Appraisal of certain lands on the north branch of the Flambeau River.

Landmark Research, Inc.
[s.l.]: [s.n.], [s.d.]

APPRAISAL OF CERTAIN LANDS ON THE NORTH BRANCH OF THE FLAMBEAU RIVER

Landmark Research Inc.

APPRAISAL OF CERTAIN LANDS
ON THE NORTH BRANCH
OF THE FLAMBEAU RIVER

1501 Monroe Street, Madison, Wisconsin 53711, 608-256-1090

Landmark Research Inc.

James A. Graaskamp, Ph.D., SREA, CRE
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Jean B. Davis, MS

October 30, 1981

Mr. R. L. Van Zandbergen
Director of Forest Management
Owens-Illinois Forest Products Division
Tomahawk, Wisconsin 54487

Dear Mr. Van Zandbergen:

With this letter we are transmitting to you an appraisal valuation as of October 16, 1981, of fair market values of lands now owned by your corporation.

The property comprises approximately 300 feet on either side of the northern branch of the Flambeau River located in Township 41 North and Range 2 East in Iron County and Township 41 North and Range 1 East in Ashland County along approximately 12 river miles or slightly over 9 miles on a southwest azimuth. The total acreage calculates to approximately 981 acres. The river flows generally south and west from a point below the Flambeau Flowage.

The valuation involves an analysis and appraisal of a corridor of scenic riverland. The valuation task seeks to construct a pricing model based on the sales of similar recent transactions which have taken place in the subjects area. Toward this end we reviewed recent transfers and initially selected approximately 72 of them for further screening. Incorporated in the final valuation scheme were two dozen sales which represented the most comparable transactions. These sales were then analyzed for physical, economic, and buyer characteristic information.

Given the collective nature of the subject tract having a variety of physical attributes and features, our primary concern was to develop an average price per unit of comparison with which to value the subject property. In a sense, the subject is atypical of the comparable sales in that it represents a corridor which would probably not be assembled by a single private party in a similar configuration. However, it does represent a controlling interest of the river with all its scenic and recreational attributes. Since the amount of river frontage and its control was found to be the primary motivating force for buyers of the comparable sales, these transactions represent the most usable information from which to infer value.

We understand from our previous conversations that the report need not conform to specific mandates of appraisal guidelines of the Department of Natural Resources or the Nature Conservancy group.

It is our opinion that the subject property, based on the analysis described and summarized in this report, would have an estimated Market Value, as of October 16, 1981, of:

ONE MILLION NINE HUNDRED SEVENTY FOUR THOUSAND DOLLARS

($1,974,000)

FOR LANDMARK RESEARCH, INC.

Tim Warner, MS, MAI, SREA

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APPENDIX B

LIST OF EXHIBITS

I. DEFINITION OF THE APPRAISAL ASSIGNMENT

A. Preliminary Discussion of the Property and Valuation Issues

The subject area represents a priority and scenic natural area, with primary association to the general public for canoeing due to its general lack of road access. The publication, Wisconsin's North Central Canoe Trails, page 5, describes the trip from the Turtle Dam to Park Falls as follows: "This trip on the upper Flambeau is fast, exciting and through some beautiful country."

The valuation is to establish a market value benchmark for sale or transfer by the Owens-Illinois Corporation to public or private hands for use and preservation of the property in its natural state. The valuation is as of October 16, 1981, and assumes only a view of economic circumstances as they appeared on that date.

The special problems of this property type that would generally affect the appraisal methodology relate to the concepts of highest and best use and market comparison. The parcel to be acquired is approximately a 600 foot wide corridor along the thread of the north branch of the Flambeau River. Essentially the valuation of the property would be done by comparison to the sales of other similar transactions. Yet "similar" transactions in terms of 981 acres that are 12 miles

long and 600 feet wide along two banks are very few. Another parcel or tract similar to this property in most of its physical characteristics and attributes, having legal constraints and natural limitations such as the flood plain which encompasses from 60 to 70 percent of the land, can preclude comparison in some senses. Yet, the acquisition of this corridor essentially conserves and preserves the river and controls its use, as would the purchase of tracts with greater depth from the river. Thus, if the best use of the tract is to control the river and its banks, it should be priced by inference from these factors.

A second problem relates to the basic premise of highest and best use, which is the keystone to the appraisal process. Highest and best use is an economic concept and often does not relate to the amenity value of the land. The measurement of naturalness or scenic beauty by inference from a relative grading scale of those attributes is a concept that has newly arisen, and which traditional appraisal theory does not address.

By way of note, a major involvement in this area of wilderness evaluation was undertaken by this firm and detailed in a document called the "Appraisal of Pack River Lands: Chelan County, Washington, January 1, 1981". This document addressed the practical application of data mapping, sales collection,

computerized data bases, survey research, and valuation of wilderness on the basis of comparing values paid for other wilderness and infering a value based on relative merits of the parcels.

B. Definition of Value

Valuation is in accord with a definition that presumes a willing buyer and seller, both fully knowledgeable who act as a prudent, economic man would.

Market Value is defined jointly by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers on page 160 of the Revised Edition of Real Estate Appraisal Terminology:

> The most probable price in terms of money which a property should bring in competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus.
>
> Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:
>
> 1. buyer and seller are typically motivated.
> 2. both parties are well informed or well advised, and each acting in what they consider their own best interest.
> 3. a reasonable time is allowed for exposure in the open market.
> 4. payment is made in cash or its equivalent.
> 5. financing, if any, is on terms generally available in the community at the specified date and typical for the property type in its locale.
> 6. the price represents a normal consideration for the property sold unaffected by special

financing amounts and/or terms, services, fees, costs, or credits incurred in the transaction.

Although the property is being appraised for the Owens-Illinois Corporation, as of October 16, 1981, subsequent assignments or transfers may be contemplated. We understand that the Department of Natural Resources contemplates final acquisition of the private rights to the parcel as defined. The property is valued as a fee simple estate in land, as no instructions were received to the contrary.

C. Highest and Best Use Concept

The central premise to fair market value is the determination of the highest and best use or most probable use which in the appraiser's opinion will serve to focus the selection of the market comparison sales or the economic logic of other approaches to value, if these latter are used. Historically, the concept of highest and best use focused only on wealth maximization for the owner of the land, regardless of the external costs imposed on society, other groups, or communities.

For a variety of reasons such as the rise of consumerism and environmentalism in the '60s and '70s, the official definitions of the professional appraisal societies for highest and best use have changed. Consider the basic definition and discussion from the fundamental real estate textbook, The

Appraisal of Real Estate (Seventh Edition):

> Highest and best use for land is the use that, at the time of appraisal, is the most profitable likely use. It is the use that will provide the greatest return to the land after the requirements of labor, capital, and coordination have been satisfied. Thus it may also be defined as the available use and program of future utilization that produces the highest present land value.
>
> The most profitable likely use cannot always be interpreted strictly in terms of money. Return sometimes takes the form of amenities. A wooded urban site, for example, may have its highest and best use as a public park; or the amenities of living in a private dwelling may represent to its owner satisfaction that outweighs a monetary net rental yield available from rental to a typical tenant. In this time of increasing concern over the environmental effects of land use, environmental acceptability is becoming an addition to the highest and best use concept.

This can be compared to a somewhat more detailed current definition of highest and best use that is found in the Revised Edition of the AIREA-SREA joint publication, Real Estate Appraisal Terminology Handbook:

> ...that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value.
>
> ...Implied within these definitions is recognition of the contribution of that specific use to community environment or to community development goals in addition to wealth maximization of individual property owners. Also implied is that the determination of highest and best use results from the appraiser's judgment and analytical skill, i.e., that the use determined from analysis represents an opinion, not a fact to be found.

Although there is a growing concern with the aesthetics of property, to date little evidence is found that property valued for its aesthetics, its naturalness, scenic attributes, or wilderness would be priced differently than property acquired principally for economic endeavors. Although a group of organizations like the Sierra Club, Friends of the Earth, or Nature Conservancy have arisen to acquire property for resale to a governmental entity, their principal pricing mechanism is based on what tracts are going for in the local markets. These organizations essentially acquire property to sell to government agencies who acquire based on fair market value appraisals. These appraisals rely upon sales of similar property within what is defined as the particular property's local market area. Although a separate tier of transactions have arisen based on acquisition for a property's naturalness, the underlying procedure for valuations remain the same. Until valuations are predicated on sales which reflect purchases for the quality and quantity of aesthetic attributes or by a method which is not primarly driven by transactions based on economic motivations, the existing valuation methodology will control.

The highest and best use of the property would be for control, use, and preservation of the scenic naturalness of this section of the north branch of the Flambeau River.

II. PROPERTY SITE ANALYSIS

A. Site Analysis

The subject property is located in Ashland and Iron Counties, Wisconsin, and comprises a corridor of property approximately 300 feet on either bank of the north branch of the Flambeau from south and west of a point below the Turtle Flambeau Dam in Township 41 North, Range 2 East thence south and west into Township 41 North, Range 1 East. Exhibit 3 describes in some detail the overall and specific property to be acquired. No specific legal description is given although Exhibit 4 provides a calculation of acres conveyed from the total holdings of Owens-Illinois by lot and township. The acres to be conveyed totals 980.98.

The subject area is a pristine environment with stream bank vegetation of predominantly hardwood and upland conifer. The wetlands provide habitat for muskrat and beaver as well as ducks and mergansers. The only public access to this portion of the Flambeau is provided by two access sites near the Price County line in Section 32.

The publication, Surface Water Resources of Iron County, reports that public access is limited to conditional public access from a road and boat landing area located approximately a half mile from the Flambeau Flowage and is available on

property owned by the Owens-Illinois Paper Company. Selected portions from these studies are reproduced as Exhibit 5.

It is difficult to classify the subject property in terms other than collective in nature. It represents a relatively untouched resource that can only be reflected in terms such as scenic, natural, or unspoiled to represent a compendium of this river environment. The subject is presumed to be well known to the intended readers of this report. To the uninitiated, the photographs of the subject property are provided in lieu of written description. The U.S. Geological Survey map also helps to serve both as a map locator for the comparable properties and the subject, but also as a summary of the terrain and vegetation cover. This map preceeds the sales analysis section. The common theme implied by the interest of the private and state groups and identified as the general perception of the area is that of the relatively unspoiled natural beauty of the River.

The subject also provides an economic draw in the sense of visitor or tourist trade to the general area and the towns of Park Falls and Butternut. Park Falls had a population of 2,953 in the 1970 census. The 1980 census shows the population to be relatively the same at 2,948.

The appraisal process prefers to compare the subject property in terms of specific, physically ascertainable

attributes to broadly similar properties which have sold through a class of buyers of generally similar motivation. It is therefore necessary to supply the physically ascertainable attributes of the subject property which may be significantly related for valuation under a pattern of best use. A combination of this data into relevant patterns or a formula permits the comparison of a subject property to similar comparable sales with their attributes or characteristics.

Towards this end, a physical resource search area was identified within the nearby county region of north central Wisconsin. Similar geologic, soil, water resource, and real estate market reaction to these physcial characteristics was the goal. Thus the pertinent submarket for the property was identified. As discussed previously, although it is possible to compare other properties in Wisconsin, the Midwest, and even farther afield which have been acquired for their scenic or natural attributes, the pricing mechanism of the buyers still predominantly relates to the properties' submarkets. Although argument can be made for relatively rating and ranking properties on their scenic or natural attributes and prices per characteristic score, it does not yet reflect the motivation of the majority of typical participants in this market.

Exhibit 6 is a reproduction of water and soil mappings of a general character for this area. As the exhibit shows no

specific soil mappings were available for the subject property or the comparable areas, as of the date of this valuation. The State of Wisconsin was overflown in 1978 for the purpose of providing this information, but time and budgetary constraints have delayed this process.

III. DETERMINATION OF HIGHEST AND BEST USE

A. Introduction

As discussed in more detail in Section I, the fundamental premise of an appraisal which structures and edits the valuation process is the determination of highest and best use for the property to be valued. While the final selection can never be made with definite exactness, it must represent the opinion of the appraiser, the best use must be legally, and technically possible, supported by effective demand, and financially profitable, as well as compatible with the general public goals and plans.

B. Legally Permissible Uses

The subject property lies within the forestry, conservancy, and recreational districts specified by the Ashland County Sanitation and Subdividing Zoning Ordinance. In Iron County the entire area around the Flambeau River area is zoned F-1 or a forestry district. Both these districts have as their goals a continuation of forest or recreational programs and related uses. These related uses would include recreational trails and production of forest crops and in some cases year round or seasonal homes with additional uses authorized by conditional permits.

However, approximately 60 to 75 percent of the subject area is located within the 100 year flood plain. This would generally preclude development of any kind and as such severely restrict the market potential for a property so encumbered. Properties that we used as comparable sales and the larger subset of properties that were first gathered before the winnowing to the final two dozen used were all affected to varying degrees by flood zoning and lost the potential of development within this area. However, the properties were valued as a whole by the purchaser and seller reflecting the degree of diminution attributable to this restrictive zoning. The subject property's location even with its narrow width provides control of the river and proximate bank area. Given the property's intended use, the existing flood districts and zoning overlays would not be restrictive to its intended end.

Given the subject's width and length, development potential would be marginal at best; however, this does not include use for recreational purposes. In fact, the property could be termed a "tenderloin cut" from a larger land group. It can be demonstrated that the subject property comprising approximately ten miles of river with a 600 foot width would have a market to private or public agencies who would purchase on the basis of what similar properties are going for as demonstrated by market transactions. Notwithstanding the fact that the property in

question may not have the same potential for development or investment appreciation that the comparable sales were purchased for, it possesses the ability to control the attributes of the River. This would be a primary factor affecting value. It will also be demonstrated that the principal characteristic affecting value is the ratio of river frontage to an acre.

We, as the appraisers, have determined highest and best use of the subject property as previously described to be for recreational purposes or preservation of its natural and scenic character. This use presumes the probable buyer or buyers are motivated to acquire this priority scenic property for its natural river attributes.

IV. VALUATION METHODOLOGY--MARKET COMPARISON APPROACH

A. Basic Methodology

The underlying concept of the market comparison approach is to search for properties which might have served or have the realizable potential of the same or similar uses as the subject property given the overlay of legal constraints on potential use or development, and that the use described for the subject property will have a market that will allow an underlying principle that buyers will tend to pay only as much as they would have to pay for reasonable substitutes. This is a presumption about behavior often referred to in appraisal textbooks as the principle of substitution. There are three major conditions for executing this otherwise plausible task of search, selection, comparison, and valuation:

1. There is an orderly market for parcels and property with development potential and/or scenic attributes that have produced transactions at arms length without recourse to eminent domain.
2. There is adequate information to predict a sales price for the subject property from the market transactions given an exercise by the appraiser of judgment and application of reasonable adjustments for differences.

3. There is a common denominator for valuation or the comparison of sales referred to in Condition 2 above that will overcome differences or suitability for the use presumed.

This section of the appraisal details the procedures, properties, and final valuation benchmarks to help for valuation of the subject property.

B. Background to the Sales Gathering and Analysis Procedure

There are several major private submarkets where each purchase represents both the individual and collective effective demand for this property. In the subject's case it could be the sale for development potential, investment, recreation, or paper and lumbering. A major new submarket that has evolved relatively recently is the investment consortiums, groups of buyers or syndications, corporations, or local and national groups who buy natural or scenic lands to conserve them. Each of these submarkets generally work within a larger market.

As discussed previously, groups such as the Sierra Club represent customers in the market for properties such as the subject. The basic premise underlying their involvement is often that they will be taken out of the transaction by an end purchaser such as a state or federal agency. This state or

federal agency will buy at market value based on transactions of similar properties within the market area. There has to date been no development of a distinct tier in the market that prices property based only on the quality of its natural or scenic attributes. The buyer must then compete in the local market and pay at least what other participants are paying in the local market. No premium has yet been discerned as being paid for particular scenic attributes that is not reflected in the local market.

Often properties acquired by interim groups through some combination of trade, gift, and cash must be purchased at a price that will withstand the scrutiny of the Internal Revenue Service if any part of that price is to qualify for a charitable donation on the part of the seller. Conservancy groups profit on the margin between what they pay to acquire the property and what they receive for selling the property, as adjusted for the other costs of funds. While it is possible that the governmental agency can possibly acquire a property from such a group at somewhat less than market or appraised value, the bargain that it usually obtained would be in the form of avoiding the costs of acquisition involved with many property owners, eminent domain action, and inflationary increases in market prices during the sustained delays found in government procedures between approval and funding

acquisitions. Indeed, the large caseload arising from eminent domain coupled with the sharply rising real estate prices and administrative expenses make it particularly desirable to expedite acquisitions. Accordingly, a property will be valued based on recent transactions within the subject's market area as this replicates most closely the price that the property would obtain in this or other marketplaces.

C. Data Gathering Procedures and Techniques

A general search for sales transactions was conducted in both the Wisconsin Department of Revenue Regional Office in Eau Claire and in the Ashland, Rusk, Sawyer, and Price County courthouses. Approximately 72 comparable sales were gathered from this procedure. These sales were scanned for physical characteristics and attributes, as well as economic or other considerations which would preclude consideration. Ultimately this list of transactions was culled to 24 sales. Reasons for discarding the sales ranged from determination that sales were not arm's length or were in fulfillment of a much dated land contract, to a sale of small or developed tracts of land which were deemed not truly comparable.

In order to verify the sale, confirm or discover information, and investigate the motivations of the parties to the transaction, a questionnaire was developed to standardize

and record responses. This questionnaire is displayed in Exhibit 7.

A basic identification and characteristic description follows for the sales.

Once the sales were selected and editorially screened, a method to value the subject from the properties is necessary. Although there are two basic procedures which can be utilized for pricing the property, it soon becomes apparent that the property must be priced on some sort of unit of comparison such as price per square foot or acre or price per front foot of river frontage. An attempt to price a parcel as large as the subject property from sales which represent much smaller tracts will upon analysis reveal the declining price per unit. The subject property or indeed any large parcel of property priced by comparison methods will show an average price per acre or front foot below the range demonstrated by the comparable sales. It is our assumption and premise that the property in question should receive a value for the unit of comparison deemed appropriate within the range demonstrated by the sale of other properties in the area.

It was mentioned previously that there are essentially two methods of comparing comparable sales and inferring a value. The first of these is a rather classical and nonspecific method most generally employed in a number of appraisal assignments.

This method embodies special subjective adjustments for each comparable sale, the formation of a pattern of sales price per unit of comparison, and a selection from the resulting value range based on the appraiser's skill and judgment. This procedure relies greatly on the appraiser's skill, knowledge, and general experience which is indeed difficult to quantify.

Our approach, on the other hand, was to quantify the characteristics or attributes of the comparable sales and search for a formula or demonstrable procedure to infer the value of the property based on an aggregate and specifiable means of analysis.

This procedure can be described as follows. First, as shown in Exhibit 8, the characteristics of key physical or economic features of the comparable sales were coded. This exhibit shows the identification and coding for characteristics such as date of sales, the location on the various rivers searched, access, and type of access, location, distance to town, buyer motivation, type of documentation, vegetative cover, size, purchase price, and front footage.

From this catalog of comparable sales the procedure then progresses to a method by which a formula is selected to infer the value of the subject property based on a quantifiable demonstrable, and repeatable, procedure. This is represented in Exhibit 9 which embodies a computer resource to perform the

mathematical computations necessary for this procedure. Exhibit 9 shows the method that performs the following two functions: 1) searches for the best characteristic to predict value given all the possible characteristics of the subject property that could be predicted from, and 2) calculates an equation based on the assumption that the relationship between the characteristics selected and the unit of valuation is a straight line.

Exhibit 9 shows that the program looked at the 15 variables previously specified plus some re-expressions or transformations of these variables based on certain characteristics such as size divided by frontage on the river. As can be seen, it showed that the best predictive variable selected from all the possible combinations or subsets of these variables to predict value, based on certain statistical measures, was the number of front feet per acre. This was selected by taking various sets of variables one at a time, two at a time, three at a time, etc., through seven at a time, and sifting through the various combinations of all the possible groupings to determine which subset or variable served as the best predictor of value. The best subset or variable is selected based on the fit of predicted prices with the pricesthat actually occurred for the previously referenced comparable sales.

After determining the characteristics that are the best estimators of value and the formula that best predicts value based on the analysis of the sales, the property was valued on a price per acre basis. Because price paid per acre falls as size of the tract increases, it was felt that it was most equitable to value the subject property on a unit basis. Price per acre was felt to be the most logical unit of comparison and valuation. Our analysis has determined that the price per acre can best be estimated from the number of front feet of river per acre. Eighty-six percent of the variance in price per acre can be accounted for by front footage per acre based on the analysis of the twenty-four comparable sales.

As Exhibit 9 demonstrates, value per acre for the subject property can be determined by taking 17.3179 times the number of front feet per acre of the subject property and then subtracting $187.97 from that value. Again, this formula was specified by finding the best overall predictor based on all the comparable sales utilized above. The subject property has 124,598 front feet of bank on both sides of the river based on traverse measurement. When divided by its 980.98 acres, this indicates a front foot per acre of 127.01. Taking the 127.01 front feet per acre and substituting it into the above formula, a value per acre of approximately $2,012 was developed. When this inferred value per acre is multiplied by the 980.98 acres

that comprise the subject property, a total value of $1,973,732, which can be rounded to $1,974,000, is produced.

This value, it should be noted, presumes that the subject property would command a price on the market at the same price or unit per acre as other properties have demonstrated even though the subset has substantially more acres than any of the other transactions reviewed. Essentially, this price per acre would represent an average of all sales demonstrated by the comparables and would assume that the subject property would attain this same average price per acre based on the established relationship between price per acre and front feet per acre assuming a straight relationship between the two.

V. SUMMARY

The subject property has been valued from comparison of approximately two dozen recent sales which constitute in the appraiser's opinion a representative and typical sampling of recent current transactions in the marketplace. The sales were analyzed and attributes and characteristics of the properties described and cataloged.

Based on these comparable sales, a method was used to determine which characteristic or characteristics could be shown to be the best estimator of price paid per acre. Valuation was done on a unit of comparison, price per acre, to preclude undervaluation based on decreasing size-price relationships.

The analysis of the comparable sales showed that the best predictor of price, for the subject property would be front feet per acre. Concurrently, a formula to estimate price per acre was derived from the analysis of the transactions. A price of $2,012 per acre was estimated for the subject property, which for the property's 980.98, equates to a total value of $1,974,000. This value assumes that the subject property should be entitled to the same price per acre based on the extension of the straight-line relationship between price per acre and the number of front feet per acre, despite the larger size of

the subject in acres compared to the other comparable sales. This appears a justifiable assumption in the light of the valuation problem.

This value represents a price that the property would produce given an analysis of all the characteristics deemed relevant in this analysis. The subject's high ratio of front feet to size produces a high price per acre when the subject is compared to the average acreage price paid for the comparable sales. This price, however, appears warranted in that the subject property is indeed a "tenderloin cut" of the total property holdings possessing the scenic and natural river attributes with a high ratio of frontage to size--valuation based on the ratio of front feet per acre can be demonstrated to be the singular most important attribute associated with price paid in the comparable transactions. It is our estimate based on the facts and assumptions reported in this valuation analysis that the subject property as of October 16, 1981, would have a Market Value of:

ONE MILLION NINE HUNDRED SEVENTY FOUR THOUSAND DOLLARS

($1,974,000)

LIMITING CONDITIONS

The certification of the appraiser and/or author appearing in this report is subject to the following conditions as set forth in the report.

1. The legal description furnished is assumed to be correct. No responsibility for matters legal in character is assumed nor is any opinion of title rendered. Title is assumed merchantable. The property is appraised as though under responsible ownership.

2. The author will not be required to give testimony or to appear in court by reason of this report, with reference to the property in question, unless timely arrangements have been previously made therefore, at prevailing per diem rates.

3. The author assumes that there are no hidden or unapparent conditions of the property, subsoil which would render it more or less valuable. The author assumes no responsibility for such conditions or for the engineering which might be required to discover such factors.

4. Information, estimates and opinions furnished to us and contained in this report were obtained from sources considered reliable and believed to be true and correct. However, no responsibility for accuracy of such items is assumed.

5. Protection of the client's interest regarding the report and its contents is governed by the by-laws and regulations of the professional appraisal organization with which we are affiliated.

CERTIFICATE OF APPRAISAL

The undersigned do hereby certify that except as otherwise noted in this report:

We have no present or contemplated future interest in the real estate that is the subject of this report.

We have no personal interest or bias with respect to the subject matter of this report or the parties involved.

Neither our employment to make this report nor our compensation for it is contingent upon the value or findings reported.

To the best of our knowledge and belief the statements of fact contained in this report, upon which the analyses, opinions, and conclusions expressed herein are based, are true and correct.

This report sets forth all of the limiting conditions, imposed by the terms of our assignment or by the undersigned, affecting the analyses, opinions and conclusions contained in this report.

This report has been made in conformity with and is subject to the requirements of the Codes of Professional Ethics and Standards of Professional Practice of the American Institute of Real Estate Appraisers and of the Society of Real Estate Appraisers.

No one other than the undersigned prepared the analyses, opinions, and conclusions concerning real estate that are set forth in this report.

The American Institute of Real Estate Appraisers conducts a voluntary program of continuing education for its designated members. MAIs and RMs who meet the minimum standards of this program are awarded periodic educational certification. I am certified under this program through December 31, 1983.

