

Implementation of Perpetuation Programs for Government Corners

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SUBJECT

The subject of this paper is, "Implementation of Perpetuation Programs for Government Corners."

OBJECTIVES

The objectives are: (1) In the interest of broadening the restoration and maintenance of the Public Land Survey, (2) To collect, analyze and organize appropriate cost and performance data on functioning county perpetuation programs in Indiana, and (3) To make the above data available to engineers and land surveyors as an aid to other Indiana counties to implement their own program.

HISTORY

The section and quarter-section corners of the original Public Land Survey are the legal basis for all land ownership—public and private. The Public Land Survey was authorized and implemented by the United States Government on various occasions beginning in the early 1800's.

This survey continues in the state of Alaska under the jurisdiction of the Bureau of Land Management, Department of the Interior.

The original survey was completed for the home area of the writer (City of Anoka, Minnesota) in 1850.

The maintenance of the original Public Land Survey has been and continues to be the responsibility of the respective county governments.

New Indiana state law requires that each county will perpetuate a minimum of five percent of its section and quarter corners each year—the perpetuation program thereby being complete in 20 years or less.

Much has been written on survey technology and methods of restoring government corners. Also available are papers emphasizing the great need to perpetuate our priceless Public Land Survey (Reference 1).

Nothing is available that documents the cost and performance factors of ongoing, active perpetuation programs by county governments. Because government programs of all types and at all levels must be budgeted and funded, this report offers a beginning in the area of costs and performance to acquaint elected and administrative county officials with reliable basic budgeting material, through their professional engineers and land surveyors.

REFERENCES

1. Dr. Clair V. Mann, P.E., "How Shall We Preserve the Federal Public Survey Within Missouri," 1964
2. Public Survey Data Department, Data Collection Forms—Four Tables 1972
 - 1) Current County Status, Table I
 - 2) Annual County Expenditures, Table II
 - 3) Cost Per Corner, Table III
 - 4) County Resume, Table IV
3. Completed Data Collection Form for Anoka County, Minnesota, Roland W. Anderson, County Surveyor, 1972

PROCEDURE

Since 1959 a well-organized and functioning corner perpetuation program has been in operation in Anoka County, Minnesota. To date the county has 82.6 per cent of its original government corners located and remonumented. The need for this program was publicized to the public, sold to and funded by the Anoka County Board, and implemented by Roland W. Anderson, R.L.S., Anoka County surveyor.

The writer has drawn liberally from Anoka County surveyor office records—with the willing and generous cooperation of Mr. Anderson.

The Data Collection Forms were developed (Reference 2, Table I) and patterned closely to an annual form in use by Mr. Anderson and shows year-by-year performance of a corner perpetuation program.

Table II of Reference 2 was developed to show annual costs for corner perpetuation.

Table III was developed to summarize the cost and performance data to get the useful cost per corner figures annually.

Because each county is unique and singular, the urgency of the need for a perpetuation program and the ability to fulfill that need is an individual matter.

Table IV of Reference 2 "County Resume," was developed to identify factors concerning the distinctive features of a given county.

The data collection forms were sent to county surveyors in Indiana and Minnesota who have corner perpetuation programs. The confidential data was returned to us for analysis and organization. Tables I and II show the data used and related to a coded and confidential county identification number. Each county surveyor knows his own county identification number.

Regarding the county identification numbers, in Tables I and II, the third series of three digits is the preliminary county coefficient—this is an early attempt at identifying a county with a number (See Table II).

CONCLUSIONS

1. Forms for data collection can be and have been prepared that represent the cost and performance data for an ongoing corner perpetuation program within a county (references 2 and 3).
2. Adequate data has been collected from the counties of two states—Indiana and Minnesota (Tables I and II) to reliably prepare county budgetary data. From this data, we would limit consideration to counties with population averages between 41 and 351 per square mile.
3. The cost/corner of a perpetuation program for Indiana counties with population per square mile of 84 to 206 people should be between \$96 and \$237 and depending on particular county factors as: population growth, tax base and mill rate, condition of existing Public Land Survey, etc.
4. The cost per corner of an ongoing perpetuation program varied greatly from year to year (Reference 3) but generally increased due to: (1) the tendency of completing difficult corners late in the program, and (2) increasing labor and equipment costs.
5. From available data, Minnesota counties average lower cost per corner figures than Indiana. This is due to the earlier beginnings.
6. We note that a high preliminary county coefficient relates to a low average population density—and vice versa. (See Table II)
7. We note that the summary preliminary county coefficient for five counties in Indiana (.51) nearly resembles that for the six counties in Minnesota (.53). (See Table III)

