38	Oregon	County	County Clerk
39	Pennsylvania	County (and Philadelphia City-Recording Officer)	Recorder of Deeds
40	Rhode Island	City or Town	Clerk
41	South Carolina	County	Clerk of Court and/or Register of Mesne Conveyances
42	South Dakota	County	Register of Deeds
43	Tennessee	County (and Metro Nashville-Davidson)	Register of Deeds
44	Texas	County	County Clerk
45	Utah	County	Recorder
46	Vermont	City or Town	Clerk
47	Virginia	County or 1st Class City (Richmond in 2 districts)	Clerk of Circuit Court
48	Washington	County	County Auditor
49	West Virginia	County	County Clerk
50	Wisconsin	County	Register of Deeds
51	Wyoming	County	County Clerk

PROPERTY TRANSFER RECORD COVERAGE, REAL PROPERTY PARCELS
SUBJECT TO GENERAL PROPERTY TAX, SELECTED STATES: 1979

Attachment G

State	No. Resp	Cover-age	Parcel Number		Address of Seller		Address of Buyer		Size		Date of Recording		Date of Transfer		Type of Deed		Assessed Value		Sale Price		Actual Use		Zoning		Transfer Tax	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Arkansas	17	All	2	12	1	6	4	24	2	12	16	94	12	71	16	94	3	18	1	6	0	0	0	0	9	53
		Some	7	41	10	59	10	59	12	71	0	0	4	24	0	0	5	29	12	71	8	47	5	29	6	35
Idaho	18	All	7	39	4	22	12	67	3	17	17	95	11	61	16	89	1	6	0	0	0	0	1	6	1	6
		Some	4	22	10	56	5	28	12	67	0	0	4	22	1	6	4	22	7	39	5	28	3	17	4	22
Iowa	29	All	6	21	5	17	5	17	2	7	27	93	27	93	27	93	0	0	16	55	0	0	0	0	16	55
		Some	5	17	23	79	22	76	23	79	1	3	0	0	1	3	5	17	12	41	6	21	4	14	9	31
Kansas	21	All	11	52	4	19	5	24	7	33	19	90	20	95	20	95	2	10	10	48	10	48	1	5	4	19
		Some	2	10	11	52	10	48	11	52	0	0	0	0	1	5	3	14	5	24	5	24	1	5	1	5
Minnesota	23	All	3	13	1	4	16	70	4	17	23	100	23	100	23	100	0	0	4	17	1	4	0	0	21	91
		Some	6	26	11	48	7	30	15	65	0	0	0	0	0	0	9	39	10	43	6	26	7	30	2	9
Mississippi	15	All	7	47	2	13	2	13	4	27	15	100	14	93	14	93	3	20	0	0	0	0	0	0	0	0
		Some	2	13	10	67	9	60	10	67	0	0	0	0	1	7	5	33	9	60	7	47	6	40	4	27
Montana	17	All	1	6	7	41	10	59	2	12	17	100	13	76	17	100	1	6	1	6	1	6	0	0	0	0
		Some	3	18	9	53	6	35	14	82	0	0	3	18	0	0	1	6	4	24	4	24	1	6	0	0
Nebraska	24	All	3	13	7	29	6	25	6	25	21	88	21	88	22	88	2	8	6	25	3	13	0	0	20	83
		Some	7	29	4	17	5	21	11	46	2	8	2	8	0	0	4	17	15	63	4	17	3	13	4	17
North Dakota	16	All	4	25	3	19	9	56	3	19	16	100	15	94	15	94	0	0	0	0	0	0	0	0	1	6
		Some	6	38	11	69	7	44	9	56	0	0	1	6	1	6	3	19	12	75	5	31	2	13	1	6
South Dakota	15	All	1	6	4	27	6	40	0	0	13	87	14	93	14	93	0	0	0	0	0	0	0	0	12	80
		Some	6	40	11	73	9	60	13	87	0	0	0	0	0	0	4	27	11	73	6	40	4	27	2	13
Wisconsin	55	All	7	13	15	27	15	27	16	29	54	98	51	94	52	95	7	13	24	44	13	24	6	11	36	65
		Some	21	38	29	53	30	55	32	58	1	2	4	7	1	2	18	33	25	45	21	38	17	31	16	29
Total	250	All	52	21	53	21	90	36	49	20	238	95	221	88	236	94	19	8	62	25	28	11	8	3	120	48
		Some	69	28	139	56	120	48	162	65	4	2	18	7	6	2	61	24	122	49	77	31	53	21	49	20

Source: Survey of Real Property Transfer Records (GP-2), 1982 Census of Governments, U.S. Bureau of the Census, Washington, DC (1980).

Note: Data presented above are for the 11 States which in 1981 and 1956 had the most acreage parcels. Numbers and percentages of total are based on those jurisdictions responding to the 1982 Forms GP-2.

Attachment G