The valuation for the north branch of the Flambeau River as of October 16, 1981, as described herein is:

ONE MILLION NINE HUNDRED SEVENTY FOUR THOUSAND DOLLARS

($1,974,000)

Tim Warner, MS, MAI, SREA

T I M W A R N E R

PROFESSIONAL DESIGNATIONS

MAI, Member, American Institute of Real Estate Appraisers, Certificate Number 5645

SREA, Senior Real Estate Analyst, Society of Real Estate Appraisers

EDUCATION

Master of Science - Real Estate Appraisal and Investment Analysis - University of Wisconsin

Bachelor of Arts - Marquette University - Milwaukee, Wisconsin

PROFESSIONAL EDUCATION

Society of Real Estate Appraisers

Appraising Real Property	Course 101
Appraising Income Producing Property	Course 201
Special Applications of Appraisal Analysis	Course 301
Instructor's Clinic	1975

American Institute of Real Estate Appraisers

Real Estate Appraisal I	Principles
Real Estate Appraisal II	Urban Properties
Real Estate Appraisal VI	Investment Analysis
Real Estate Appraisal VII	Industrial Properties
Real Estate Appraisal VIII	Residential Properties

Contemporary Real Estate Appraisal, University of Wisconsin, 1977

PROFESSIONAL EXPERIENCE

Mr. Warner is currently associated with Landmark Research, Inc. Previously, he was associated with The Appraisal Company of Houston, Texas, and was the Manager of Appraisal Operations for Mortgage Guaranty Insurance Corporation. His experience includes appraisal, consulting, and market and financial analysis of proposed and existing projects; reuse and conversion studies; lease analysis and structuring; analysis of equity positions for financial institutions; analysis of proposed multiple land use developments for developers, investors, and financial institutions.

J A M E S A. G R A A S K A M P

PROFESSIONAL DESIGNATIONS

SREA, Senior Real Estate Analyst, Society of Real Estate Appraisers

CRE, Counselor of Real Estate, American Society of Real Estate Counselors

CPCU, Certified Property Casualty Underwriter, College of Property Underwriters

EDUCATION

Ph.D., Urban Land Economics and Risk Management - University of Wisconsin
Master of Business Administration Security Analysis - Marquette University
Bachelor of Arts - Rollins College

ACADEMIC HONORS

Chairman, Department of Real Estate and Urban Land Economics, School of Business, University of Wisconsin
Urban Land Institute Research Fellow
University of Wisconsin Fellow, Omicron Delta Kappa
Lambda Alpha - Ely Chapter
Beta Gamma Sigma, William Kiekhofer Teaching Award (1966)

PROFESSIONAL EXPERIENCE

Dr. Graaskamp is the President and founder of Landmark Research, Inc., which was established in 1968. He is also co-founder of a general contracting firm, a land development company and a farm investment corporation. He is formerly a member of the Board of Directors and treasurer of the Wisconsin Housing Finance Agency. He is currently a member of the Board and Executive Committee of First Asset Realty Advisors, a subsidiary of First Bank Minneapolis. He is the co-designer and instructor of the EDUCARE teaching program for computer applications in the real estate industry. His work includes substantial and varied consulting and valuation assignments to include investment counseling to insurance companies and banks, court testimony as expert witness and the market/financial analysis of various projects, both nationally and locally, and for private and corporate investors and municipalities.

J E A N B. D A V I S

EDUCATION

Master of Science - Real Estate Appraisal and Investment Analysis, University of Wisconsin

Master of Arts - Elementary Education, Stanford University

Bachelor of Arts - Stanford University (with distinctions)

Additional graduate and undergraduate work at Columbia Teachers College and the University of Wisconsin

PROFESSIONAL EDUCATION

Society of Real Estate Appraisers

Appraising Real Property	Course 101
Principles of Income Property Appraising	Course 201

American Institute of Real Estate Appraisers

Residential Valuation (formerly Course VIII)

Certified as Assessor I, Department of Revenue, State of Wisconsin

PROFESSIONAL EXPERIENCE

With a significant background in education, practiced in California, Hawaii and Wisconsin, Ms. Davis is currently associated with Landmark Research, Inc. Her experience includes the appraisal and analysis of commercial and residential properties, significant involvement in municipal assessment practices, and market and survey research to determine demand potentials.

Y V O N N E M. S C H E L L

EDUCATION

Currently enrolled in the University of Wisconsin Graduate School majoring in Real Estate Appraisal and Investment Analysis

Bachelor of Science - Real Estate and Finance, Colorado State University

PROFESSIONAL AFFILIATION

Colorado Real Estate Broker

PROFESSIONAL EXPERIENCE

Ms. Schell is currently associated with Landmark Research, Inc. Her experience previously includes involvement as a National Bank Trust Examiner and Commercial Examiner with the Comptroller of the Currency and subsequently as a real estate analyst and broker in Colorado with additional appraisal experience in several other states. Her experience includes the appraisal and analysis of commercial and residential income properties, also feasibility and development potential studies including market and financial analysis.

M A R T H A G. H E I S E L

EDUCATION

Bachelor of Business Administration - Real Estate and Urban Land Economics major, University of Wisconsin - Madison, Graduated with Honors

ACADEMIC HONORS

President and member of Crucible, a UW - Madison junior women's honorary organization, 1972-3

Beta Gamma Sigma, National honorary business society

Phi Kappa Phi, National honorary society

PROFESSIONAL EDUCATION

Society of Real Estate Appraisers

Appraising Real Property Course 101

Marketing Real Estate by Mortgage Equity Analysis: Course I, University of Wisconsin - Extension

Wisconsin Realtors Association

Wisconsin Realtors Institute, Courses I, II, and III
Awarded GRI "Graduate, Realtors Institute"

PROFESSIONAL EXPERIENCE

Mrs. Heisel is currently associated with Landmark Research, Inc. Previously, she was associated with Risberg Land Company and Risberg Recreational Real Estate, Inc., a recreational real estate brokerage firm, in Hayward, Wisconsin. Prior to that she was employed as a management trainee and then head of the Investment Services department at The First Trust Company of Saint Paul, in Saint Paul, Minnesota.

APPENDIX A

COMPARABLE SALES

COMPARABLE SALES INFORMATION

No. A1

Buyer: Geenen

Seller: McLean

Description: Short Legal: E1/2SE1/4 and Govt. Lots 1,2, and 3 in Sec. 23, T42N, R2W.

County: Ashland

River: E. Fork Chippewa

Date of Sale: April 11, 1978

Type of Document: Warranty Deed

Size in Acres: 199

River Frontage: 5,900 feet

Total Price: $25,000

Price per Acre: $125.63

Price per Front Foot: $4.24

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: Varies

Topography: Gently sloping

Percentage of Marsh or Lowland: 33 percent

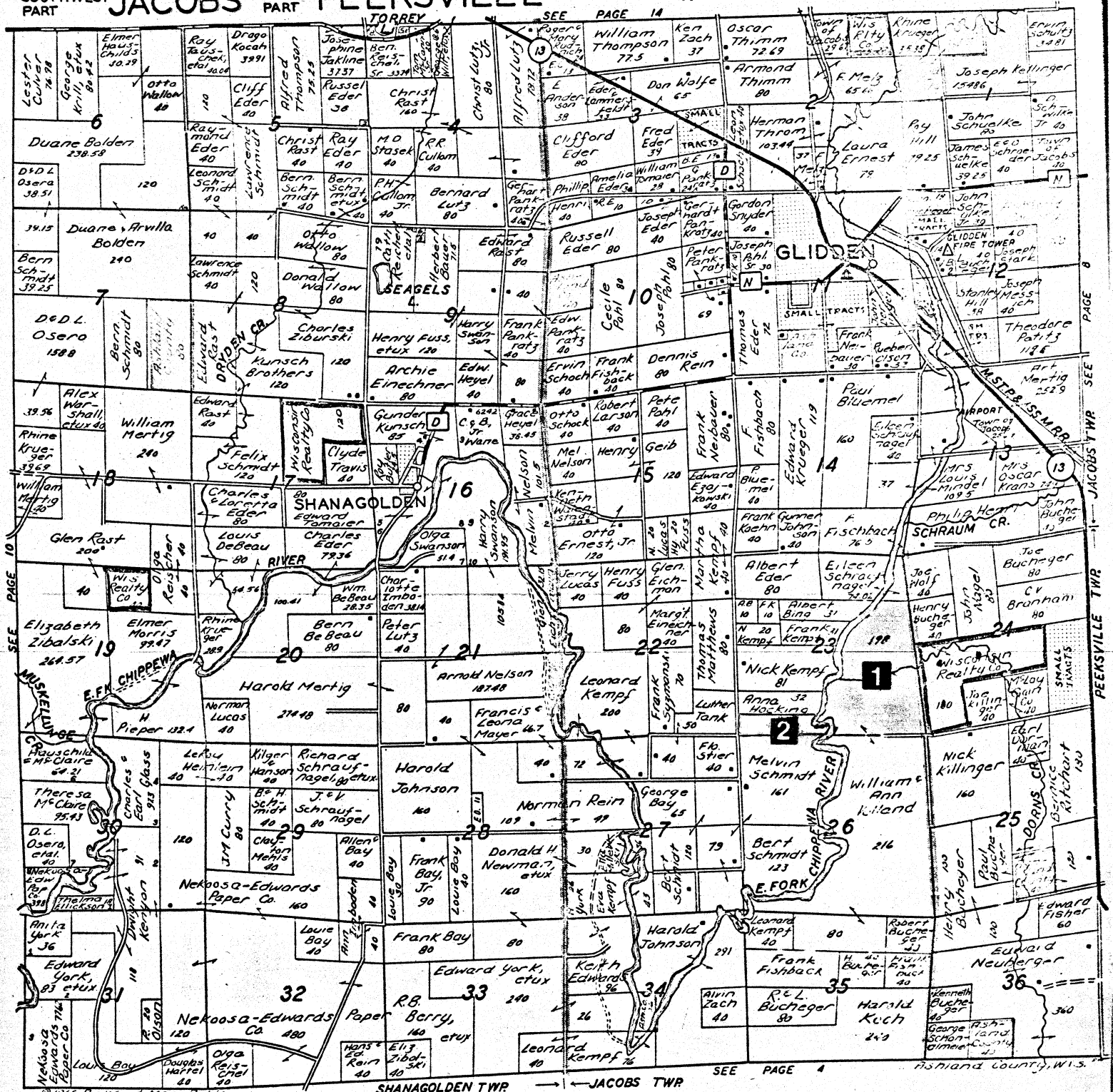
Vegetation: Dense

Distance to Closest Town: 3 miles to Glidden

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

WEST PART SHANAGOLDEN. ASHLAND Co T. 42 N. – R. 2 W.
SOUTHWEST PART JACOBS WEST PART PEEKSVILLE

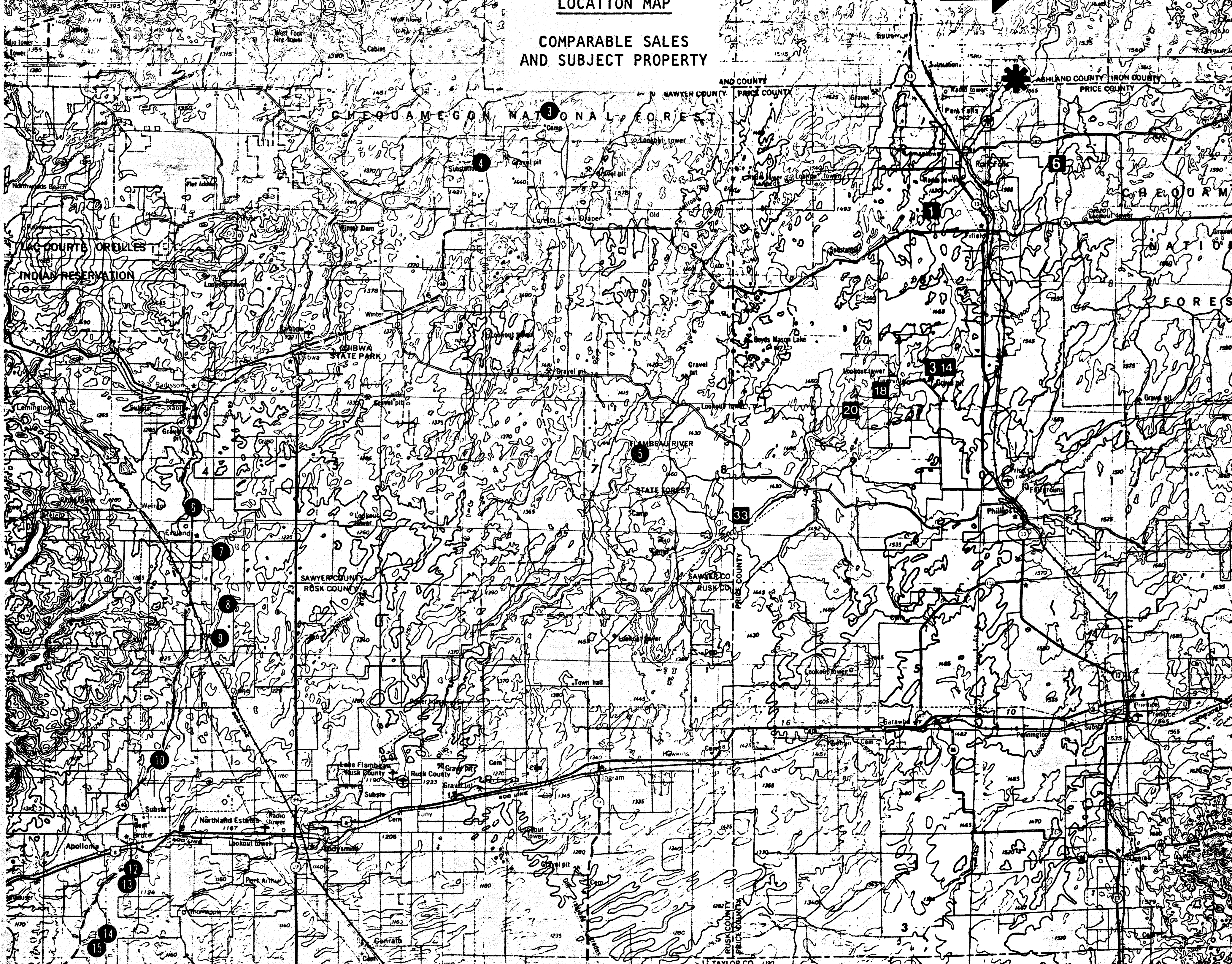


COMPARABLE A1

Comparable in Foreground

LOCATION MAP

COMPARABLE SALES AND SUBJECT PROPERTY



COMPARABLE SALES INFORMATION

No. A2

Buyer: Schmidt

Seller: Narret

Description: Short Legal: S1/2 of Govt. Lot 8 in Sec. 23, T42N, R2W.

County: Ashland

River: E. Fork Chippewa

Date of Sale: April 30, 1981

Type of Document: Land Contract

Size in Acres: 37

River Frontage: 1,800 feet

Total Price: $9,500

Price per Acre: $256.76

Price per Front Foot: $5.28

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: Varies

Topography: Steep hill in middle of property

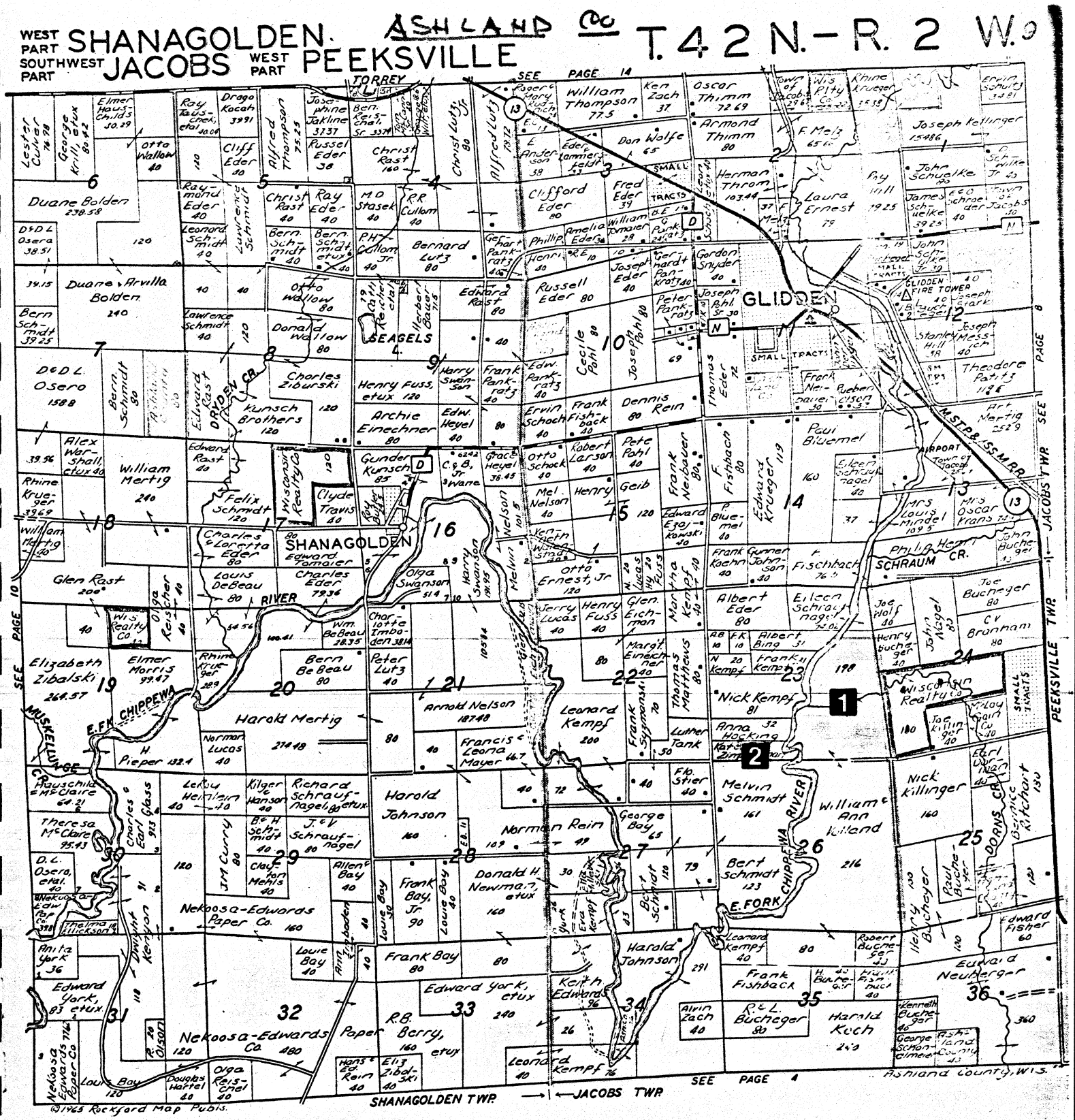
Percentage of Marsh or Lowland: 25 percent

Vegetation: Dense

Distance to Closest Town: 3 miles to Glidden

Buyer Profile: Business/Recreation

Factors Influencing Purchase Decision: Purchased to log and build a seasonal cabin.


WEST PART SHANAGOLDEN
SOUTHWEST PART JACOBS
WEST PART PEEKSVILLE
ASHLAND CO
T. 42 N. – R. 2 W.
SEE PAGE 14
SEE PAGE 8
SEE PAGE 10
SEE PAGE 4
TORREY
GLIDDEN
SEAGELS
SHANAGOLDEN
SCHRAUM CR.
DRIDEN CR.
RIVER
E.FK CHIPPEWA
MUSKELLUNGE CR.
DORNS CR.
M.ST.P.& S.S.M.R.R.
GLIDDEN FIRE TOWER
AIRPORT
SHANAGOLDEN TWP.
JACOBS TWP.
PEEKSVILLE TWP.
Ashland County, Wis.
©1963 Rockford Map Publs.

COMPARABLE A2

Comparable in Foreground

COMPARABLE SALES INFORMATION

No. P1

Buyer: Bushman, Young, and Gabrielsen

Seller: Franke

Description: Short Legal: Part of Govt. Lot 7 and Govt. Lot 8 in Sec. 34, T40N, R1W.

County: Price

River: N. Fork Flambeau

Date of Sale: March 19, 1980

Type of Document: Warranty Deed

Size in Acres: 34

River Frontage: 2,000 feet

Total Price: $22,000

Price per Acre: $647.06

Price per Front Foot: $11.00

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: .5 miles

Average Elevation: Varies

Topography: Relatively flat

Percentage of Marsh or Lowland: 40 percent

Vegetation: Sparse

Distance to Closest Town: 3.5 miles to Park Falls

Buyer Profile: Investor/Business

Factors Influencing Purchase Decision: Purchased for resale as lots.


NORTH CENTRAL PART LAKE
WEST PART EISENSTEIN
T.40N.-R.1W.
CENTRAL PART EISENS
ASHLAND COUNTY LINE
BUTTERNUT
SCHNUR L.
PARK FALLS
FLAMBEAU RIVER
BUCKMAN L.
COOLEY L.
GARDNER L.
Owens-Illinois, Inc.
Price County Wis.
1972 Rockford Map Pub
FIFIELD
SOUTHEAST PART LAKE
NORTHEAST PART FLAMBEAU
T. 39 N.-R.1 W.
SEE PAGE 33
FIFIELD
PINKERTON CR.
PATTERSON CR.

COMPARABLE P1

Looking East, Comparable in Center on Right (South) Side of River

Looking Northeast, Comparable in Left Center of Photo
Below (South of) River

COMPARABLE SALES INFORMATION

No. P3

Buyer: Culbertson

Seller: Wesley

Description: Short Legal: Lot 8 in Sec. 10, T38N, R1W

County: Price

River: S. Fork Flambeau

Date of Sale: August 31, 1981 (Warranty Deed)
October 27, 1976 (Land Contract)

Type of Document: Land Contract satisfied by Warranty Deed

Size in Acres: 58

River Frontage: 1,200 feet

Total Price: $17,000

Price per Acre: $293.10

Price per Front Foot: $14.17

Road Access: Yes

Distance to Light Duty Road: NA

Distance to Secondary Road: 2.5 miles

Average Elevation: Varies

Topography: Rock ledges along river

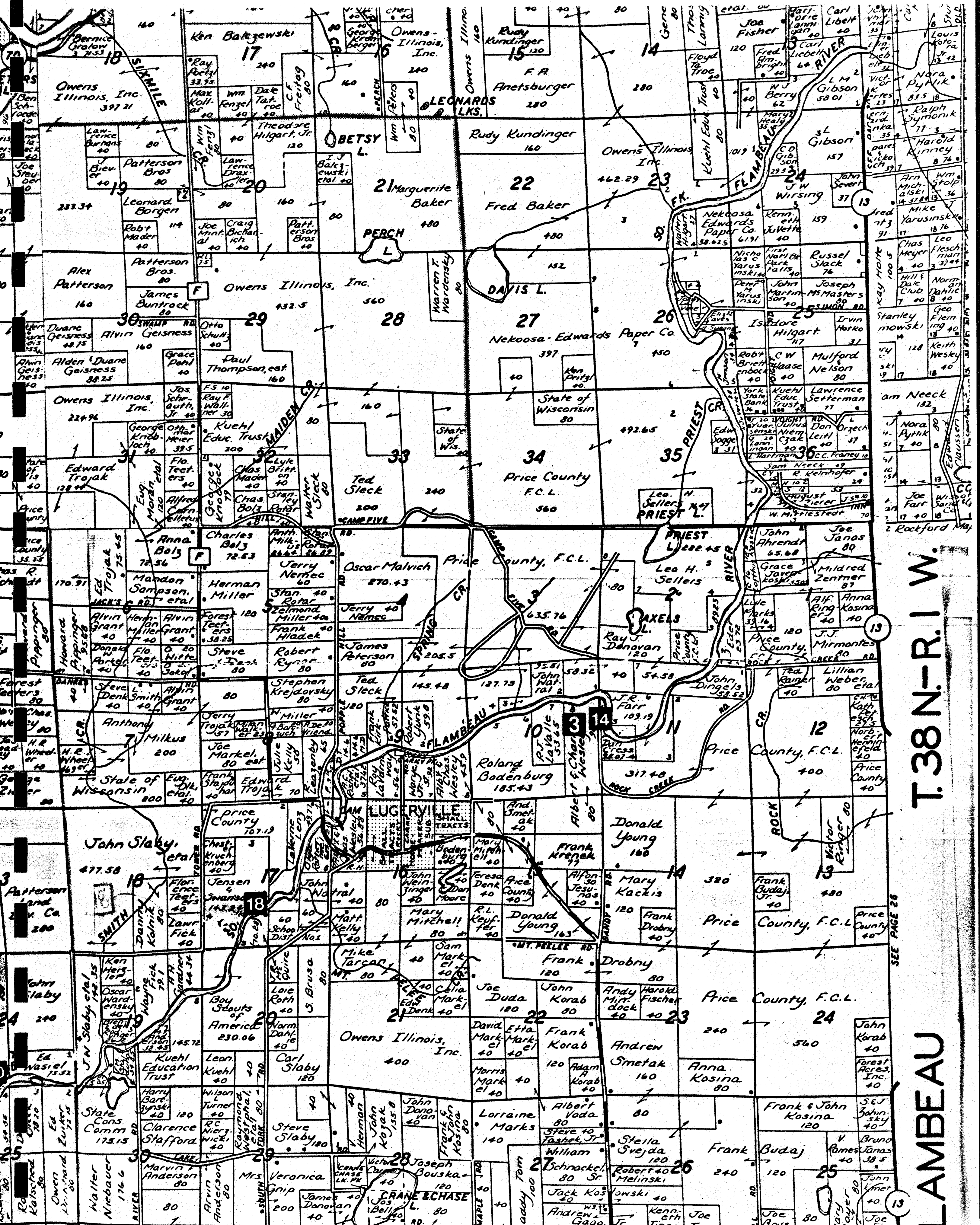
Percentage of Marsh or Lowland: 35 percent

Vegetation: Dense

Distance to Closest Town: 11 miles to Phillips

Buyer Profile: Recreation

Factors Influencing Purchase Decision: Purchased for recreational purposes.