Table I, Cost Per Corner—Original Government
Land Corner Perpetuation

County Identification Number	Program Years	Per cent of Corners Tied and Recorded	Total Expenditures Dollars	Increase Tied and Recorded Corners	Average Cost/Corner Dollars
INDIANA COUNTIES					
14-48-114-000	11	13.1	\$ 25,070	262	\$ 96
14-10-051-000	1	8.7	6,000	57	105
14-47-092-000	1	6.5	21,038	132	159
14-31-208-000	3	34.1	70,252	296	237
14-50-026-000	3	73.3	119,870	231	519
Totals—Above Counties			\$242,230	978	\$248
MINNESOTA COUNTIES					
23-69-174-000	7	30.9	\$257,980	4,784	\$54
23-71-165-000	13	35.1	30,945	456	68
23-19-034-000	12	44.5	79,574	966	82
23-55-075-000	11	36.8	74,271	779	95
23-27-006-000	10*	100.0	252,200	2,500	101
23-02-067-000	13	82.6	185,644	792	234
Totals—Above Counties			\$880,614	10,277	\$ 86

*1956-1965

Table II, Preliminary County Coefficient—Original
Government Land Corner Perpetuation

County Identification Number	1970 Population	Area Sq. Mi.	Population Average Per Sq. Mi.	Average Cost Per Corner	Preliminary* County Coefficient
INDIANA COUNTIES—90 TOTAL					
14-50-026-000	792,299	402	1,970	\$519	0.26
14-10-051-000	75,896	368	206	105	0.51
14-47-092-000	105,342	608	173	159	0.92
14-48-114-000	38,038	454	84	96	1.14
14-31-208-000	35,096	309	114	237	2.08
Totals—Above Counties	1,046,671	2,141	488		
MINNESOTA COUNTIES—87 TOTAL					
23-27-006-000	960,080	602	1,595	\$101	0.06
23-19-034-000	139,808	571	245	82	0.34
23-02-067-000	154,556	440	351	234	0.67
23-55-075-000	84,104	660	127	95	0.75
23-71-165-000	18,344	445	41	68	1.65
23-69-174-000	220,693	7,092	31	54	1.74
Totals—Above Counties	1,577,585	9,810	161		

*Average Cost/Corner—Dollars

Population Average/Sq. Mi.

Table III, Summary—Preliminary County Coefficient—
Original Government Land Corner Perpetuation

	1970 Population	Area Sq. Mi.	Population Average Per Sq. Mi.	Average Preliminary* Cost Per Corner	Preliminary* County Coefficient
Five Indiana Counties	1,046,671	2,141	488	\$248	.51
Whole State (Indiana)	5,193,669	36,291	143		
Six Minnesota Counties	1,577,585	9,810	161	86	.53
Whole State (Minnesota)	3,804,971	84,068	45		

*Average Cost/Corner—Dollars

Population Average/Sq. Mi.

RECOMMENDATIONS

1. Achieve a superior Indiana sampling by seeking current perpetuation program data for 10 to 15 additional counties.
2. Invite Indiana engineers and surveyors to use this data to plan and budget for a perpetuation program in their county. This would be initiated by completing and submitting Table IV, "County Resume," of the data collection forms and send to the Public Survey Data Department.
3. Seek an ISPLS* member who is and has been active in corner perpetuation, to assist the Public Survey Data Department in evaluating and presenting the confidential data.
4. Create a committee within the ISPLS to conceive and implement ways to broaden government corner perpetuation.

DISCUSSION

The need for the restoration and maintenance of the corners of the Public Land Survey is well understood by the surveying profession. This is a function of government and presently rests in the hands of the county board. The funds for the work is derived from taxes levied by the county board.

In Minnesota, a state statute provides for a one mill levy on real estate—not to exceed \$25,000. This doesn't appear to be a sufficient amount to implement a complete restoration program in most counties where the need is urgent. Other funds have been made available through the State Iron Resources Commission, State Department of Natural Resources, and state and county highway programs.

* Indiana Society of Professional Land Surveyors

The need for these corners is little appreciated by the general tax paying public and by some county officials—but is greatly appreciated by the owner of a part of a section who for one reason or another wants to sell a portion of his property. If he contacts a surveyor and finds that a survey of his property requires the restoration of several corners of the section, the survey costs may be prohibitive. In essence he must pay an expense which rightfully is the responsibility of the county.

The general public and county officials can be educated to appreciate the value and need of perpetuating the Public Land Survey at the local level. This education can best be considered by the surveying profession.

Already the state of Missouri has implemented a State Survey Authority to do what Missouri counties and the surveying profession could have probably accomplished—and at the local level of government.

Plans are being discussed among national leaders of the surveying profession to meet the need of corner perpetuation from the level of the federal governments.

In Minnesota, during the depression years of the 1930's, many programs of resurvey and monumentation were funded under the WPA. With the economy at the present time somewhat stagnant, it is possible that additional federal funds may become available for this type of work.

The success of county remonumentation in Minnesota can be credited to land surveyors and an aggressive State Land Surveyors Association. They realized it was necessary to press upon the public and their county boards the need for the government corners to be in place for the future orderly development of their counties; including the parks, highways, real estate development, and—last but not least—elimination of many costly lawsuits.

The state of Indiana has a good beginning in corner perpetuation, has a good organization of professional surveyors, and has good state legislation to encourage and compel county government compliance.

It would appear that every county in Indiana could have government corner restoration well over 50 percent complete before the decade of the '70's has passed.

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