T.38N.-R.I W.
FLAMBEAU
SEE PAGE 26
Owens Illinois, Inc. 397.21
SIXMILE
Ken Balczewski
Rudy Kundinger
F.A. Anetsburger 280
LEONARDS LKS.
BETSY L.
Theodore Hilgart, Jr. 120
Rudy Kundinger 160
Owens Illinois Inc. 462.29
Patterson Bros 80
Leonard Borgen
Marguerite Baker
Fred Baker
PERCH L.
DAVIS L.
Nekoosa Edwards Paper Co. 6191
FLAMBEAU RIVER
SO. FK.
J.W. Wirsing
L.M. Gibson 58.01
L Gibson 157
Alex Patterson 160
James Buntrock 80
Owens Illinois, Inc. 432.5
Warren T. Wardensky
Nekoosa-Edwards Paper Co. 397
Isadore Hilgart 117
Duane Geisness 48.75
Alvin Geisness 160
Alden & Duane Geisness 88.25
Paul Thompson, est. 160
Owens Illinois, Inc. 224.96
Kuehl Educ. Trust 200
MAIDEN CR.
State of Wisconsin 80
Ted Sleck 200
Price County F.C.L. 560
PRIEST CR.
PRIEST L.
Leo H. Sellers
Edward Trojak 128.44
CAMP FIVE RD.
Charles Bolz 72.53
Anna Bolz 72.56
Oscar Malvich 270.43
Price County, F.C.L.
Leo H. Sellers
AXELS L.
Herman Miller
Mandon Sampson, etal
Ray J. Donovan 120
SPRING CR.
FLAMBEAU
John Dingels 58.52
J.R. Farr 109.19
Anthony Milkus 200
Roland Bodenburg 185.43
State of Wisconsin 200
Price County, F.C.L. 400
ROCK CREEK
LUGERVILLE
SMALL TRACTS
price County 107.19
John Slaby, etal 477.58
Patterson Land & Inv. Co. 280
Donald Young 160
Frank Krenek 77
Mary Kackis 320
Price County, F.C.L.
Victor Ringer 80
MT. PEELEE RD.
Frank Drobny 120
Boy Scouts of America 230.06
Owens Illinois, Inc. 400
Joe Duda 120
John Korab 80
Andrew Smetak 160
Anna Kosina 80
Price County, F.C.L.
John Korab 80
Kuehl Education Trust
Carl Slaby 120
State Cons. Comm 175.15
Clarence Stafford
Steve Slaby 120
Lorraine Marks 140
Albert Voda 80
Stella Svejda 120
Frank & John Kosina 120
Frank Budaj 240
Marvin Anderson 80
Mrs. Veronica Gnip 200
Joseph Bouska 120
CRANE & CHASE L.
William Schnackel 80 Sr.
Robert Melinski
Walter Niebauer 176.6

COMPARABLE P3

Looking North, Comparable P3 on West Side of Road
and Comparable P14 on East Side of Road

Looking East, Comparable P3 in Lower Center
and Comparable P14 in Center of Photo

COMPARABLE SALES INFORMATION

No. P6

Buyer: Frees

Seller: Trol Land Corp.

Description: Short Legal: Metes and bounds description in Sec. 21, T40N, R1E.

County: Price

River: S. Fork Flambeau

Date of Sale: February 20, 1980

Type of Document: Warranty Deed

Size in Acres: 26

River Frontage: 900 feet

Total Price: $10,000

Price per Acre: $384.62

Price per Front Foot: $11.11

Road Access: Yes

Distance to Light Duty Road: 1.5 miles

Distance to Secondary Road: -

Average Elevation: Varies

Topography: Ridge

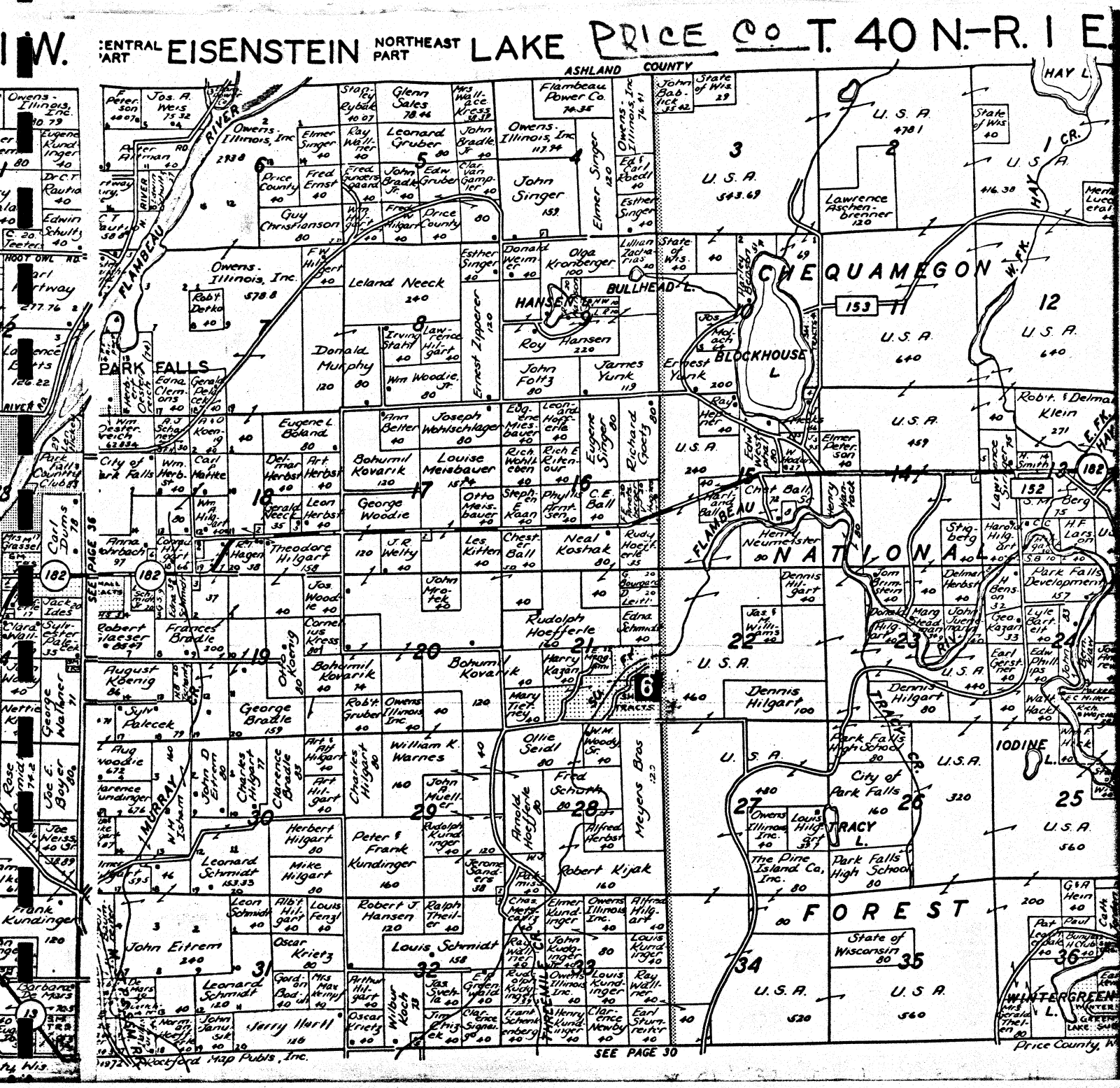
Percentage of Marsh or Lowland: 10 percent

Vegetation: Dense

Distance to Closest Town: 4 miles to Park Falls

Buyer Profile: Investor/Business

Factors Influencing Purchase Decision: Purchased for investment purposes. Owners have resold a few parcels.


W.
CENTRAL PART
EISENSTEIN
NORTHEAST PART
LAKE
PRICE Co
T. 40 N.-R. 1 E.
ASHLAND COUNTY
PARK FALLS
FLAMBEAU RIVER
CHEQUAMEGON
NATIONAL FOREST
BULLHEAD L.
BLOCKHOUSE L.
HANSEN
TRACY L.
IODINE L.
WINTERGREEN L.
HAY L.
HAY CR.
W. FK.
E. FK.
153
152
182
SEE PAGE 36
SEE PAGE 30
Rockford Map Publs., Inc.
Price County, W

COMPARABLE P6

Looking Southwest, Comparable in Foreground
to Left (East) of River

Looking Southeast, Comparable Above (South and East of) River

COMPARABLE SALES INFORMATION

No. P14

Buyer: Shonder

Seller: Matile & Baumann

Description: Short Legal: Metes and bounds description in Govt. Lot 4 in Sec. 11, T38N, R1W

County: Price

River: S. Fork Flambeau

Date of Sale: March 7, 1981

Type of Document: Warranty Deed

Size in Acres: 5.2

River Frontage: 490 feet

Total Price: $8,000

Price per Acre: $1538.46

Price per Front Foot: $16.33

Road Access: Yes

Distance to Light Duty Road: NA

Distance to Secondary Road: 2.5 miles

Average Elevation: Varies

Topography: Relatively flat

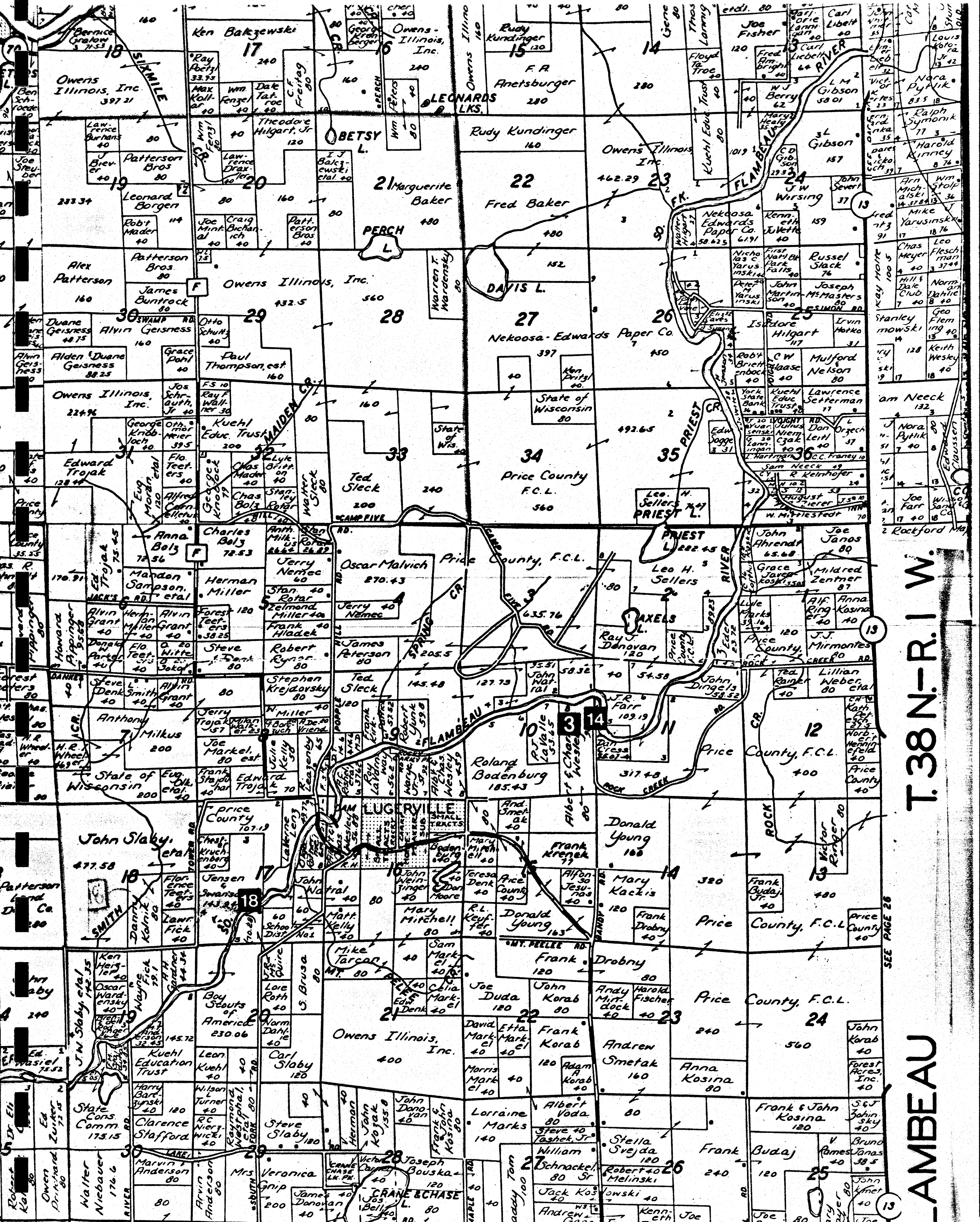
Percentage of Marsh or Lowland: 80 percent

Vegetation: Dense

Distance to Closest Town: 11 miles to Phillips

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated


T.38 N.-R. I W.
LAMBEAU
SEE PAGE 26
Ken Balczewski
Owens-Illinois, Inc.
Rudy Kundinger
F. A. Anetsburger
LEONARDS LKS.
BETSY L.
PERCH L.
DAVIS L.
PRIEST L.
AXELS L.
SIXMILE CR.
MAIDEN CR.
PRIEST CR.
SO. FK. FLAMBEAU RIVER
FLAMBEAU RIVER
SPRING CR.
ROCK CREEK
LUGERVILLE
Owens Illinois, Inc. 397.21
Patterson Bros
Leonard Borgen
Marguerite Baker
Fred Baker
Alex Patterson
Owens Illinois, Inc. 432.5
Nekoosa-Edwards Paper Co. 397
Alvin Geisness
Paul Thompson, est.
State of Wisconsin
Kuehl Educ. Trust
Edward Trojak
Ted Sleck
Price County F.C.L. 560
Leo H. Sellers
Charles Bolz
Anna Bolz
Oscar Malvich 270.43
Price County, F.C.L.
Herman Miller
Ray J. Donovan
Robert Rynor
James Peterson
Stephen Krejdovsky
John Dingels
Anthony Milkus
State of Wisconsin
Roland Bodenburg 185.43
Donald Young
John Slaby, etal 477.58
Frank Krenek
Mary Kackis
Price County, F.C.L.
Mary Mitchell
Frank Drobny
Owens Illinois, Inc. 400
Boy Scouts of America 230.06
Price County, F.C.L.
Kuehl Education Trust
Carl Slaby
Andrew Smetak
Anna Kosina
Clarence Stafford
Steve Slaby
Lorraine Marks
Albert Voda
Stella Svejda
Frank Budaj
Frank & John Kosina
Joseph Bouska
Veronica Gnip
CRANE & CHASE L.
William Schnackel Sr
Robert Melinski
Jack Koslowski
Marvin Anderson
Walter Niebauer
State Cons. Comm. 175.15
MT. PEELEE RD.
CAMP FIVE RD.
SWAMP RD.
ROCK CREEK RD.
SMITH
LAKE
SOUTH FORK RD.
13
F
3
14
18

COMPARABLE P14

Looking West, Comparable P14 in Foreground and P3 Above

Looking East, Comparable P3 in Lower Center
and Comparable P14 in Center of Photo

COMPARABLE SALES INFORMATION

No. P18

Buyer: Flietner

Seller: Swanson

Description: Short Legal: Metes and bounds description in Govt. Lots 3 and 4 in Sec. 17, T38N, R1W

County: Price

River: S. Fork Flambeau

Date of Sale: October 2, 1980 (Warranty Deed)
March 15, 1980 (Land Contract)

Type of Document: Land Contract satisfied by Warranty Deed

Size in Acres: 28

River Frontage: 550 feet

Total Price: $10,000

Price per Acre: $357.14

Price per Front Foot: $18.18

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: 1,400 feet

Topography: 1,450 foot ridge through property

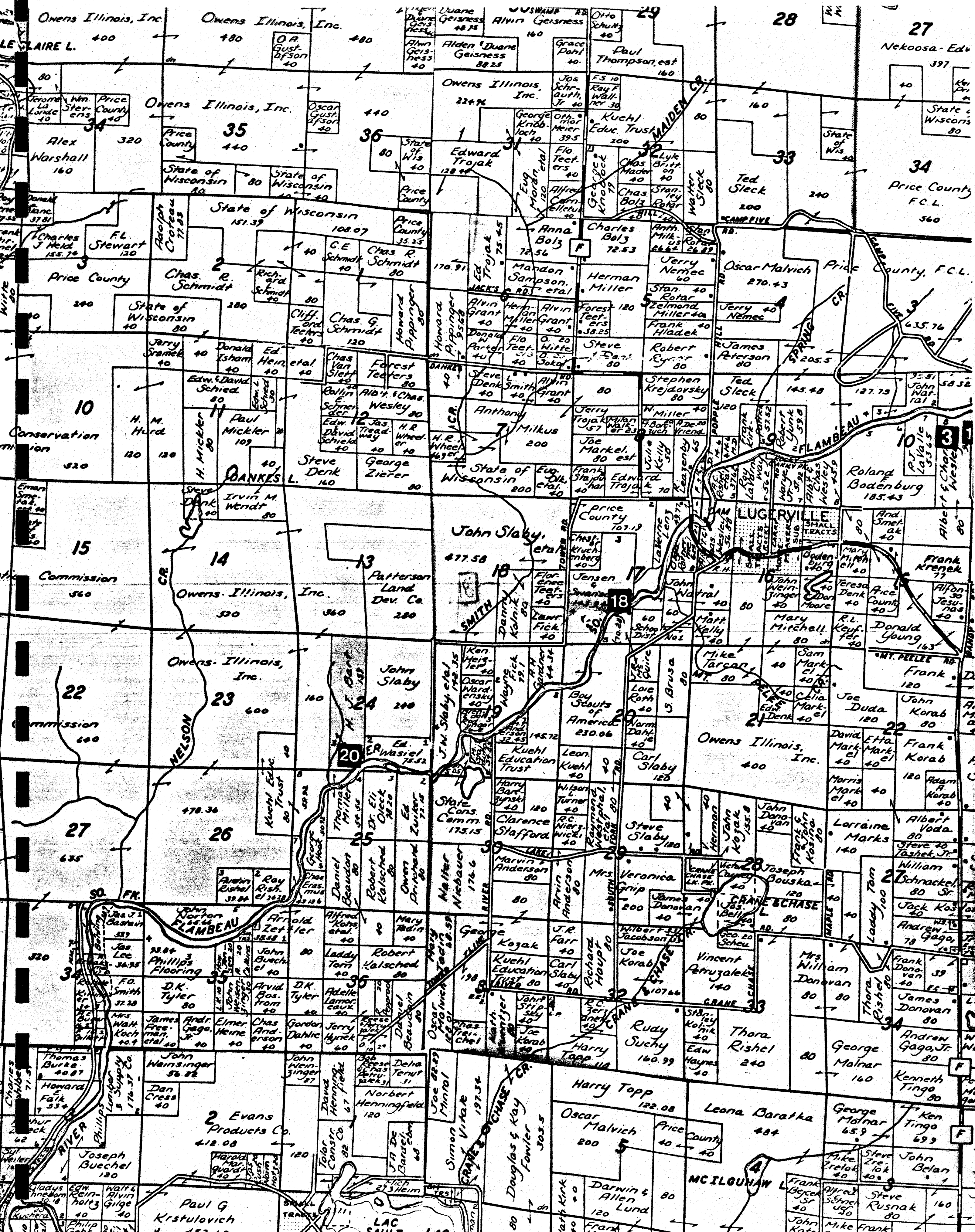
Percentage of MaRMS AR Lowland: Might be 30 percent

Vegetation: Dense

Distance to Closest Town: 13 miles to Phillips

Buyer Profile: Future home

Factors Influencing Purchase Decision: Purchased for future year round home site.


Owens Illinois, Inc. 400
Owens Illinois, Inc. 480
LE CLAIRE L.
O.A. Gustafson
Duane Geisness
Alvin Geisness 160
Otto Schultz 40
Alden & Duane Geisness 88.25
Grace Pohl 40
Paul Thompson, est. 160
28
27
Nekoosa-Edw 397
Jerome La Londe 40
Wm. Stevens
Price County 40
Owens Illinois, Inc.
Oscar Gustafson
440
Owens Illinois, Inc. 224.96
Jos. Schröuth, Jr. 40
Ray F. Wallner 30
George Knoblock
Kuehl Educ. Trust 200
MAIDEN CR.
160
State of Wisconsin 80
34
Alex Warshall 160
320
35
440
Price County
36
80
State of Wis 40
Edward Trojak 128.41
31
32
Lyle Britton 40
33
State of Wis.
34
Price County F.C.L. 560
State of Wisconsin 80
State of Wisconsin
Chas. Mader 40
Chas. Bolz 40
Walter Sleck 80
Ted Sleck 200
240
Donald Blanc 37.81
Adolph Croteau 77.03
State of Wisconsin 151.39
108.07
Price County 35.25
Anna Bolz 72.56
Charles Bolz 72.53
CAMP FIVE RD.
Charles J Held 155.74
F.L. Stewart 120
3
C.E. Schmidt 40
Chas. R. Schmidt 80
170.91
Ed. Trojak 75.45
Mandon Sampson, etal
Herman Miller
Jerry Nemec 60
Oscar Malvich 270.43
Price County, F.C.L.
Price County
240
2
Chas. R. Schmidt
280
Richard Schmidt
1
JACK'S RD.
6
5
Stan. Rotar
Zelmond Miller
4
SPRING CR.
3
635.76
State of Wisconsin 80
Clifford Teeters 40
Chas. G. Schmidt 120
Howard Pippinger 80
Howard Pippinger 95.60
Alvin Grant 40
Herman Miller 40
Alvin Grant 40
Forest Teeters 38.25
Frank Hladek 40
Jerry Nemec
Jerry Sramek 40
Donald Isham 40
Ed. Hein, etal 40
Chas Van Slett 40
Forest Teeters 80
Donald Parker 40
Flo. Teeters 40
O. Witte 20
Steve Denk 80
Robert Ryan 80
James Peterson 80
205.5
Edw. & David Schied 80
Edw. L. Schied 30
Rollin E. Schneider
Alb't & Chas. Wesley 80
Steve Denk
L. Smith 40
Alvin Grant 40
80
Stephen Krejdovsky 80
Ted Sleck 120
145.48
127.73
John Watral
58.32
10
H. M. Hurd
11
Paul Mickler 109
Edw. David Schield 40
12
Jas. Treadway
H.R. Wheeler 40
Anthony
7
Milkus 200
Jerry Trojak 57
W. Miller
FLAMBEAU
9
10
P.J. LaValle 53.65
Conservation Commission 520
120
120
H. Mickler
40
Steve Denk 160
George Zierer 80
H.R. Wheeler 169.61
State of Wisconsin 200
Joe Markel 80 est.
Julie Kelly 50
Edward Trojak
Roland Bodenburg 185.43
DANKES L.
Steve Denk
Irvin M. Wendt 80
Price County 107.19
LUGERVILLE
SMALL TRACTS
Albert & Charles Wesley
15
14
13
John Slaby, etal
477.58
18
17
Laverne Lenz
And. Smetak 40
Frank Krenek 77
Commission 560
CR.
Owens-Illinois, Inc. 520
360
Patterson Land Dev. Co. 280
Florence Teeters 40
Jensen & Swanson
18
John Watral 40
16
Teresa Denk 40
Price County 40
Alfonse Jesus 40
SMITH
Danny Kolnik 80
Lawr. Fick 40
School Dist. No1
Matt. Kelly 80
Mary Mitchell 80
R.L. Keufer 40
Donald Young 163
MT. PEELEE RD.
Owens-Illinois, Inc.
H. J. Bart 159
John Slaby 240
Ken Heisler 40
Oscar Wardensky 40
Wayne Fick 79.1
A.H. Gardner 44.34
J.W. Slaby, etal 142.35
Mike Tarcan 80
Sam Markel 40
Frank 120
22
23 600
160
24
19
Boy Scouts of America 230.06
Lore Roth 80
S. Brusa
Edw Denk 40
Celia Markel 40
Joe Duda 120
John Korab 80
Commission 640
NELSON
Ed. Wasiel 75.52
145.72
Kuehl Education Trust
20
Norm. Dahle 40
Carl Slaby 120
21
Owens Illinois, Inc. 400
David Markel 40
Etta Markel 40
Frank Korab 120
Leon. Kuehl 40
22
27 635
26
478.36
Kuehl Educ. Trust 80
Thomas Miller
Dr. Eli Olcott 72.20
Ed. Zwiker 72.15
State Cons. Comm. 175.15
Harry Barbynski 40
Wilson L. Turner 40
Clarence Stafford
R.C. Niergwicki 40
Raymond Westphal 80
Steve Slaby 120
Herman
John Kojak 135.8
John Donovan
Frank & John Kosina 80
Lorraine Marks 140
Albert Voda 80
Morris Markel 40
Adam A. Korab 40
Steve Jo Tashek, Jr.
25
30
LAKE
29
28
Joseph Bouska 120
William Schnackel, Sr. 80
Austin Rishel 39.84
Ray Rishel 24.28
George Block 50.32
Chas. Erasmus 23.36
Daniel Beaudoin 80
Robert Kalsched 80
Owen Pritchard 80
Walter Niebauer 176.6
Marvin Anderson 80
Arvin Anderson 80
Mrs. Veronica Gnip 200
CRANE & CHASE LK. RD.
Victor Carey
James Donovan 40
CRANE & CHASE L.
80
Laddy Tom 100
Jack Kos
SO. FK.
FLAMBEAU
John Norton 66.66
Arnold Zettler
Alfred Kohs, etal
Mary Tadin 40
George Kozak
J.R. Farr 40
Wilbert Jacobson
Geo. Scheu 20
MAPLE RD.
Andrew Gago
Jas. J. Bashein 359
Jas. Lee 36.95
93.84
Phillips Flooring
John Buechel
Leddy Tom 40
Robert Kalsched 80
Kuehl Education Trust 80
Carl Slaby 80
Richard Haupt 80
Joe Korab 80
CRANE & CHASE
Vincent Petruzalek 140
Mrs. William Donovan 80
Frank Donovan
39
34
F.O. Smith 37.28
D.K. Tyler 80
35
Arvid Bostrom
D.K. Tyler 80
36
Adelle Lamoreaux
Oscar Marvich
198
32
107.66
CRANE
33
Thora Rishel 80
James Donovan 80
320
Mrs. Walt. Koch 40.4
James Freeman, etal 40
Andr. Gago, Jr. 40
Elmer Heine 40
Chas Anderson 40
Gordon Dahlie 40
Jerry Hynek 60
Daniel Beaudoin
Chas Treichel
Joe Korab
R.C. Jerry
Rudy Suchy 160.99
Stanley Kolnik 40
Edw Haynes 40
Thora Rishel 240
George Molnar 160
34
Andrew Gago, Jr. 80
Harry Topp 114
Thomas Burke 40.87
Howard Faik 33.4
Phillips Lumber & Supply Co. 176.37
John Weinsinger 56.56
John Weinzinger 27
Bob Reese
Delia Tenut 31
Joe 82.29 Mintel
Simon Vitale 197.34
CRANE & CHASE CR.
Douglas & Kay Fowler 303.5
Harry Topp 122.08
Leona Baratka 484
George Molnar 65.9
Kenneth Tingo 80
Dan Cress 40
Charles Schilbe
Norbert Henningfield 120
David Henningfield 67
Ken Tingo 69.9
F
2 Evans Products Co. 412.08
Oscar Malvich 200
Price County 40
5
Joseph Buechel 120
Harold Marquardt 40
Tolor Constr. Co. 82
J.A. De Barsel 63
RIVER
4
Mike Zrelok 40
Steve Zrelok 40
John Belan 80
MCILGUHAW L.
Gladys Fahnestock
Edw. Reinholtz 40
Walt & Alvin Gilge 40
Paul G Krstulovich
Darwin & Allen Lund 120
80
Frank Becker Sr 40
Steve Rusnak 80
160
9
LAC SAULT
SMALL TRACTS

COMPARABLE P18

Looking Southwest, Comparable in Center

Looking Southeast, Comparable in Foreground

COMPARABLE SALES INFORMATION

No. P20

Buyer: McMahon

Seller: Bart

Description: Short Legal: The NE1/4NW1/4, the SE1/4NW1/4, the NE1/4SW1/4, and Lot 3 in Sec. 24, T38N, R2W.

County: Price

River: S. Fork Flambeau

Date of Sale: August 18, 1980

Type of Document: Land Contract

Size in Acres: 159

River Frontage: 369 feet

Total Price: $22,500

Price per Acre: $141.51

Price per Front Foot: $60.98

Road Access: No

Distance to Light Duty Road: .5 miles

Distance to Secondary Road: -

Average Elevation: Varies, high = 1,468 feet

Topography: Gently sloping to one hill (1,468 feet)

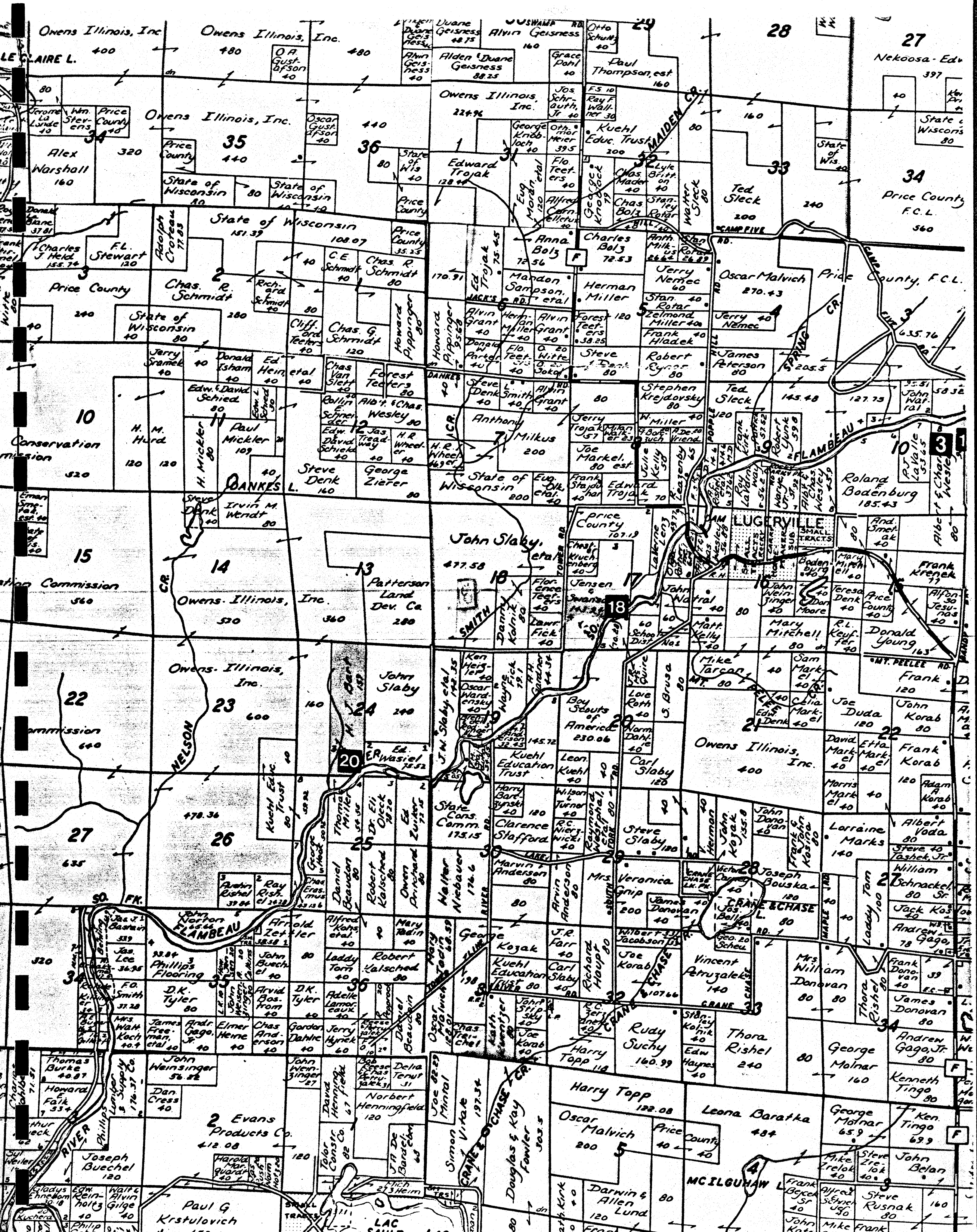
Percentage of Marsh or Lowland: 10 percent

Vegetation: Dense

Distance to Closest Town: 15 miles to Phillips

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated



Owens Illinois, Inc.
400
Owens Illinois, Inc.
480
480
LE CLAIRE L.
O.A. Gustafson
Duane Geisness 48.75
Alvin Geisness
160
Otto Schultz 40
Alden & Duane Geisness 88.25
Grace Pahl 40
Paul Thompson, est. 160
28
27
Nekoosa-Edw
397
Owens Illinois, Inc.
Owens Illinois, Inc. 224.96
Jos. Schrauth, Jr. 40
F.S. 10
Ray F. Wallner 30
MAIDEN CR.
160
Jerome La Lunde 40
Wm. Steverts
Price County 40
Oscar Gustafson 40
440
34
35
36
31
32
33
34
Alex Warshall 160
320
Price County
440
State of Wis 40
Edward Trojak 128.94
George Knoblock
Kuehl Educ. Trust 200
Lyle Britton 40
State of Wis.
State of Wisconsin 80
State of Wisconsin 40
Price County
Flo. Teeters 40
Chas. Mader 40
Chas. Bolz 40
Stanley Rotar
Walter Sleck
Ted Sleck 200
240
Price County F.C.L. 560
Charles J. Held 155.74
F.L. Stewart 120
Adolph Croteau 77.83
State of Wisconsin 151.39
108.07
Price County 35.25
Anna Bolz 72.56
Charles Bolz 72.53
CAMP FIVE RD.
Oscar Malvich 270.43
Price County, F.C.L.
3
2
C.E. Schmidt 40
Chas. R. Schmidt 80
170.91
Ed. Trojak 75.45
Mandon Sampson, etal
Herman Miller 120
Jerry Nemec 60
Price County
240
Chas. R. Schmidt
280
Richard Schmidt 40
80
JACK'S RD.
6
5
Stan. Rotar 40
Zelmond Miller 40
Jerry Nemec 40
4
SPRING CR.
635.76
State of Wisconsin 80
Clifford Teeters 40
Chas. G. Schmidt 120
Howard Pippinger
Howard Pippinger 95.60
Alvin Grant 40
Herman Miller 40
Alvin Grant 40
Forest Teeters 38.25
Frank Hladek 40
Jerry Sramek 40
40
Donald Isham 40
Ed. Heinz etal 40
Chas Van Sleet 40
Forest Teeters 80
Donald W. Parker 40
Flo. Teeters 40
Witte 40
Steve Denk 80
Robert Sykes 80
James Peterson 80
205.5
10
Edw. & David Schied 80
Edw. L. Schied 30
Rollin E. Schneider 40
Alb't. & Chas. Wesley 80
DANKES RD.
Steve Denk 40
L. Smith 40
Alvin Grant 40
80
Stephen Krejdorsky 80
Ted Sleck
145.48
127.73
John Watral
H. M. Hurd
11
12
7
Anthony Milkus 200
W. Miller
Jerry Trojak 57
Conservation Commission 520
120
120
H. Mickler 80
Paul Mickler 109
Edw. & David Schied 40
Jas. Treadway 40
H.R. Wheeler 40
H.R. Wheeler
Joe Markel 80 est.
Julie Kelly 50
9
FLAMBEAU R.
10
P.J. LaValle 65.65
Albert & Chas Wesley
Steve Denk 160
George Zierer 80
DANKES L.
State of Wisconsin 200
Frank Stadjuhar
Edward Trojak
Roland Bodenburg 185.43
Steve Denk
Irvin M. Wendt 80
Price County 107.19
LUGERVILLE
SMALL TRACTS
DAM
15
14
13
John Slaby, etal 477.58
18
17
16
And. Smetak 40
Albert & Chas Wesley
Frank Krenek 77
Conservation Commission 560
Patterson Land Dev. Co. 280
Owens Illinois, Inc. 520
360
Florence Teeters 40
Jensen Swanson
18
John Watral
John Weinzinger
Bodenburg
Mary Mitchell 40
Teresa Denk 40
Price County
Alfons Jesunas
NELSON CR.
SMITH
Lawr. Fick 40
Danny Kolnik 80
School Dist No. 1
Matt Kelly 40
Mary Mitchell 80
R.L. Keuffer 40
Donald Young 163
MT. PEELEE RD.
Owens Illinois, Inc.
John Slaby 240
160
Ken Hersler 40
Wayne Fick 79.1
A.H. Gardner 44.34
Mike Tarcon 80
Sam Markel 40
Frank 120
22
23
600
24
19
Oscar Wardensky 40
Boy Scouts of America 230.06
20
Lore Roth 40
S. Brusa
Joe Duda 120
John Korab 80
21
22
Commission 640
Norm Dahl 40
Edw. Denk 40
Celia Markel 40
J.W. Slaby etal 142.35
145.72
Owens Illinois, Inc. 400
David Markel 40
Etta Markel 40
Frank Korab 80
20
Ed. Wasiel 72.52
Kuehl Education Trust
Leon Kuehl 40
Carl Slaby 120
Adam A. Korab 40
Morris Markel 40
Kuehl Educ. Trust 80
NELSON
478.36
Thomas Miller
Dr. Eli Olech
Ed Zuiker 72.15
State Cons. Comm. 175.15
Harry Barzynski
Wilson L. Turner
Raymond Westphal etal
John Donovan
Albert Voda 80
27
26
25
Clarence Stafford
R.C. Nierzwicki
Steve Slaby 120
Herman
John Kozak 155.8
Frank & John Kosina
Lorraine Marks 140
Steve Tashek, Jr.
635
George Hook
Daniel Beaudoin
Robert Kalscheid
Owen Pritchard
Walter Niebauer 176.6
30
Marvin Anderson 80
29
Mrs. Veronica Gnip 200
CRANE & CHASE LK. PK.
28
Joseph Bouska 120
27
William Schnackel, Sr. 80
Austin Rishel 39.84
Ray Rishel
Chas. Erasmus
80
Arvin Anderson
James Donovan
Jas. Belleu
CRANE & CHASE L.
Laddy Tom 100
Jack Kos 40
SO. FK.
John Norton
FLAMBEAU
Arnold Zettler
Alfred Kohs etal
Mary Tadin 40
George Kozak
J.R. Farr 40
Richard Houpt 80
Wilbert & Jacobson
Geo. Schau
MAPLE RD.
Andrew Gago, Jr. 78
Jas. J. Bastain
Jas. Lee 36.95
Phillips Flooring
John Buechel
Laddy Tom
Robert Kalscheid 80
Mary Tadin
Kuehl Education Trust 80
Carl Slaby 40
Joe Korab 80
Vincent Petruzalek 140
Mrs. William Donovan 80
Thora Rishel
Frank Donovan
320
35
36
31
32
33
34
F.O. Smith 37.28
D.K. Tyler 80
Arvid Bostrom
D.K. Tyler
Adelle Lamoureaux
Walter
FLAMBEAU
CRANE
James Donovan 80
Mrs. Walt Koch 40.9
James Freeman etal
Andr. Gago, Jr.
Elmer Heine 40
Chas Anderson 40
Gordon Dahlie 40
Jerry Hynek 60
Daniel Beaudoin
Oscar Malwich 122.01
Chas Trochel
Kath. Lorentzen
Joe Korab
Harry Topp 118
R.C. Zerbinski
Rudy Suchy 160.99
Stanley Kolnik 40
Edw Haynes 40
Thora Rishel 240
George Molnar 160
Andrew Gago, Jr. 80
Thomas Burke 40.87
Howard Falk 33
Phillips Lumber Supply Co. 176.37
John Weinsinger 56.82
John Weinzinger 27
David Henning
Delia Ternut 31
Norbert Henningfield 120
Joe Mintal 82.29
Simon Vitale 197.34
Douglas & Kay Fowler 303.5
CRANE & CHASE CR.
Harry Topp 122.08
Leona Baratka 484
George Molnar 65.9
Ken. Tingo 69.9
Kenneth Tingo 80
Dan Cress 40
2
Evans Products Co. 412.08
Tolar Cons Co.
J.A. DeBardeleben
Oscar Malvich 200
Price County 40
5
4
Joseph Buechel 120
Harold Marquardt
120
RIVER
Mike Zrelok
Steve Zrelok
John Belan
3
Gladys Ehnebom
Edw. Reinholtz
Walt & Alvin Gilge 40
Paul G. Krstulovich
Mich Heim
LAC SAULT
Darwin & Allen Lund
80
MCILGUHAW L.
Frank Bejcek Sr.
Alfred Scheu
Steve Rusnak 80
160
F

COMPARABLE P20

Overview of Comparable

Comparable in Foreground and Middle Distance

COMPARABLE SALES INFORMATION

No. P33

Buyer: Heindl

Seller: Detzel

Description: Short Legal: Govt. Lot 4 in Sec. 19, T37N, R2W.

County: Price

River: S. Fork Flambeau

Date of Sale: May 5, 1980

Type of Document: Land Contract

Size in Acres: 66

River Frontage: 2,640 feet

Total Price: $9,000

Price per Acre: $136.36

Price per Front Foot: $3.41

Road Access: No

Distance to Light Duty Road: 1.0 mile

Distance to Secondary Road: -

Average Elevation: 1,380 feet

Topography: Relatively flat

Percentage of Marsh or Lowland: 5 percent

Vegetation: Dense

Distance to Closest Town: 16 miles to Phillips

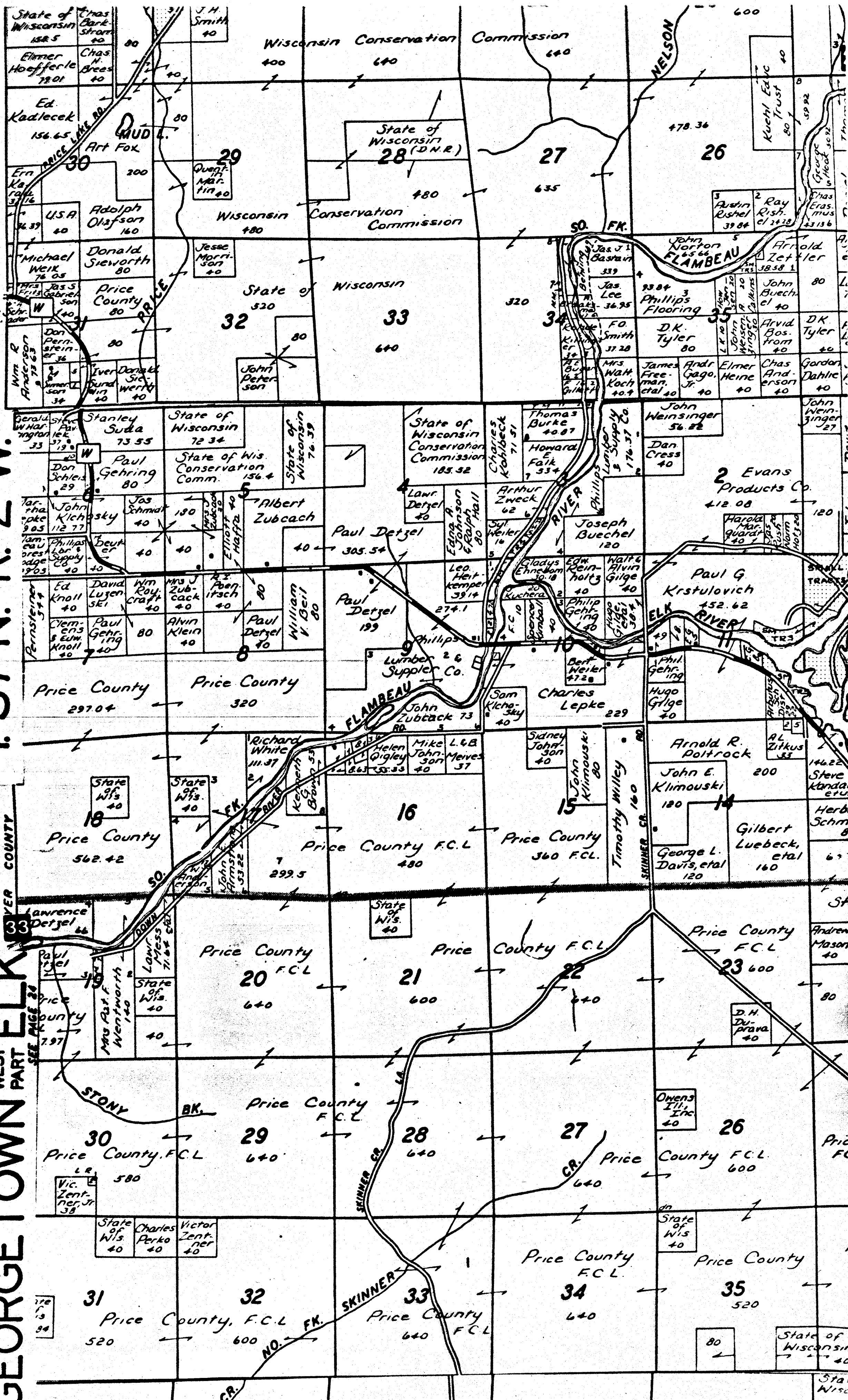
Buyer Profile: Investor/Recreation

Factors Influencing Purchase Decision: Purchased for investment and also recreational use

SOUTHWEST PART FLAMBEAU

T. 37 N.-R. 2 W.

GEORGETOWN WEST PART ELK



COMPARABLE P33

Looking South, Comparable in Foreground

COMPARABLE SALES INFORMATION

No. R8

Buyer: Iannitello

Seller: Kernan

Description: Short Legal: Part of Govt. Lot 4 in Sec . 1, T36N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: December 5, 1978

Type of Document: Warranty Deed

Size in Acres: 31

River Frontage: 900 feet

Total Price: $27,500

Price per Acre: $887.10

Price per Front Foot: $30.56

Road Access: No (3,000 feet)

Distance to Light Duty Road: 7,500 feet

Distance to Secondary Road: -

Average Elevation: 1,190 feet

Topography: Relatively flat

Percentage of Marsh or Lowland: 5 percent

Vegetation: Dense

Distance to Closest Town: 15.5 miles to Ladysmith

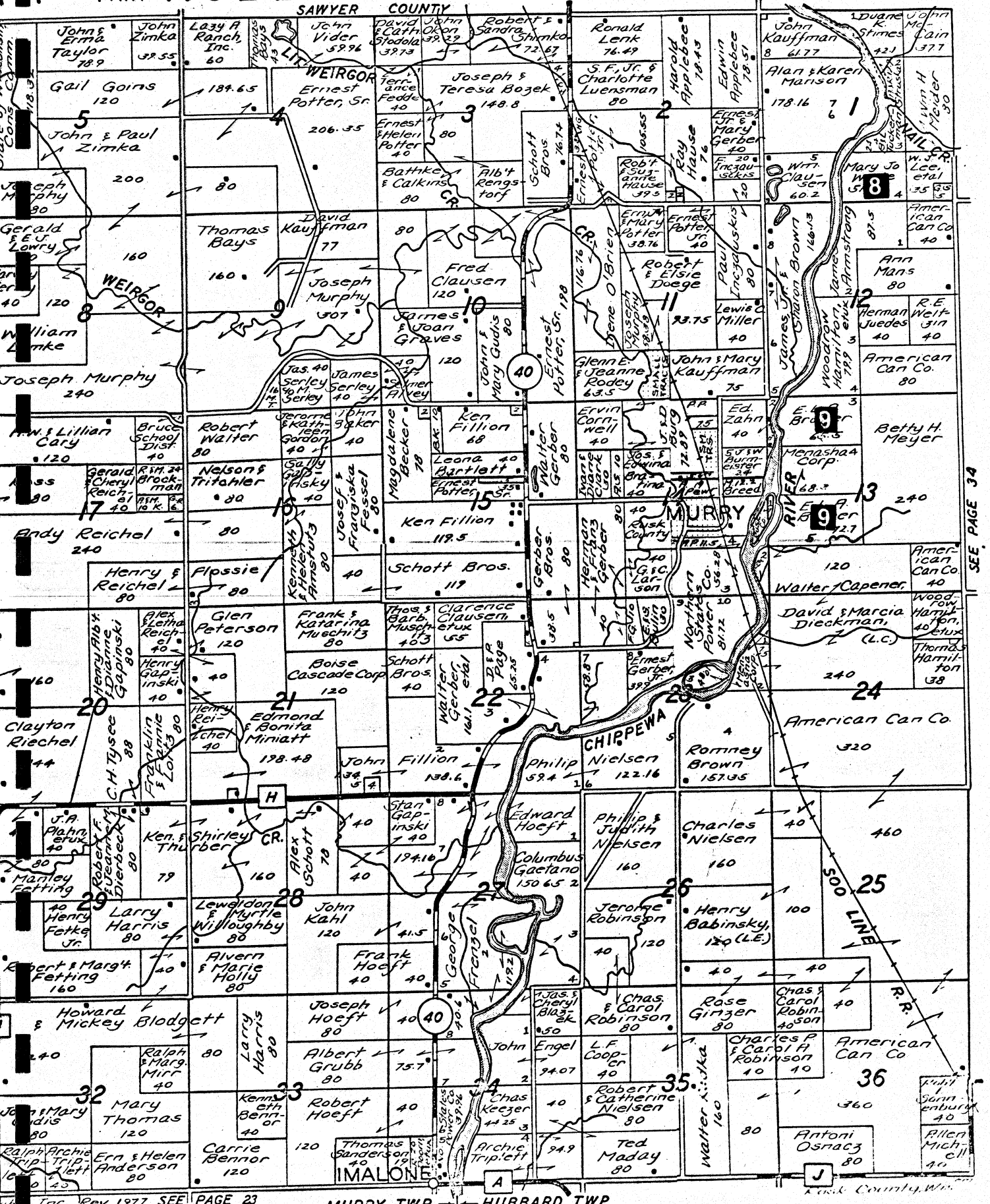
Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

RUSK CO

WEST PART HUBBARD T. 36 N. - R. 7 W.

SAWYER COUNTY



COMPARABLE R8

Looking South, Comparable in Center, to Left (East) of River

Looking East, Comparable in Center

COMPARABLE SALES INFORMATION

No. R9

Buyer: Enerson

Seller: Bruger

Description: Short Legal: Govt. Lots 3 and 5 and the NE1/4SW1/4 in Sec. 13, T36N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: September 6, 1977

Type of Document: Warranty Deed

Size in Acres: 138

River Frontage: 2,640 feet

Total Price: $18,000

Price per Acre: $130.43

Price per Front Foot: $6.82

Road Access: No

Distance to Light Duty Road: .5 miles

Distance to Secondary Road: -

Average Elevation: 1,150 feet

Topography: Relatively flat

Percentage of Marsh or Lowland: 25 percent

Vegetation: Dense

Distance to Closest Town: 13.5 miles to Ladysmith

Buyer Profile: Not distinguishable

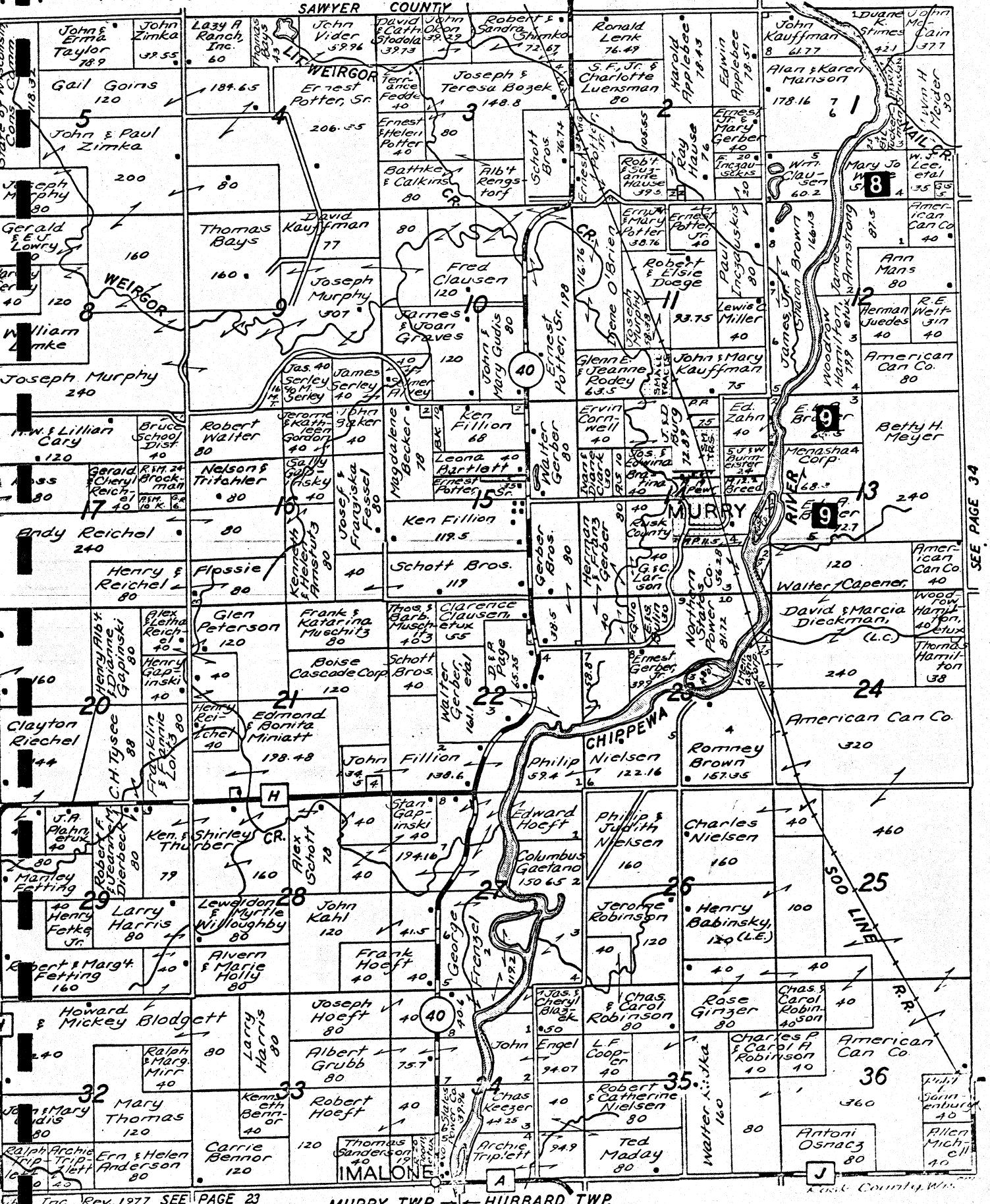
Factors Influencing Purchase Decision: Not stated

RUSK CO

T. 36 N. - R. 7 W.

WEST PART HUBBARD

SAWYER COUNTY



COMPARABLE R9

Looking Southwest, Northern Portion of Comparable in Center Foreground

Looking Southeast, Northern Portion of Comparable in Left Corner of Photo and Southern Portion in Center, all Left (East) of River

COMPARABLE SALES INFORMATION

No. R10

Buyer: Kopras

Seller: Northern States Power Co.

Description: Short Legal: Part of Govt. Lot 7 in Sec. 16, T35N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: February 25, 1979

Type of Document: Warranty Deed

Size in Acres: 25

River Frontage: 1,320 feet

Total Price: $7,100

Price per Acre: $284

Price per Front Foot: $5.38

Road Access: Yes

Distance to Light Duty Road: NA

Distance to Secondary Road: 0

Average Elevation: 1,100 feet

Topography: Ridge through property

Percentage of Marsh or Lowland: 5 percent

Vegetation: Dense

Distance to Closest Town: 6 miles to Bruce

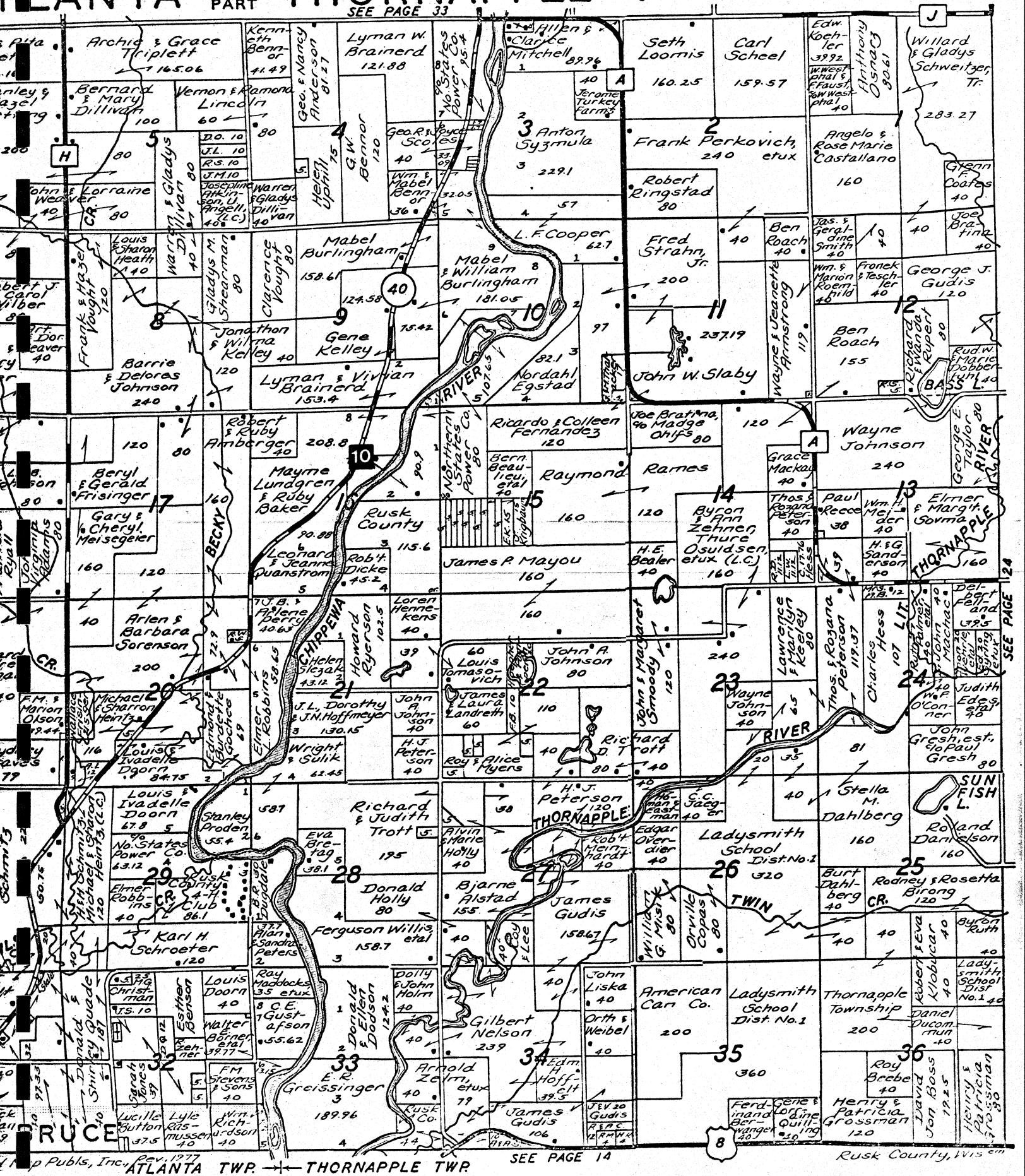
Buyer Profile: Home

Factors Influencing Purchase Decision: For year-round residence site

RUSK CO

ATLANTA NORTH PART THORNAPPLE T. 35 N. - R. 7 W.

SEE PAGE 33



Rev. 1977

Rusk County, Wis.

COMPARABLE R10

Looking South, Comparable in Center of Photo Between River and Highway

COMPARABLE R10

Looking Northeast, Comparable in Center

COMPARABLE SALES INFORMATION

No. R12

Buyer: Landreth, Tuckerman

Seller: Tuckerman, Mugica

Description: Short Legal: Part of Govt. Lot 3 in Sec. 8, T34N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: September 24, 1980 (Landreth from Tuckerman)
April 28, 1979 (Tuckerman from Mugica)

Type of Document: Warranty Deed, Warranty Deed

Size in Acres: 30

River Frontage: 2,200 feet

Total Price: $26,500, $22,000

Price per Acre: $883.33, $733.33

Price per Front Foot: $12.05, $10

Road Access: Yes

Distance to Light Duty Road: NA

Distance to Secondary Road: 0

Average Elevation: 1,100 feet

Topography: Rolling hills

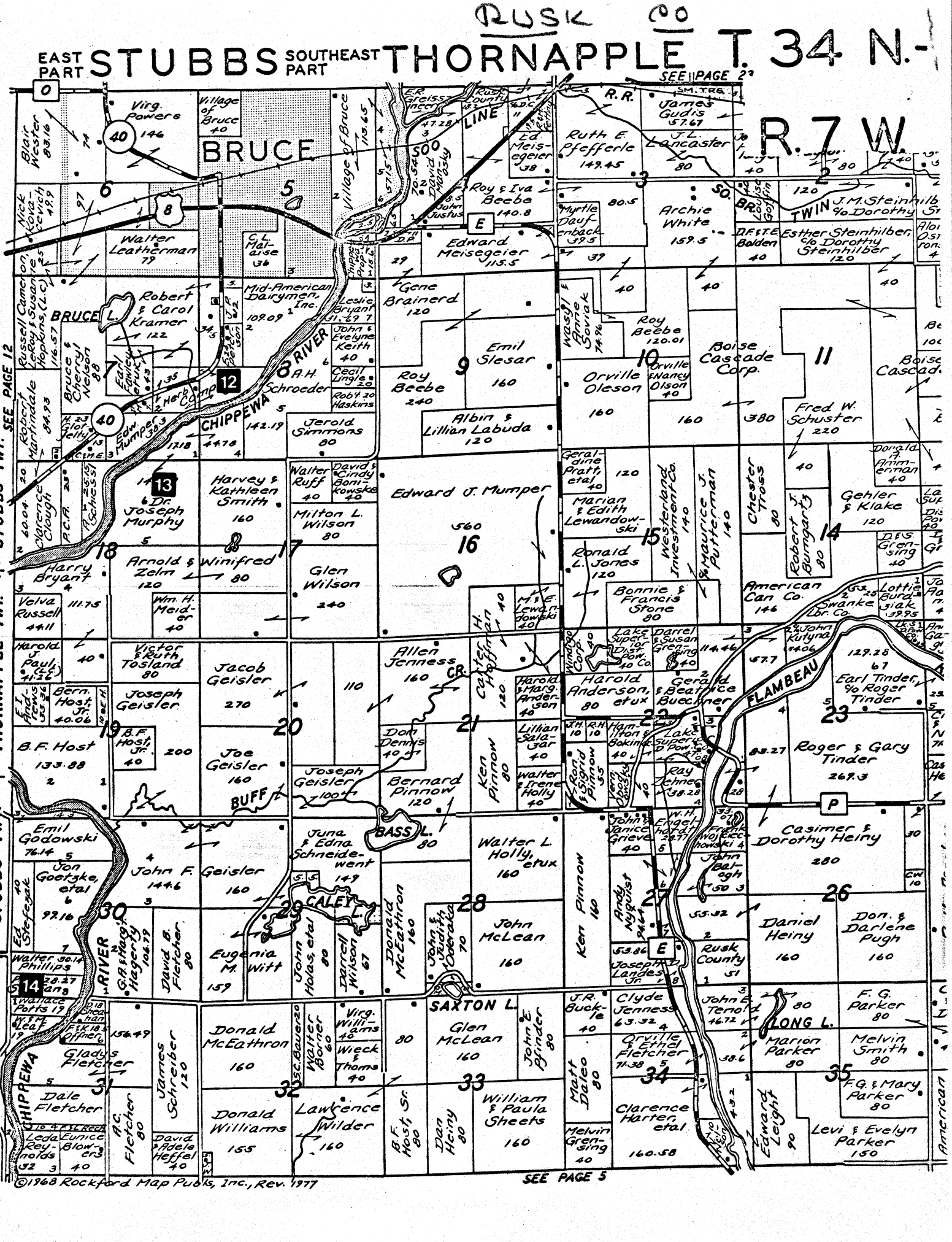
Percentage of Marsh or Lowland: 5 percent

Vegetation: Medium

Distance to Closest Town: .5 miles to Bruce

Buyer Profile: Home

Factors Influencing Purchase Decision: For year-round residence site


RUSK CO
EAST PART STUBBS SOUTHEAST PART THORNAPPLE T. 34 N. - R. 7 W.
SEE PAGE 23
STUBBS TWP. → ← THORNAPPLE TWP. → ← STUBBS TWP.
SEE PAGE 12
BRUCE
BRUCE L.
CHIPPEWA RIVER
BUFF
BASS L.
CALEY L.
SAXTON L.
LONG L.
FLAMBEAU
CR.
LINE
SEE PAGE 5
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COMPARABLE R12

Looking Northwest, Comparable to Left of Center

Looking Southeast, Comparable in
Center Between River and Highway

COMPARABLE SALES INFORMATION

No. R13

Buyer: Litvinoff

Seller: Murphy

Description: Short Legal: Govt Lot 1 in Sec. 7, Govt Lots 5 and 6 and the E1/2NE1/4 in Sec. 18, all in T34N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: January 3, 1981

Type of Document: Land Contract

Size in Acres: 162

River Frontage: 5,300 feet

Total Price: $20,000

Price per Acre: $123.46

Price per Front Foot: $3.77

Road Access: Yes

Distance to Light Duty Road: -

Distance to Secondary Road: -

Average Elevation: 1,080 feet

Topography: Rolling hills

Percentage of Marsh or Lowland: 50 percent

Vegetation: Dense

Distance to Closest Town: 2.5 miles to Bruce

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

RUSK CO

EAST PART STUBBS SOUTHEAST PART THORNAPPLE T. 34 N.-

COMPARABLE R13

Looking Northwest, Comparable in Middleground

Looking Southwest, Comparable in
Center of Picture to the Left of River

COMPARABLE SALES INFORMATION

No. R14

Buyer: Ensenbach

Seller: Steffan

Description: Short Legal: Part of Govt. Lot 8 in Sec. 30, T34N, R8W.

County: Rusk

River: Chippewa River

Date of Sale: May 23, 1981

Type of Document: Land Contract

Size in Acres: 28.27

River Frontage: 657 feet

Total Price: $12,000

Price per Acre: $424.48

Price per Front Foot: $18.26

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: 1,100 feet

Topography: Rolling hills

Percentage of Marsh or Lowland: 10 percent

Vegetation: Dense

Distance to Closest Town: 5.5 miles to Bruce

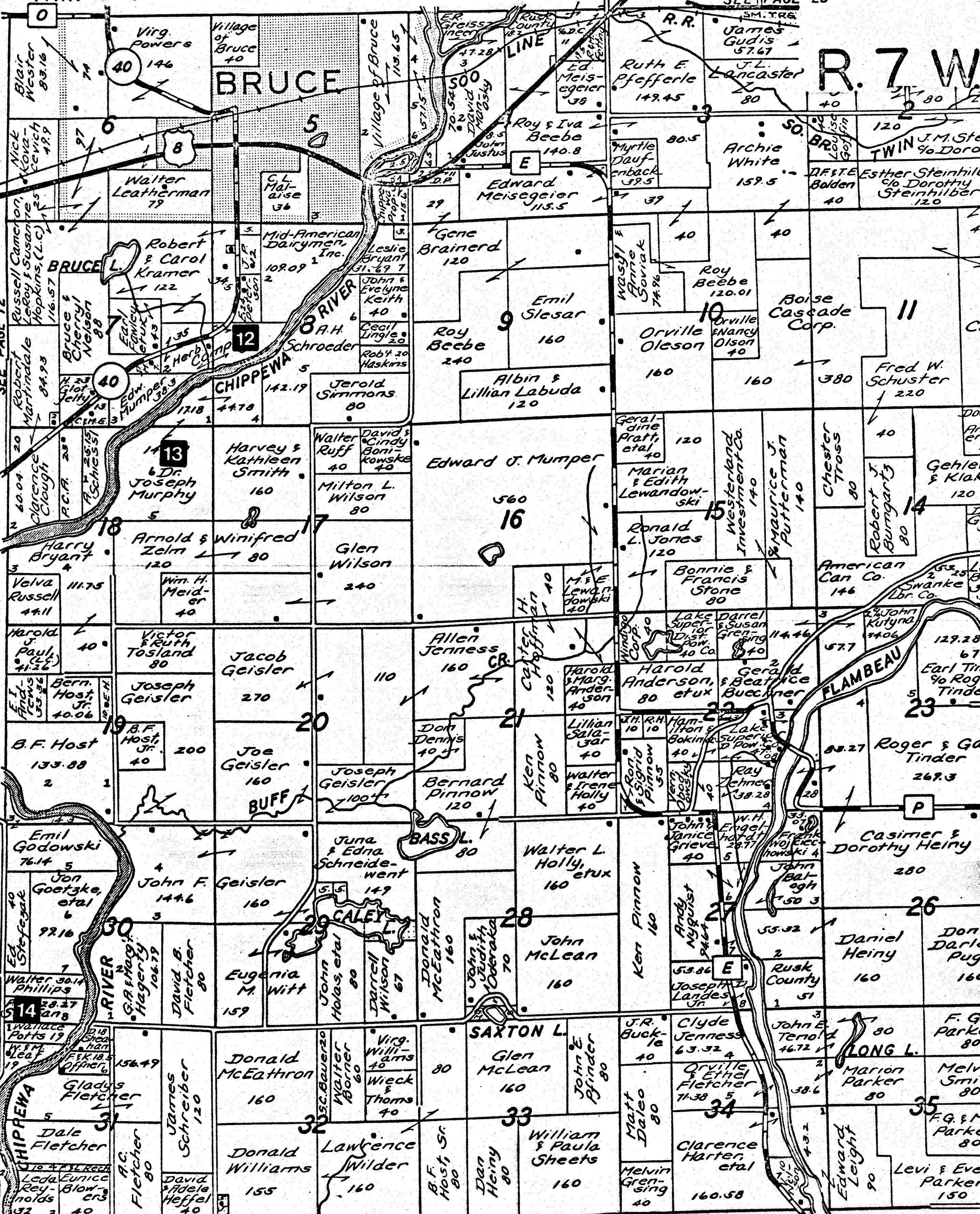
Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

RUSK CO

EAST PART STUBBS SOUTHEAST PART THORNAPPLE T. 34 N R. 7 W

SEE PAGE 23



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SEE PAGE 5

COMPARABLE R14

Looking East, Comparable to the Right
of Center, Between River and Road

Looking North, Comparable in Left Foreground

COMPARABLE SALES INFORMATION

No. R15

Buyer: Merrill & Swanson

Seller: Powers

Description: Short Legal: Govt. Lot 2 in Sec. 36, T34N, R8W.

County: Rusk

River: Chippewa River

Date of Sale: March 26, 1980

Type of Document: Land Contract

Size in Acres: 35

River Frontage: 1,320 feet

Total Price: $18,000

Price per Acre: $514.29

Price per Front Foot: $13.64

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: 1,066 feet

Topography: Rolling

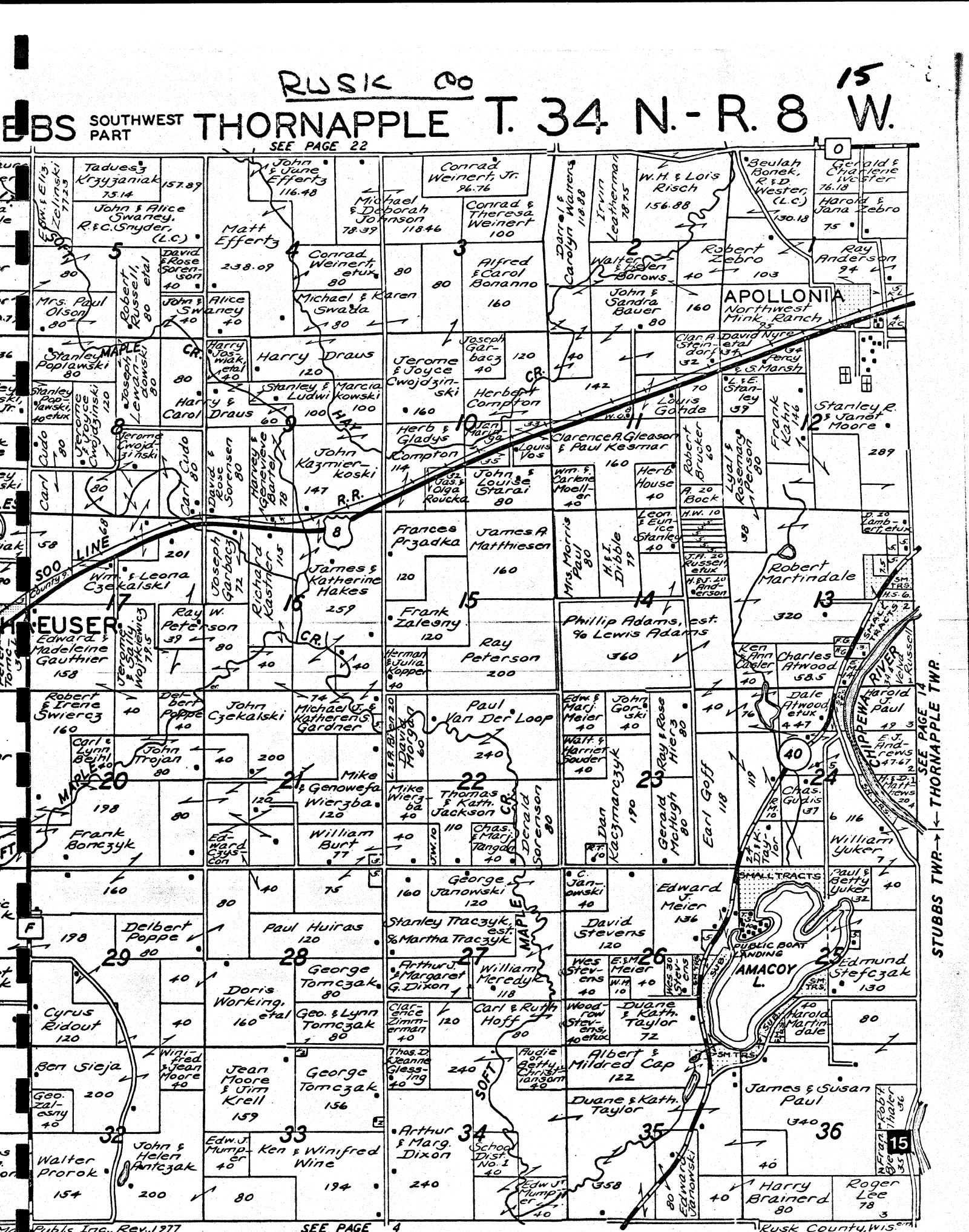
Percentage of Marsh or Lowland: 5 percent

Vegetation: Medium

Distance to Closest Town: 6 miles to Bruce

Buyer Profile: Home/Investment

Factors Influencing Purchase Decision: For year-round residence site


RUSK CO
15
BBS SOUTHWEST PART
THORNAPPLE
T. 34 N. - R. 8 W.
SEE PAGE 22
SEE PAGE 14
THORNAPPLE TWP.
STUBBS TWP.
SEE PAGE 4
Rusk County, Wis.
Publs, Inc., Rev., 1977
APOLLONIA
EUSER
AMACOY L.
CHIPPEWA RIVER
MAPLE CR.
SOO LINE R.R.
PUBLIC BOAT LANDING
SMALL TRACTS
Edw. & Elis. Zelinski 77.23
Tadeusz Krzyzaniak 157.89 75.14
John & Alice Swaney, R. & C. Snyder, (L.C.)
David & Rose Sorenson 40
Robert L. Russell, etal 80
Mrs. Paul Olson 80
John & Swaney 40
Alice Swaney 40
John & June Effert 116.48
Matt Effert 238.09
Michael & Deborah Johnson 78.39
Conrad Weinert, Jr. 96.76
Conrad & Theresa Weinert 100
Conrad Weinert, etux 80
Michael & Karen Swalla 80
Alfred & Carol Bonanno 160
Darrel & Carolyn Walters 118.88
Irvin Leatherman 78.75
W. H. & Lois Risch 156.88
Walter & Helen Borows 40
John & Sandra Bauer 80 160
Beulah Bonek, R. & D. Wester, (L.C.) 130.18
Gerald & Charlene Wester 76.18
Harold & Jana Zebro 75
Robert Zebro 103
Ray Anderson 94
Stanley Poplawski 80
Joseph Lewandowski 80
Harry Draus 120
Harry & Carol Draus 60
Harry Jaskwiak, etal 40
Stanley & Marcia Ludwikowski 100
Jerome & Joyce Cwojdzinski 120
Jerome & Joyce Cwojdzinski 80
Carl Cudo 80
Carl 80
David & Rose Sorensen 80
Harvey & Genevieve Barel 78
John Kazmierkoski 147
Jerome & Joyce Cwojdzinski 160
Joseph Garbacz 40 120
Herbert Compton 142
Herb & Gladys Compton 114
Jan Harga 33
Louis Vos 35
Clar. A. Steindorf 32
David Nyre etal 34
Percy & S. Marsh 34
L. & E. Stanley 99
Louis Gohde 70
Frank Kahn 146
Stanley R. & Janet Moore 289
Clarence A. Gleason & Paul Kesmar 160
Wm. & Carlene Moeller 40
Herb House 40
Robert Brucker 60
Lyal & Rosemary Person 80
P. 20 Bock
H.W. 10
Leon & Eunice Stanley 40
J.A. 20 Russell etux
H. & J. 20 Anderson
D. 20 Lambert etux
Mrs. Morris Paul 80
H. & J. Dibble 79
Frances Przadka
James A. Matthiesen 160
Joseph Garbacz 72
Richard Kastner 115
James & Katherine Hakes 259
Wm. & Leona Czekalski
Jerome & Sally Wojtkiewicz 79.5
Ray W. Peterson 39 80
Frank Zalesny 120
Ray Peterson 200
Herman & Julia Kopper 40
Phillip Adams, est. % Lewis Adams 360
Robert Martindale 320
Ken & Ann Cagler 40
Charles Atwood 58.5
Dale Atwood etux 447
Harold J. Paul 49 3
E. J. Andrews 47.67
H. & D. Matthews 20 4
Chas. Gudis 37
William Yuker 7
Paul & Betty Yuker 32
Edward & Madeleine Gauthier 158
Robert & Irene Swierecz 160
Delbert Poppe 40
John Czekalski
Michael J. & Katherens Gardner 74
Carl & Lynn Beihl 40
John Trojan 80 200
Mike & Genowefa Wierzba 120
Edward Czyscon
William Burt 77
Frank Borczyk 198 80
David Horgo L.F.& B. 20
Paul Van Der Loop 240
Mike Wierzba 40
Thomas & Kath. Jackson 110
Chas. & Marj. Tangala 40
Derald Sorenson 80
Edw. & Marj. Meier 40
John Gorski 40
Walt. & Harriet Sauder 40
Ray & Rose Hiers 80
Dan Kaczmarczyk 190
Gerald McHugh 80
Earl Goff 118
Delbert Poppe 198 80
Paul Huiras 120
George Janowski 120
Stanley Traczyk, est. % Martha Traczyk
Arthur J. & Margaret G. Dixon
William Meredyk 118
C. Janowski 40
David Stevens 120
Edward J. Meier 136
Wes Stevens 40
E. & M. Meier 40
W.M. 10
Wes 30 Stevens 40
Edmund Stefczak 130
Cyrus Ridout 120
Doris Working, etal 160
George Tomczak 80
Geo. & Lynn Tomczak 80
Clarence Zimmerman 40 120
Carl & Ruth Hoff 80
Woodrow Stevens, etux 40
Duane & Kath. Taylor 72
Harold Martindale 80
Ben Sieja 200
Geo. Zalesny 40
Winifred & Jean Moore 40
Jean Moore & Jim Krell 159
George Tomczak 156
Thos. D. & Jeanne Glessing 40 240
Rudie & Betty Christiansen 40
Albert & Mildred Cap 122
Duane & Kath. Taylor
James & Susan Paul 340
Walter Prorok 154
John & Helen Antczak 200
Edw. J. Mumper 40
Ken & Winifred Wine 194 80
Arthur & Marg. Dixon 240
School Dist. No. 1 40
Edw. J. Mumper 40
Edward Janowski 80 358
Harry Brainerd 80
Roger Lee 78
Fran. & Robt. Thaler 36
SM TRS.
TRS.
HS. 6
R.C.
SOO
County B

COMPARABLE R15

Looking Northwest, Comparable in Center

Looking West, Comparable in Foreground

COMPARABLE SALES INFORMATION

No. R16

Buyer: Toohill

Seller: Korte

Description: Short Legal: Govt. Lot 1 in Sec. 1 and Govt. Lots 6, 7, and 8 in Sec. 12, all in T33N, R8W.

County: Rusk

River: Chippewa River

Date of Sale: May 10, 1981

Type of Document: Warranty Deed

Size in Acres: 183

River Frontage: 7,250 feet

Total Price: $10,000 (=undivided 1/5 interest)

Price per Acre: $273.22

Price per Front Foot: $6.90

Road Access: Yes

Distance to Light Duty Road: 0

Distance to Secondary Road: -

Average Elevation: 1,060 feet

Topography: Relatively flat

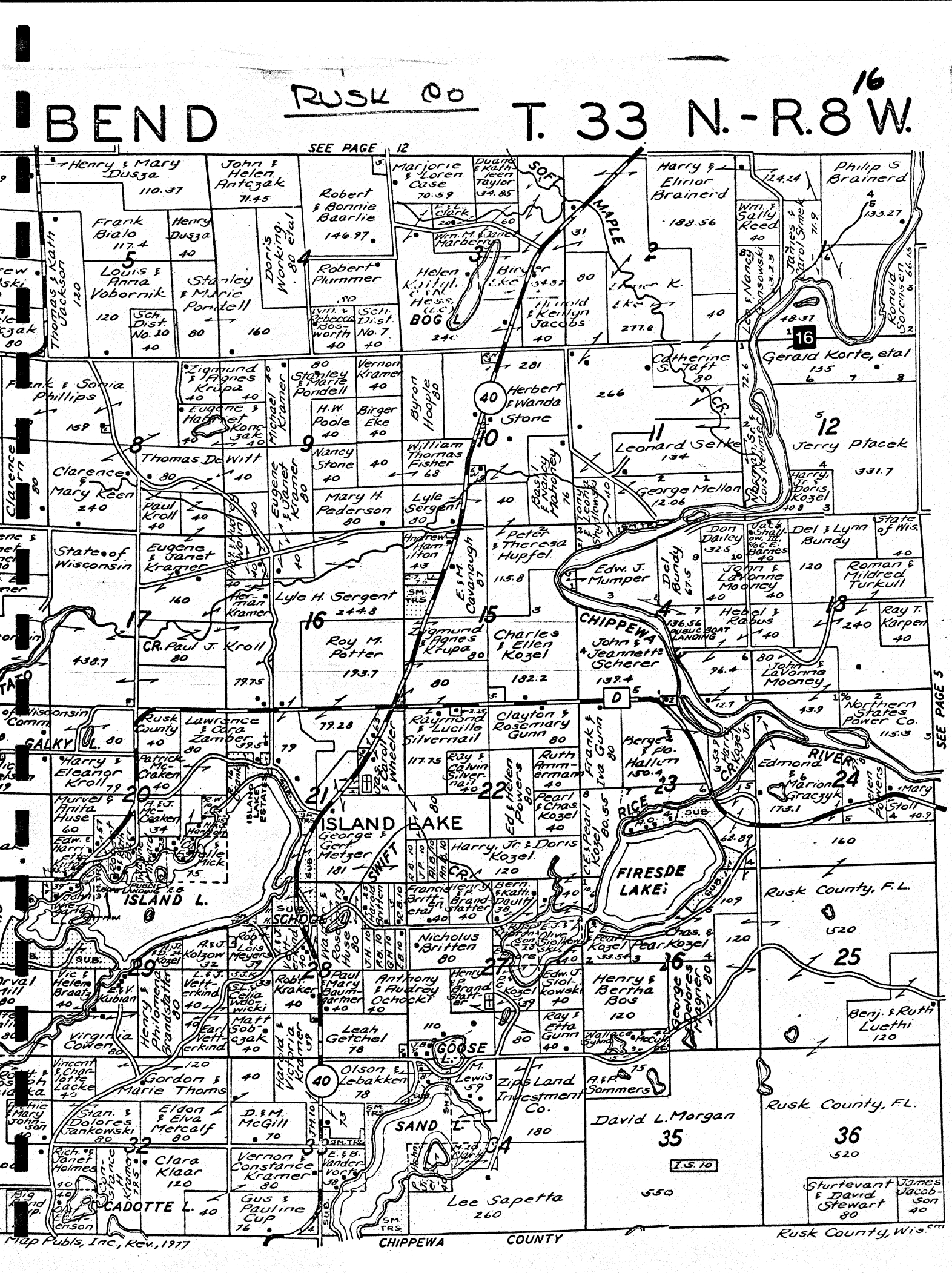
Percentage of Marsh or Lowland: 50 percent

Vegetation: Medium

Distance to Closest Town: 8 miles to Bruce

Buyer Profile: Investor

Factors Influencing Purchase Decision: Purchased for investment potential.


BEND
RUSK CO
16
T. 33 N. - R. 8 W.
SEE PAGE 12
SEE PAGE 5
Henry & Mary Dusza 110.37
John & Helen Antczak 71.45
Robert & Bonnie Baarlie 146.97
Marjorie & Loren Case 70.59
Duane & Kathleen Taylor 34.85
Harry & Elinor Brainerd 188.56
Philip S Brainerd 133.27
Frank Bialo 117.4
Henry Dusza 40
Doris Working 80 etal
Thomas & Kath Jackson 120
Louis & Anna Vobornik 120
Stanley & Marie Pondell 160
Sch Dist No. 10 40
Robert Plummer
Wm. & Rebecca Bosworth 40
Sch Dist No. 7 40
Helen Kaityl, et al
BOG
Birger Eke 80
Harold & Kerilyn Jacobs 40
Wm. & Sally Reed 40
James & Carol Smek 71.9
Lee & Nancy Jansowski 3.23
Ronald Sorensen 68.15
48.37
Gerald Korte, etal 135
Catherine S. Taft 80
Herbert & Wanda Stone
Leonard Selke 134
Jerry Ptacek 331.7
Harry, Jr. & Doris Kozel 40.8
George Mellon 12.06
Frank & Sonia Phillips 159
Zigmund & Agnes Krupa 40
Eugene & Harriet Konczak 40
Michael Kramer
Stanley & Marie Pondell 80
Vernon Kramer 40
H.W. Poole 40
Birger Eke 40
Byron Hoople 80
William Thomas Fisher 68
Nancy Stone 40
Thomas DeWitt 80
Clarence & Mary Keen 240
Paul Kroll 40
Eugene & Janet Kramer 80
Mary H. Pederson 80
Lyle Sergent 80
Bas & Nancy Mahoney 76
Tony & Leona Stawicki 1.0
Don Dailey 32.5
John & Shallow, III & C.E. Barnes 40
Del & Lynn Bundy 40
State of Wis. 40
Roman & Mildred Turkull 120
Edw. J. Mumper
Del Bundy 67.5
John & LaVonne Mooney 40
Hebel & Rabus 140
136.56 PUBLIC BOAT LANDING
Ray T. Karpen 40
240
State of Wisconsin
Eugene & Janet Kramer 160
Herman Kramer 40
Lyle H. Sergent 244.8
Andrew Hamilton 43
E. & M. Cavanaugh 87
Peter & Theresa Hupfel 115.8
Roy M. Potter 193.7
Zigmund & Agnes Krupa 80
Charles & Ellen Kozel 182.2
CHIPPEWA
John & Jeannette Scherer 139.4
96.4
John & LaVonne Mooney
CR. Paul J. Kroll 80
438.7
79.75
80
Rusk County 40
Lawrence & Cora Zamber 79.5
79.28
Raymond & Lucille Silvernail 117.75
Clayton & Rosemary Gunn 80
Frank & Iva Gunn 80
Berge & Flo. Hallum 150.4
Northern States Power Co. 115.3
43.9
12.7
GALKY
Harry & Eleanor Kroll 79
Patrick McCraken 40
Ray & Calvin Silvernail 40
Ruth Ammerman 40
Ed & Helen Powers 80
Pearl & Chas. Kozel 40
Jas. & Carol Wheeler
Harry & Flo. Kozel
RIVER
Edmond & Marion Gracyk 173.1
Helen Powers
Mary Stoll 40.9
Murvel & Anita Huse 60
A.E.J. McCraken 34
ISLAND LAKE ESTATES
ISLAND LAKE
George & Gert Metzger 181
Harry, Jr. & Doris Kozel 120
SWIFT
RICE
FIRESDE LAKE
Rusk County, F.L. 520
160
68.89
ISLAND L.
SCHOOL
Francis Britten, et al 40
Henry & P. Brandstatter 40
Bern & Kath. Daultt 38
Nicholus Britten 80
Chas. & Pearl Kozel 120
Pearl Kozel 39.54
Henry & Bertha Bos 120
Vic & Helen Braatz 40
E. & V. Kubian
L. & J. Veltkerkind 33
Robt. & Lois Meyers 39
A. & J. Kolzow 32
Henry & Philomena Brandstatter 80
Robt. Kraker 40
Paul & Mary Baumgartner 40
Anthony & Audrey Ochocki 40
Henry & P. Brandstatter
Edw. J. Siolkowski 40
Virginia Cowen 80
Earl Veltkerkind
Matt Sobczak 40
Leah Getchel 78
Harold & Victoria Kramer 39
GOOSE L.
Ray & Etta Gunn 40
Benj. & Ruth Luethi 120
Vincent & Charlotte Lacke 40
Gordon & Marie Thoms 120
Olson & Lebakken 78
M. Lewis 59
Zips Land Investment Co. 180
A. & P. Sommers 75
Wallace & Cyndi McCully
Eldon & Elva Metcalf 80
Stan. & Dolores Jankowski 80
D. & M. McGill 70
SAND L.
David L. Morgan
35
T.S. 10
Rusk County, F.L. 520
36
Rich. & Janet Holmes 40
Clara Klaar 120
Vernon & Constance Kramer 80
E. & B. Vanderwerp 38
Lee Sapetta 260
550
Sturtevant & David Stewart 80
James Jacobson 40
CADOTTE L.
Gus & Pauline Cup 76
Map Publs, Inc., Rev., 1977
CHIPPEWA COUNTY
Rusk County, Wis.

COMPARABLE R16

Looking Southeast, Comparable in Foreground

Looking West, Comparable
Encompassed in River Bend

COMPARABLE SALES INFORMATION

No. R18

Buyer: Williams

Seller: Estate of Clyde Wallace, Sr.

Description: Short Legal: Part of the E1/2SW1/4 in Sec. 25 and part of Govt Lot 7 in Sec. 36, all in T33N, R7W.

County: Rusk

River: Chippewa River

Date of Sale: May 20, 1981

Type of Document: Land Contract

Size in Acres: 94.5 (43 Tillable Use=Agricultural)

River Frontage: 1,000 feet

Total Price: $37,500

Price per Acre: $396.83

Price per Front Foot: $37.50

Road Access: Yes

Distance to Light Duty Road: NA

Distance to Secondary Road: 0

Average Elevation: 1,055-1,150 feet

Topography: Rising

Percentage of Marsh or Lowland: 15 percent

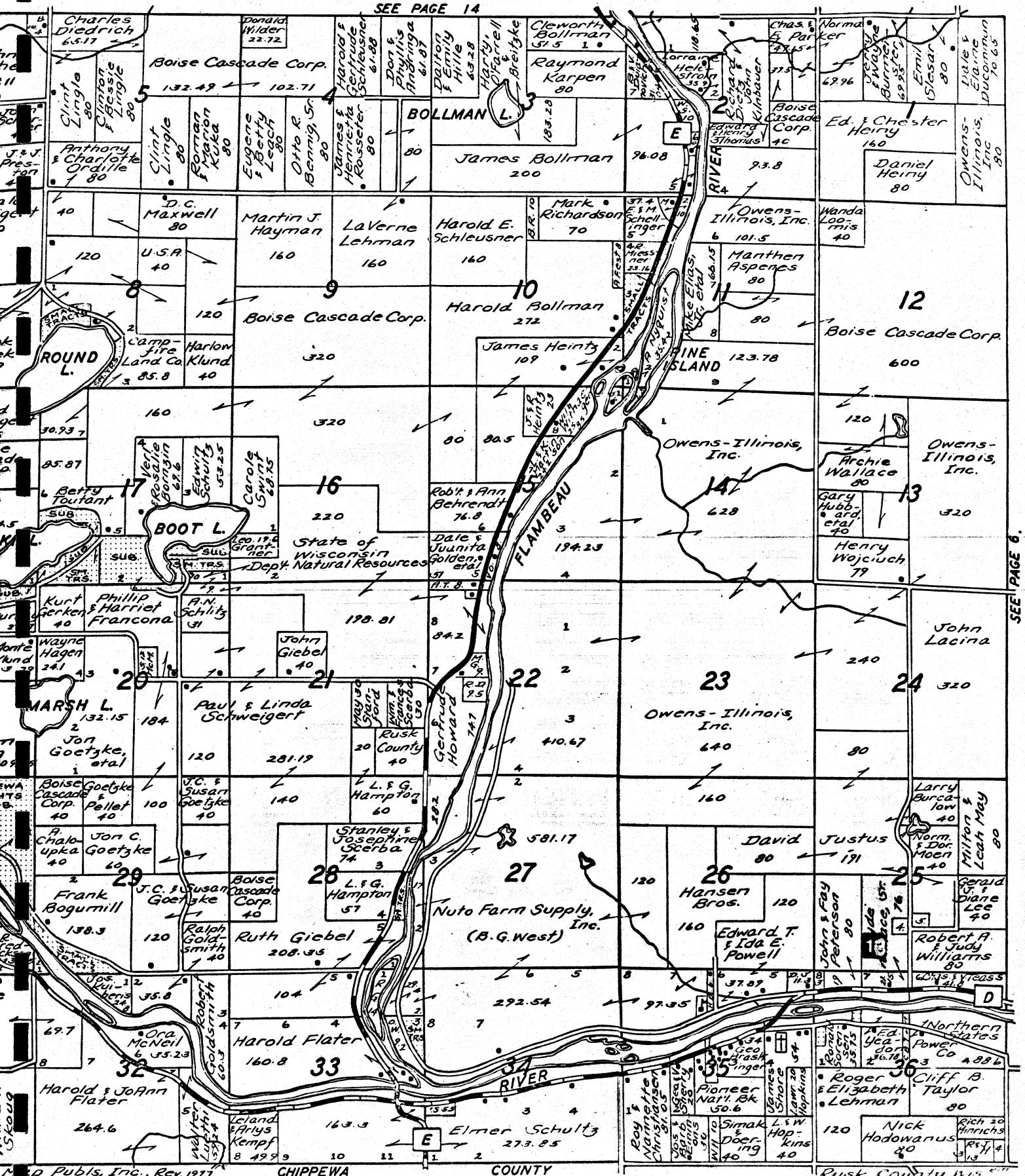
Vegetation: Sparse

Distance to Closest Town: 16 miles to Ladysmith

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

HINGTON RUSK CO T. 33 N. - R. 7 W.



Map Publis, Inc., Rev. 1977

2

COMPARABLE R18

Looking North

Looking West, Comparable in Foreground

COMPARABLE SALES INFORMATION

No. S3

Buyer: Andersen

Seller: Stokes

Description: Short Legal: Metes and bounds description in Govt. Lot 2 in Sec. 9, T40N, R4W.

County: Sawyer

River: E. Fork Chippewa

Date of Sale: August 8, 1979

Type of Document: Warranty Deed

Size in Acres: 70

River Frontage: 1,205 feet

Total Price: $4,500

Price per Acre: $64.29

Price per Front Foot: $3.73

Road Access: No

Distance to Light Duty Road: .65 mi.

Distance to Secondary Road: -

Average Elevation: 1,400 feet

Topography: Relatively flat

Percentage of Marsh or Lowland: 10 percent

Vegetation: Dense

Distance to Closest Town: 20 miles to Winter

Buyer Profile: Not distinguisable

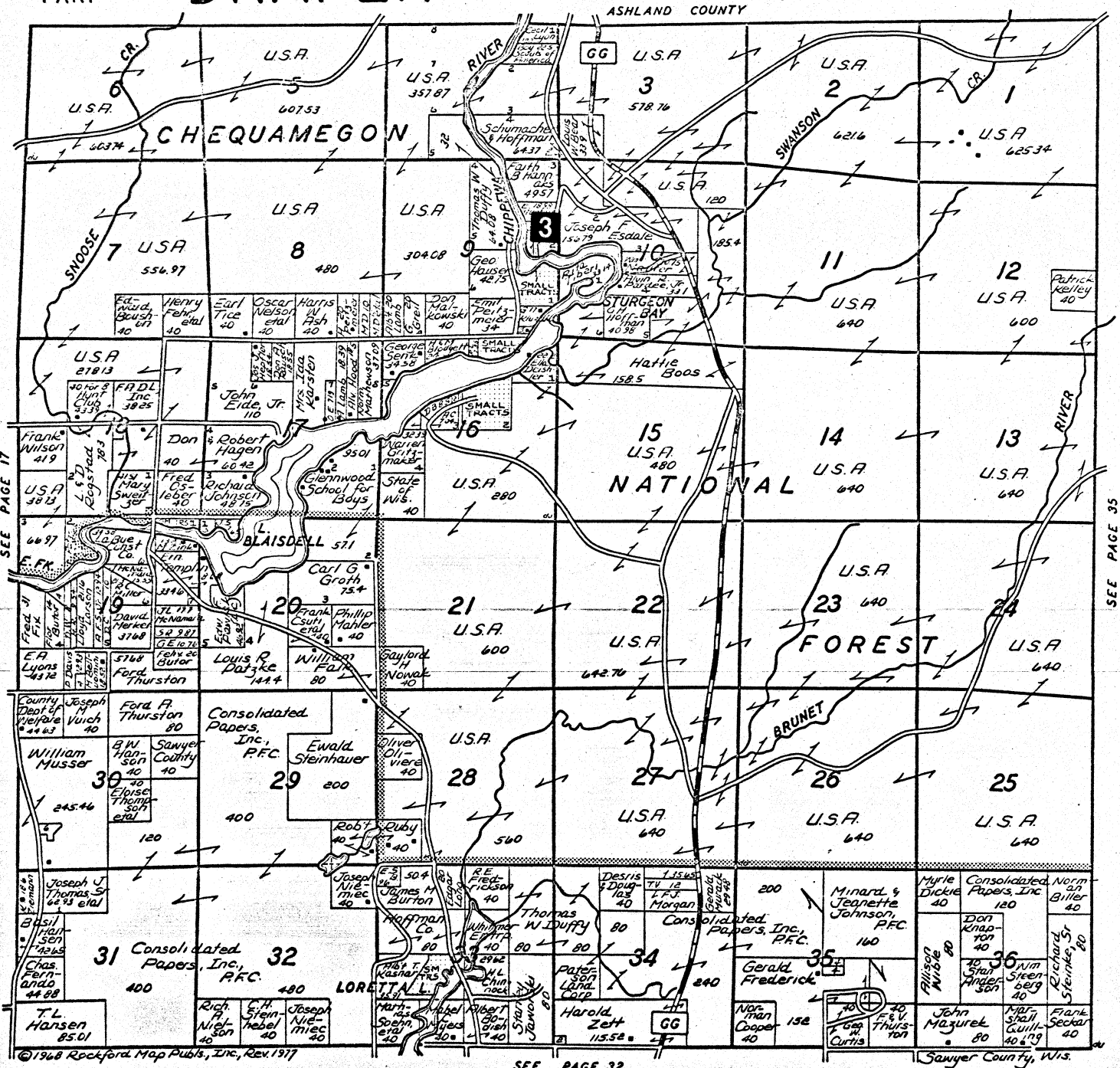
Factors Influencing Purchase Decision: Not stated

SAWYER Co

NORTHWEST PART

DRAPER

T.40N.-R.4W.



COMPARABLE S3

Looking West, Comparable in Center

COMPARABLE SALES INFORMATION

No. S4

Buyer: Kostoff & Enyart

Seller: McCaleb

Description: Short Legal: Govt. Lot 7 in Sec. 24, T40N, R5W, lying south of the river.

County: Sawyer

River: E. Fork Chippewa

Date of Sale: May 1, 1980

Type of Document: Land Contract

Size in Acres: 28

River Frontage: 1,300 feet

Total Price: $24,000

Price per Acre: $857.14

Price per Front Foot: $18.46

Road Access: No (.24 miles)

Distance to Light Duty Road: .5 miles

Distance to Secondary Road: -

Average Elevation: 1,400 foot ridge

Topography: Ridge and swamp

Percentage of Marsh or Lowland: 25 percent

Vegetation: Dense

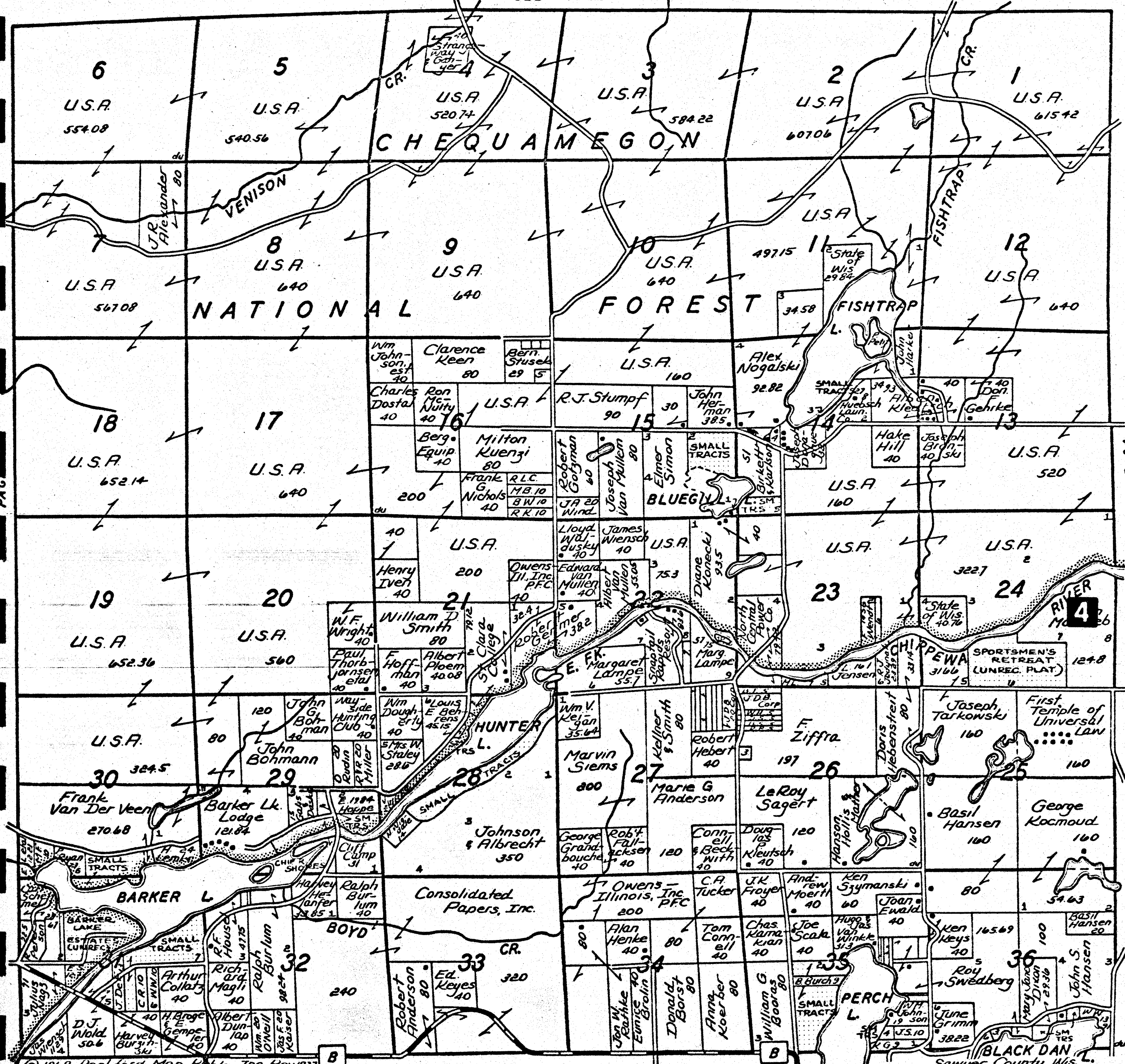
Distance to Closest Town: 14 miles to Winter

Buyer Profile: Future home

Factors Influencing Purchase Decision: Purchased for future year round home site.

NORTHWEST PART WINTER ~~SAWYER Co~~ T.40N.-R.5W.

SEE PAGE 46



SEE PAGE 34

SEE PAGE 16

Sawyer County, Wis.

COMPARABLE S4

Comparable in Foreground

COMPARABLE SALES INFORMATION

No. S5

Buyer: Payne & Dolan, Inc.

Seller: Schuster Construction Co.

Description: Short Legal: The S1/2SE1/4, the SE1/4SW1/4 and Lot 4 in Sec. 32, T38N, R3W.

County: Sawyer

River: N. Fork Flambeau

Date of Sale: May 11, 1979

Type of Document: Warranty Deed

Size in Acres: 142.2

River Frontage: 1,320 feet

Total Price: $27,000

Price per Acre: $189.87

Price per Front Foot: $20.45

Road Access: No (.6 miles)

Distance to Light Duty Road: Distant

Distance to Secondary Road: Distant

Average Elevation: High=1,350 feet

Topography: Gentle hills

Percentage of Marsh or Lowland: 5 percent

Vegetation: Dense

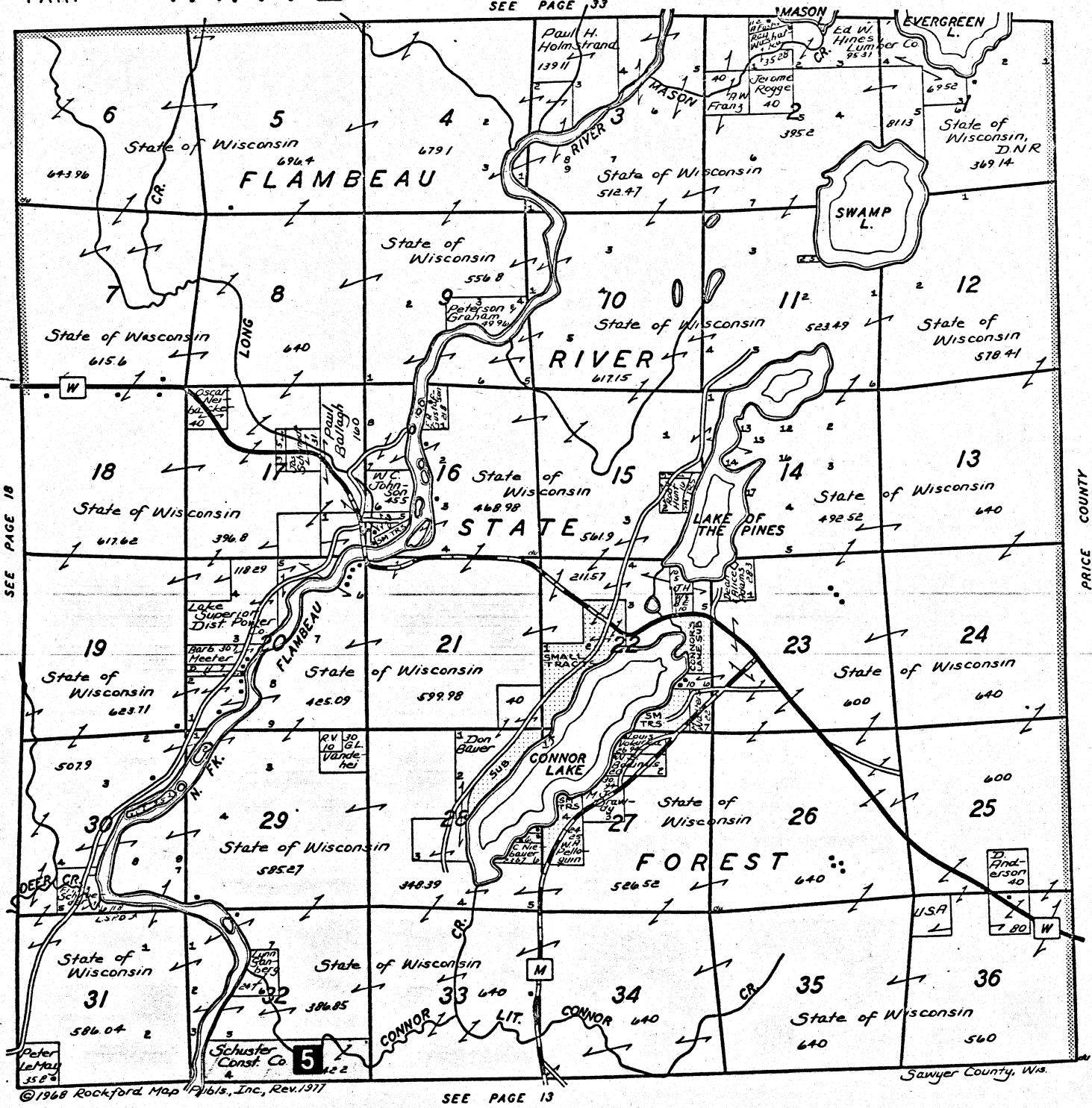
Distance to Closest Town: 23.5 miles to Phillips

Buyer Profile: Business

Factors Influencing Purchase Decision: Purchased as business transaction.

NORTHEAST PART

WINTER SAWYER CO T.38N.-R.3W.



COMPARABLE S5

Looking Northeast, Comparable Just Above Center of Photo

Looking Northwest, Comparable in Foreground

COMPARABLE SALES INFORMATION

No. S6

Buyer: Rankey

Seller: Northern States Power Co.

Description: Short Legal: Govt. Lots 3 and 4 in Sec. 14, T37N, R7W.

County: Sawyer

River: Chippewa River

Date of Sale: May 19, 1977

Type of Document: Warranty Deed

Size in Acres: 86.85

River Frontage: 2,700 feet

Total Price: $12,000

Price per Acre: $138.17

Price per Front Foot: $4.44

Road Access: Yes

Distance to Light Duty Road: 1.15 miles

Distance to Secondary Road: -

Average Elevation: 1,200 feet

Topography: Relatively flat-dry

Percentage of Marsh or Lowland: 5 percent

Vegetation: Dense

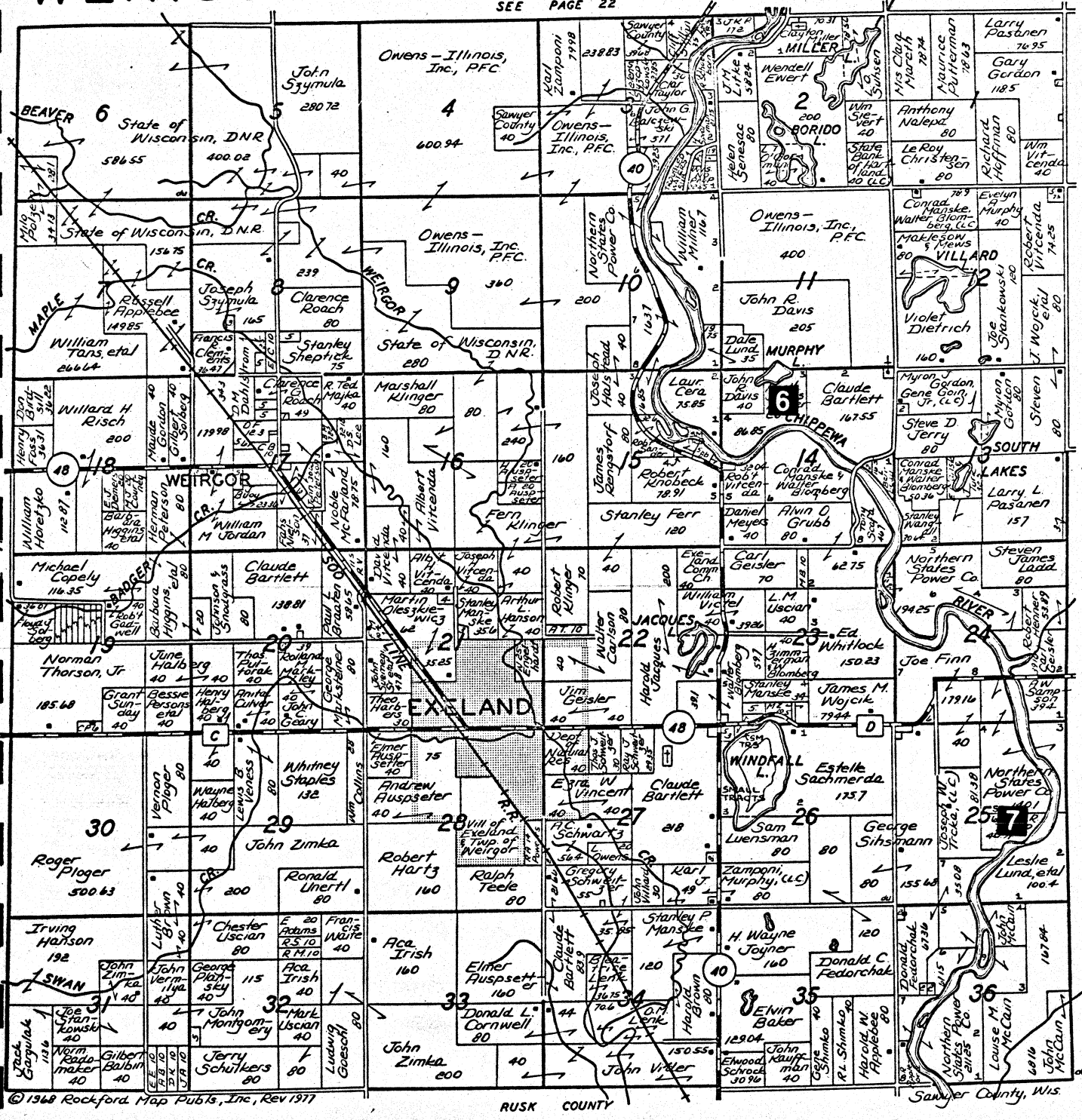
Distance to Closest Town: 17 miles to Bruce or Ladysmith

Buyer Profile: Not distinguishable

Factors Influencing Purchase Decision: Not stated

WEIRGOR — SAWYER Co — T.37N.-R.7W.

SEE PAGE 22



SEE PAGE 10

COMPARABLE S6

Looking West, Comparable in Center
Murphy Lake is in Right Portion of Photo

Looking Southwest, Murphy Lake in Foreground
Comparable in Center of Photo

COMPARABLE SALES INFORMATION

No. S7

Buyer: Hostetler

Seller: Thorp

Description: Short Legal: Lots 4 and 5 recorded in Vol. 7 of Certified Survey Maps, page 391, Survey No. 1531, in Govt. Lot 6 in Sec. 25, T37N, R7W.

County: Sawyer

River: Chippewa River

Date of Sale: October 17, 1980

Type of Document: Warranty Deed

Size in Acres: 2.6

River Frontage: 700 feet

Total Price: $12,500

Price per Acre: $4,807.59

Price per Front Foot: $17.86

Road Access: No (1,000 feet)

Distance to Light Duty Road: 2,000 feet

Distance to Secondary Road: -

Average Elevation: 1,170 feet

Topography: Gentle hills

Percentage of Marsh or Lowland: 5 percent

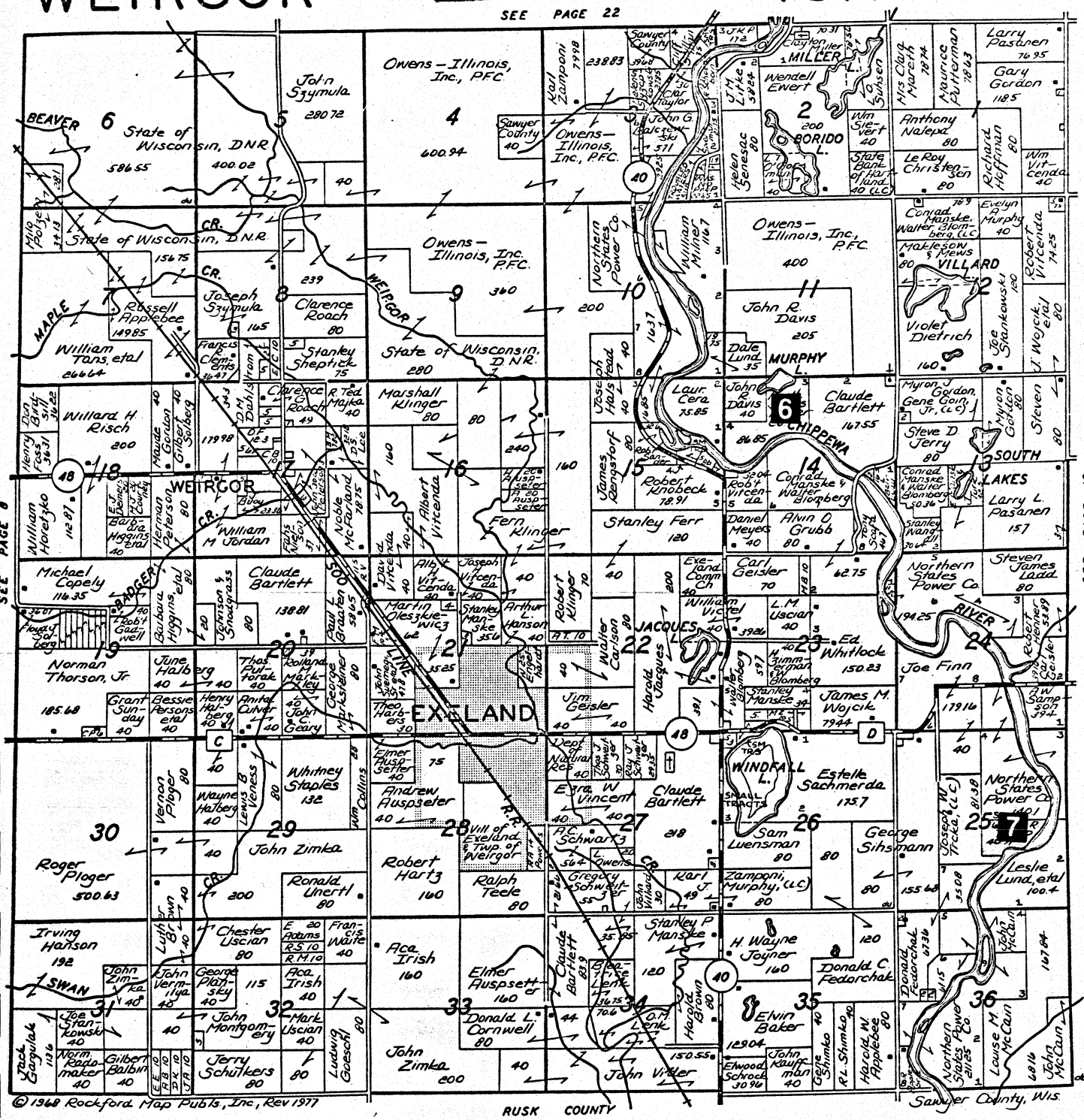
Vegetation: Dense

Distance to Closest Town: 15 miles to Bruce or Ladysmith

Buyer Profile: Investment/Recreation

Factors Influencing Purchase Decision: For investment but with recreational use also.

WEIRGOR — SAWYER Co — T.37N.–R.7W.



COMPARABLE S7

Looking South, Comparable in Center of Photo

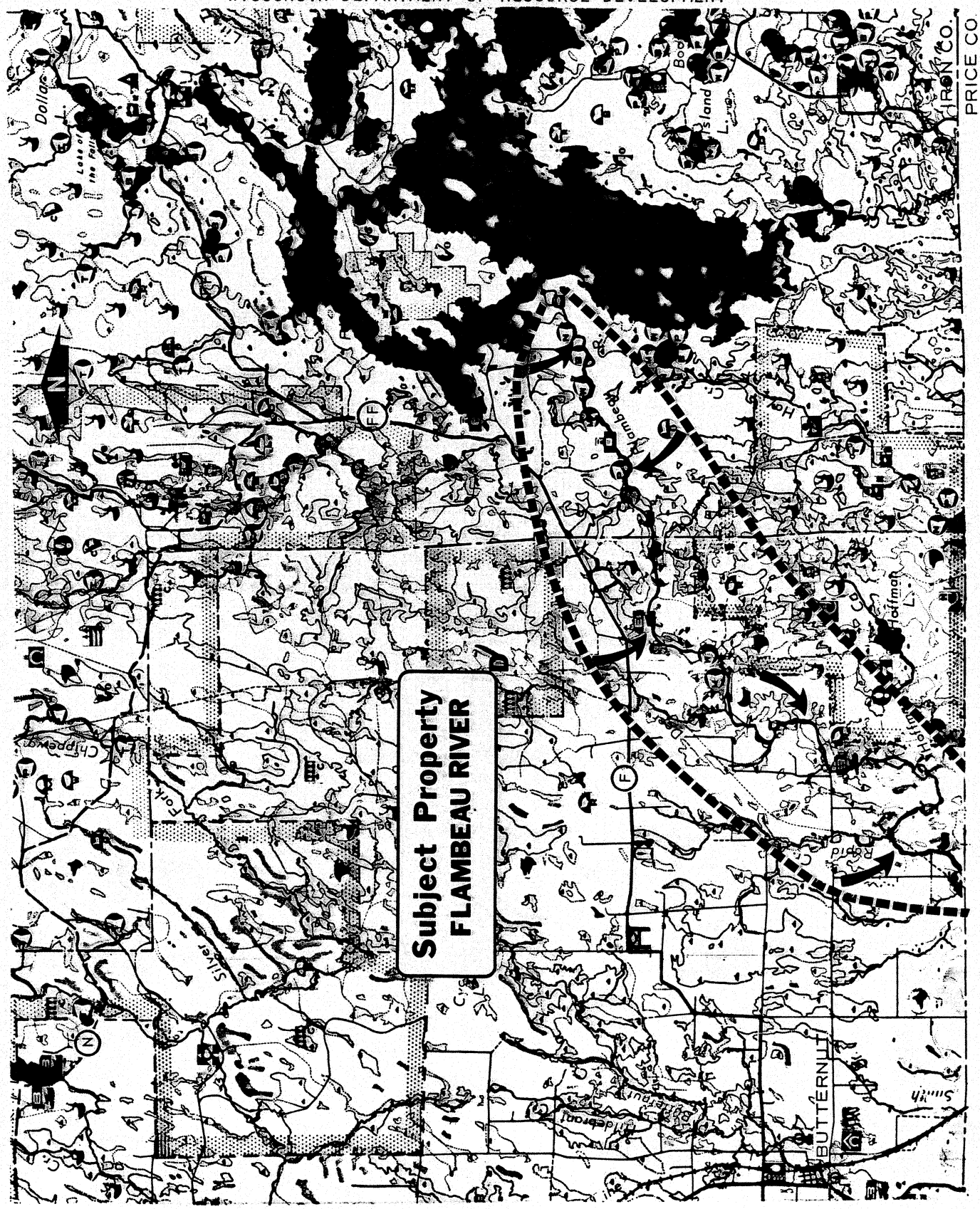
Looking Southeast, Comparable in Center Area,
Below (Northwest of) River

APPENDIX B

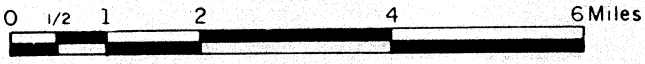
EXHIBITS

EXHIBIT 1

VICINITY MAP OF NORTH BRANCH OF FLAMBEAU
LANDSCAPE RESOURCE INVENTORY
WISCONSIN DEPARTMENT OF RESOURCE DEVELOPMENT



LEGEND



This map should not be considered or used as factual or final authority for any legal or regulatory standpoint because of the natural or man-made changes which may have occurred.

- INTERMITTENT STREAM
- RIVER OR PERENNIAL STREAM
- LAKE
- WETLAND
- SIGNIFICANT TOPOGRAPHY (240' 180' 120' 60')
- ENVIRONMENTAL CORRIDOR
- MAJOR PRIMARY ROAD
- PRIMARY ROAD
- SECONDARY ROAD
- TERTIARY ROAD
- TRAILS
- EXISTING RAILROAD
- ABANDONED RAILROAD
- AIRPORT OR LANDING FIELD
- EXISTING AND PROPOSED PUBLIC AND LEASED LAND
- INDIAN RESERVATION
- COUNTY BOUNDARY
- HIAWATHA PIONEER TRAIL

EXHIBIT 1 (Continued)

EXHIBIT 1 (Continued)

LEGEND

- EXCEPTIONAL GLACIAL REMAINS
- CASTLE ROCK
- BALANCED ROCK
- NATURAL BRIDGE
- CAVE
- CHASM
- MINERAL ORE OUTCROPPING
- RAPIDS, WHITEWATER
- WATERFALL
- EXCEPTIONAL ISLAND
- AESTHETIC AREA
- BEAR
- DEER
- BOBCAT
- WOLF
- RED AND GREY FOX
- BADGER
- BEAVER
- MUSKRAT
- MINK
- OTTER
- HERON
- EGRET
- CRANE
- SWAN
- LOON
- EAGLE
- OSPREY
- FALCON
- RED-TAILED HAWK
- GOSHAWK
- HAWK
- GREAT HORNED OWL
- PRAIRIE CHICKEN
- RUFFED GROUSE
- SHARP-TAILED GROUSE
- WOODCOCK
- GEESE
- DUCK
- STURGEON
- MUSKELLUNGE
- WALLEYE
- (NORTHERN) PIKE
- BASS
- TROUT
- PANFISH
- WILD RICE AREA
- FISH HATCHERY
- EXCEPTIONAL WETLAND
- BATHING BEACH

EXHIBIT 1 (Continued)


SWIMMING FACILITIES


RESERVOIR


LOCK


DAM, FISHWAY, DRAINAGE WAY


COMMERCIAL FISHING


LIGHTHOUSE


OUTFITTING POST


HARBOR OF REFUGE


MARINA


BOATING FACILITIES, RAMP


STATE PARK


COUNTY PARK


STATE FOREST


COUNTY FOREST


OUTSTANDING REFORESTATION PROJECT


STATE RECREATION AREA


WILDLIFE OBSERVATION


OBSERVATION PLATFORM


WILDLIFE HUNTING


WILDLIFE PRESERVE


HUNTING PRESERVE


FIRE TOWER


HISTORICAL MARKER


BARRACKS


OLD MILL

EXHIBIT 1 (Continued)


COUNTY SEAT


HISTORICAL HOME


NATIVE HANDICRAFT (CRAFTSMAN'S SHOP)


OLD CEMETERY


GHOST TOWN


HISTORICAL FOLK LORE


SUGAR BUSH


BERRY PICKING


OLD MINE


UNUSUAL CROP


LOG HOME BARN–OCCUPIED


LOG HOME BARN–UNOCCUPIED


FRAME STRUCTURE PRIOR TO 1860

ASSOCIATED WITH FAMOUS PERSON OR EVENT


STONE STRUCTURE PRIOR TO 1860 ETC.


OUTSTANDING SOIL CONSERVATION PROJECT,

FARM CONSERVATION


ORCHARD


BLACKSMITH SHOP


PIONEER CHURCH


ONE-ROOM SCHOOL


GENERAL STORE


ICE SKATING SHELTER


COUNTY FAIR


OUTSTANDING BUILDING

EXHIBIT 1 (Continued)


SKI LIFT


SKI ROPE TOW


SKI SLOPE STRUCTURE


SNOW PLAY AREA: SLEDDING, ETC.


MUSEUM


LOCAL FESTIVAL, CELEBRATION


ANTIQUE SHOP


AN INTERESTING INDUSTRY OPEN FOR VISITS


MODERN MILL


MODERN MINE


POWER PLANT


FARM STRUCTURE FOR SUMMER OCCUPANCY


GOLF COURSE


FIRE TRAIL AND BREAK


CANOE ROUTE


SKI TRAIL


SKI TRAIL (CROSS-COUNTRY)


HIKING TRAIL


BRIDLE TRAIL


NATURE TRAIL


TRAIL SHELTER


PICNIC AREA


CAMPSITE


YOUTH CAMP

EXHIBIT 2

NORTH BRANCH OF FLAMBEAU RIVER FROM
WISCONSIN'S NORTH CENTRAL CANOE TRAILS

Navigation is more difficult on the Flambeau Flowage than it is on an ordinary lake or river. The flowage is subject to variations in water level because it is used to regulate flow to the lower river. Channels and bays open at one time of the year may be grass-covered at another time. The maze of islands, bays, and channels makes it possible to become temporarily lost. Know your route and carry a compass and map.

TURTLE-FLAMBEAU, The Falls at County Highway "FF" to Turtle Dam (8½ miles).

This trip is mostly lake canoeing on the west arm of Flambeau Flowage. Shorelines are mostly wild and scenic. Fishing can be superb. The trip usually takes about 6 hours. Southerly winds may increase the travel time.

Put-in is below the Falls at County Hwy. FF. There is a county park here on the right bank.

Downstream a half mile, the river widens into a long bay of the flowage. This is Sturgeon Bay. The route on the map follows the old drowned Turtle River to the dam.

There is a developed campsite on an island just left of mid-channel about 4 miles below the put-in. There is a picnic area on the left bank a quarter mile further. Either place makes a good stop-over for lunch.

About where the route turns southeast to the dam, you pass over old Bastine Lake. This is one of the ten or so lakes that were flooded by the impoundment.

Those canoeists not wishing to continue on down the Flambeau River make wish to **take-out** at the public landing on the right shore as you leave the Bastine Lake area. The location is about 2 miles from the dam.

The best **portage route** at the dam is over the dike about 500 feet west of the gates. A carry of about 200 feet leads back to the water. Looking down river at the end of the portage, you can see the remains of an old coffer dam where logs were decked for the spring drive.

Guide left into the main channel of the river below the dam. There are two rapids before the landing. The first is low hazard but watch the rocks. The second is more of a challenge. It drops 6 feet in about 100 yards and is rocky.

Take-out and public boat landing are just below the second rapids on the right bank.

MANITOWISH-FLAMBEAU ROUTE, Murray Landing to Turtle Dam (9½ miles).

This trip is mostly lake canoeing on the Flambeau Flowage. Along the route are many developed campsites for public use. The trip gives you a look at a good share of the flowage. The route shown on the map is along the old drowned Flambeau River and Baraboo Lake. The trip takes about 7 hours.

Put-in is at Murray's Landing which is reached by town road from Manitowish.

The first mile and a half is on a west-southwest course. After passing the first large island, the main route is northwest for two miles. With the map and compass, you can figure out some shortcuts or side trips.

Bonies Mound is the last resting place for a lover of the wilderness. Bonie fished and camped this area most of his life. He requested that his ashes be scattered on these mounds after his death. It was done, hence the name.

There are several good campsites on **Hot Dog Island.** The second site from the north end has a good well.

The Manitowish, Turtle, and Flambeau routes join at the Turtle Dam about 1½ miles southwest of Hot Dog Island. Take-out, portage route, and river below the dam are described for the Turtle-Flambeau route (above).

FLAMBEAU RIVER CANOE TRAIL

Sheet F-8
Turtle Dam to Park Falls
(18 Miles)

This trip on the upper Flambeau is fast, exciting and through some beautiful country. Water levels are usually good for canoeing except during prolonged dry weather. There are many good rapids to run and fishing is excellent for bass, musky, and walleye. Eagles are occasionally seen along the river. Driftwood is unusually abundant because of the big flowage above. The entire trip requires about 6 hours by canoe.

Usual **put-in** is at the public landing on the right bank one-half mile below Turtle Dam (about 15 miles northeast of Park Falls). For a mile, the river is a series of fast rapids. The rock formations and wooded shorelines are very scenic.

After two low-hazard rapids, big and dangerous **Notch Rock Rapids** comes into view. Take a look at this one; there's quite a bit of equipment in the river that belongs to people who didn't. The river narrows down to about 25 feet and drops 6 feet in 100 yards. Stay to the center or right-center and keep your canoe moving fast and well under control. Don't let the fast water slam you against the rock wall on the outside of the bend. As you near the bottom, go directly between a big rock on the right side and another in the middle of the river.

There is a campsite just below the rapids. Fishing is excellent in the deep pools.

Island Rapids is about one-quarter mile below Notch Rock. Stay to the left around the island and ease into 150 yards of fast and rocky whitewater. The right channel at the island is strictly "no-go", it's shallow and there's an old log boom from the 1880's in there. It was placed to keep log drives from jamming in the channel.

Below Island Rapids, the current is medium to medium-fast with frequent riffles and a few low rapids. **Flat Rapids** is wide, fast and easily run. It's three miles to **Pete's Landing.** Drinking water is available there.

Bear Skull Rock, named after its shape, stands in the center of the river ¾-mile below Pete's Landing. A cedar tree grows on the rock. Local legend has it that an Indian had a fight with a bear here and that one of the early explorers planted the tree.

In the next three miles down to **Stangle Landing,** the current is medium-fast with three rated rapids. None are especially difficult. **Quinn Rapids** is best run near the center with lots of speed. Watch for a large rock below **Stubb's Rapids.**

Old Bridge is a location where an old logging bridge spanned the river. Little evidence of the structure remains.

CONTINUED 5

EXHIBIT 2 (Continued)

Sheet F-8

There are eight rapids in the two miles below Old Bridge. The water is very fast in places and you will have to dodge many boulders. The approximate routes through the first five rapids are well shown on the detail map. The last three present no serious problems.

The slow water of **Park Falls Flowage** begins below First Rapids and continues to the dam in town. The flat water lasts for about 5 miles.

Well documented accounts indicate that **Old Abe**, the famed Wisconsin Civil War eagle, was captured in one of the sloughs about midway along the flowage.

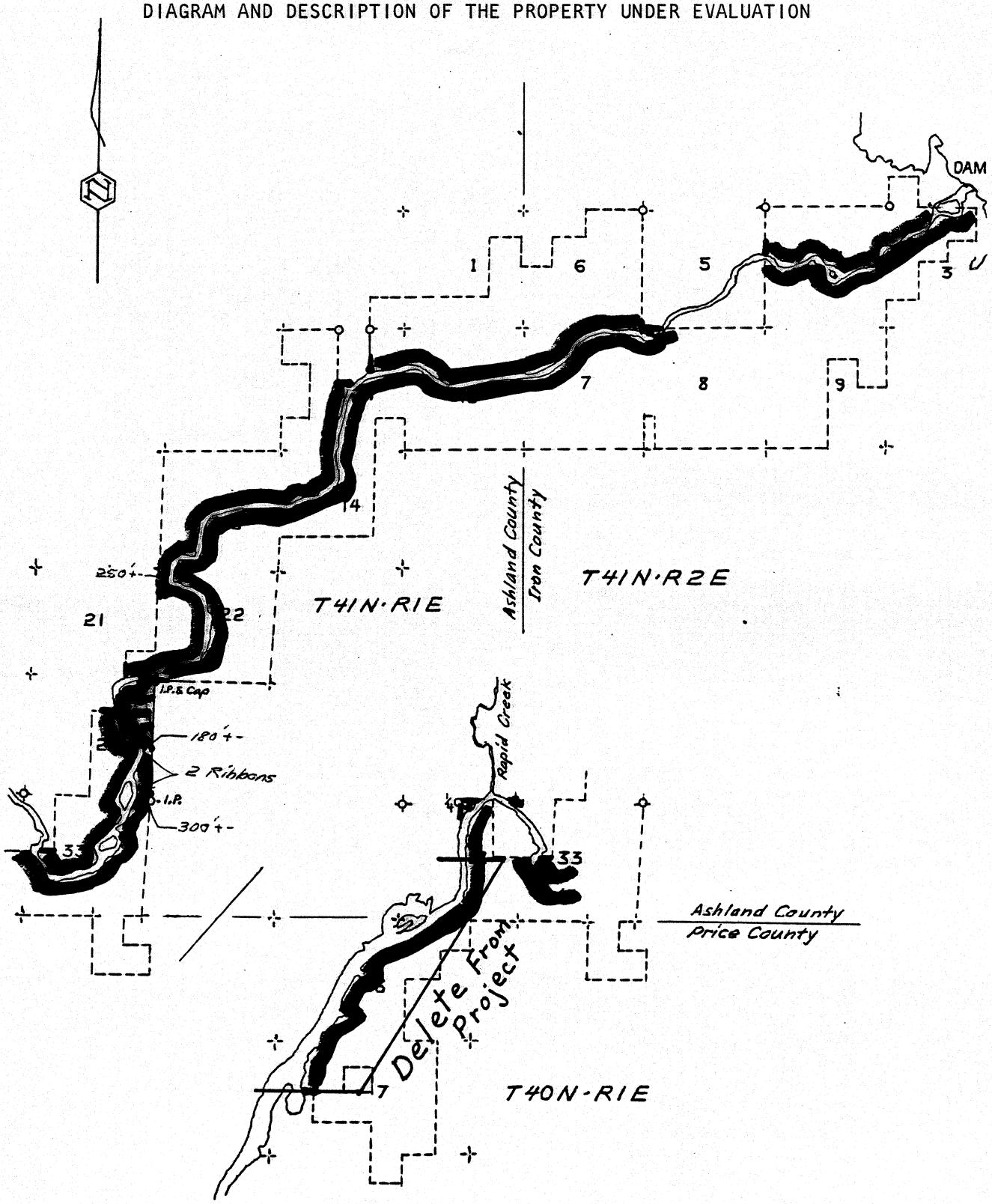
Take-out can be at several locations where roads come close to or parallel the flowage along both shores.

There is a quarter-mile **portage** where the river runs through the mill at Park Falls. Best route is along the left shore. Best portage around the lower dam at Park Falls is on the right side. There is swift water and good canoeing between the dams.

THE SMALL MAP ABOVE JOINS TO MAIN ROUTE HERE

EXHIBIT 3

DIAGRAM AND DESCRIPTION OF THE PROPERTY UNDER EVALUATION



RED - 3 Ribbons on Cor's. or Stakes mark points on River bank

EXHIBIT 3 (Continued)

N O T I C E

The attached maps indicate the actual location of the Flambeau River in relationship to the location as established by Original Government Survey.

EXHIBIT 3 (Continued)

SEC. 3, T. 41 N. - R. 2 E.

IRON COUNTY, WIS.

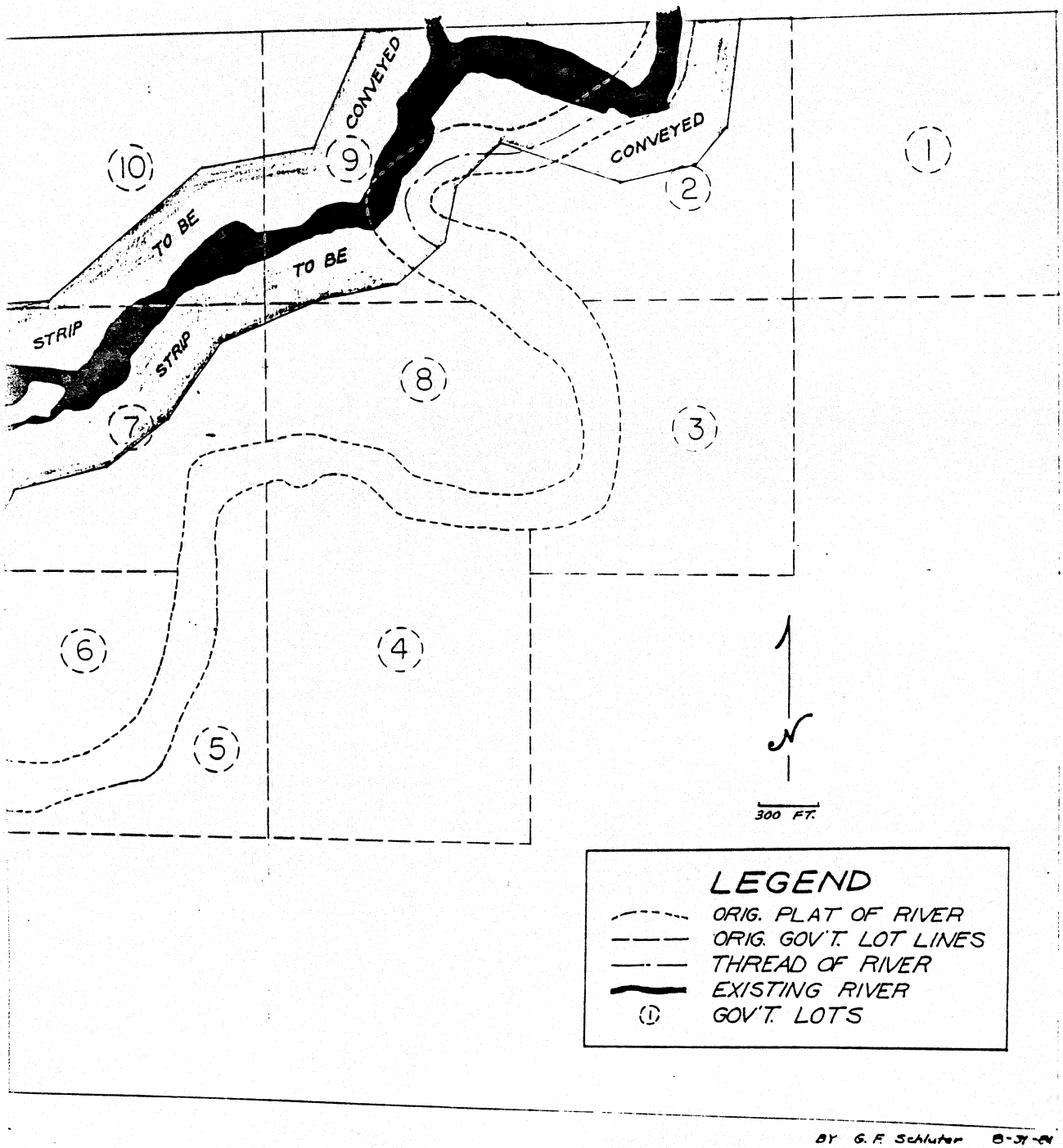
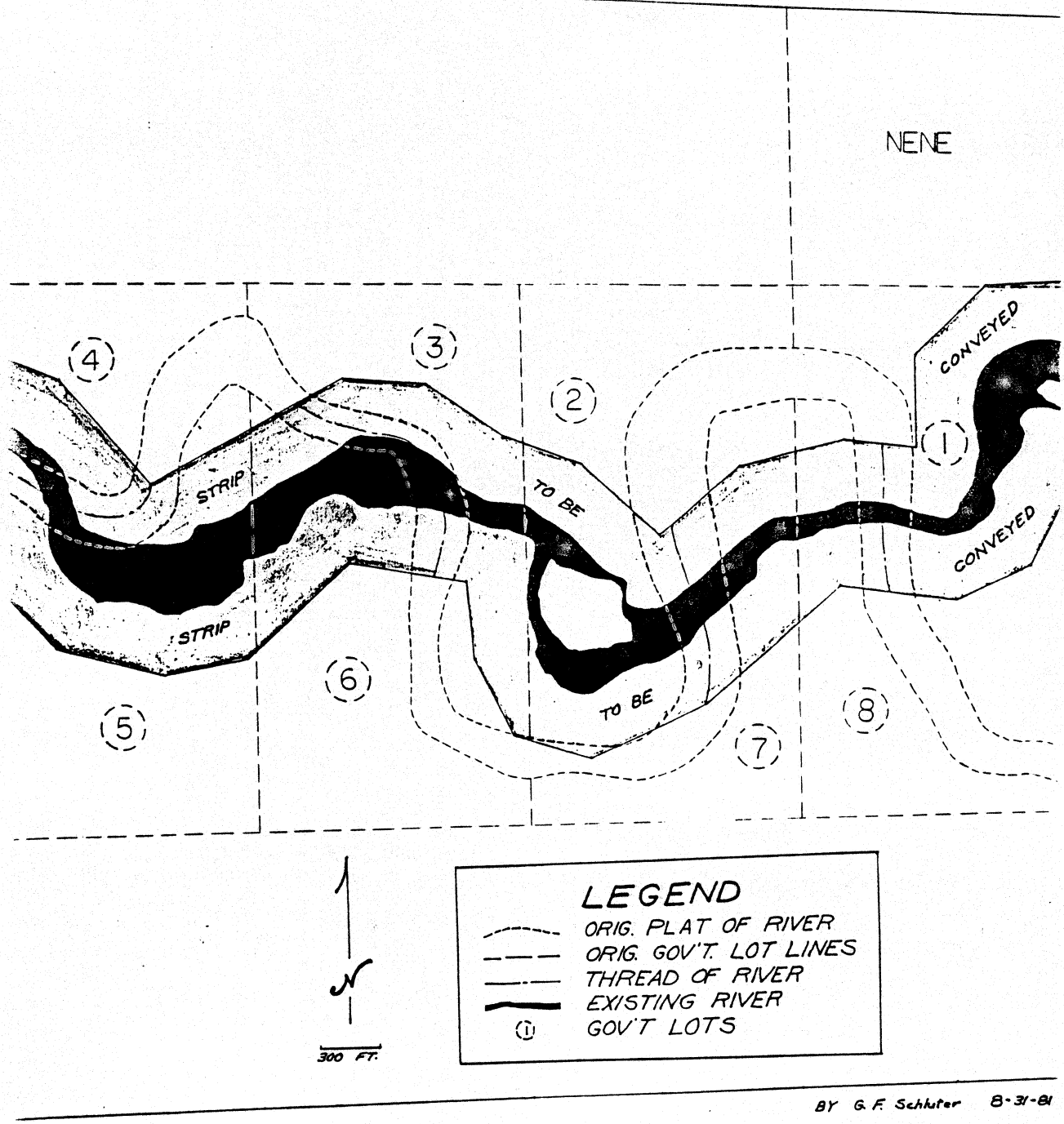


EXHIBIT 3 (Continued)

SEC. 4, T. 41 N. - R. 2 E.

IRON COUNTY, WIS.



BY G. F. Schluter 8-31-81

EXHIBIT 3 (Continued)

SEC. 6 and 7 T. 41 N. - R. 2 E.

IRON COUNTY, WIS.

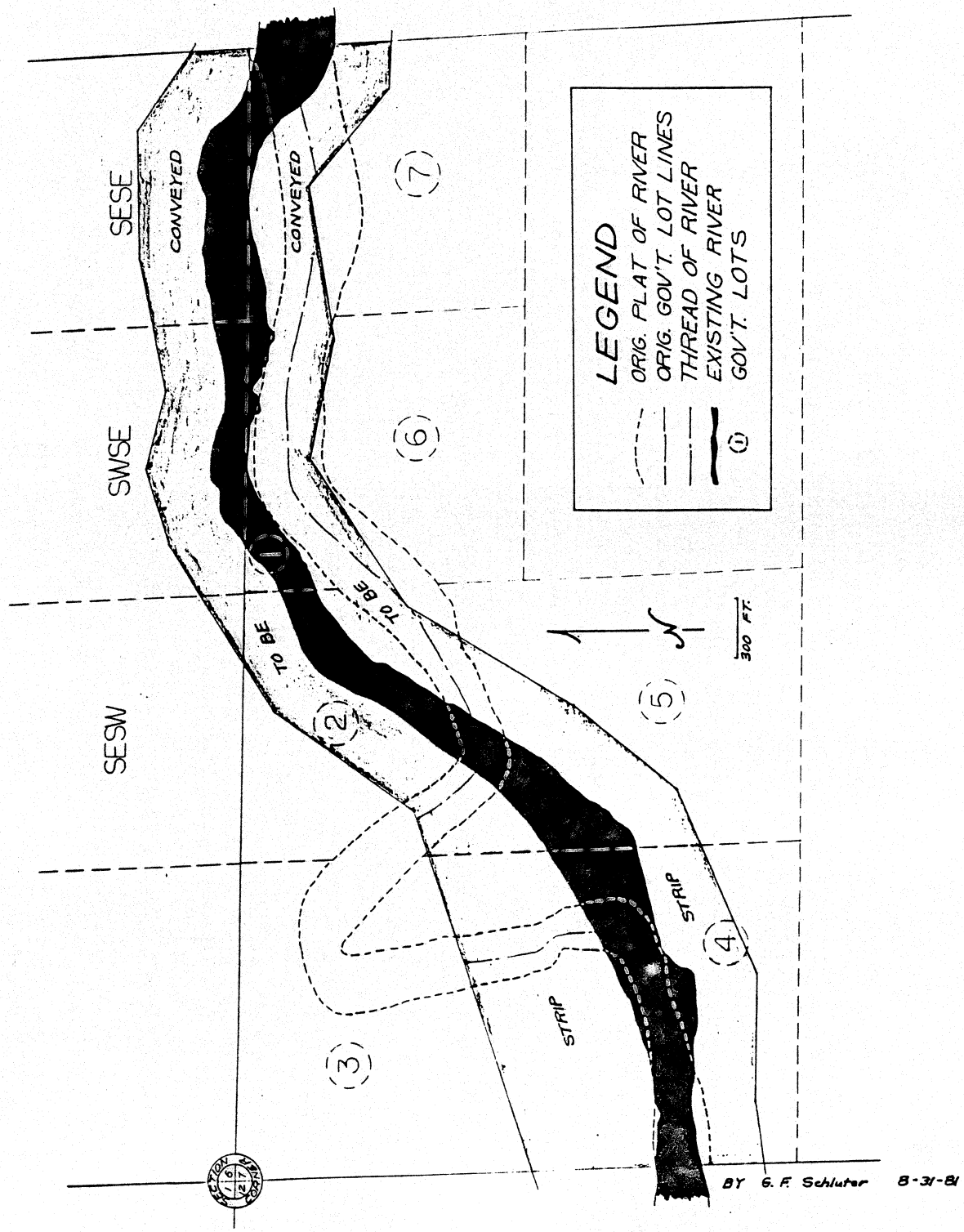


EXHIBIT 3 (Continued)

SEC. 8, T. 41 N. - R. 2 E.

IRON COUNTY, WIS.

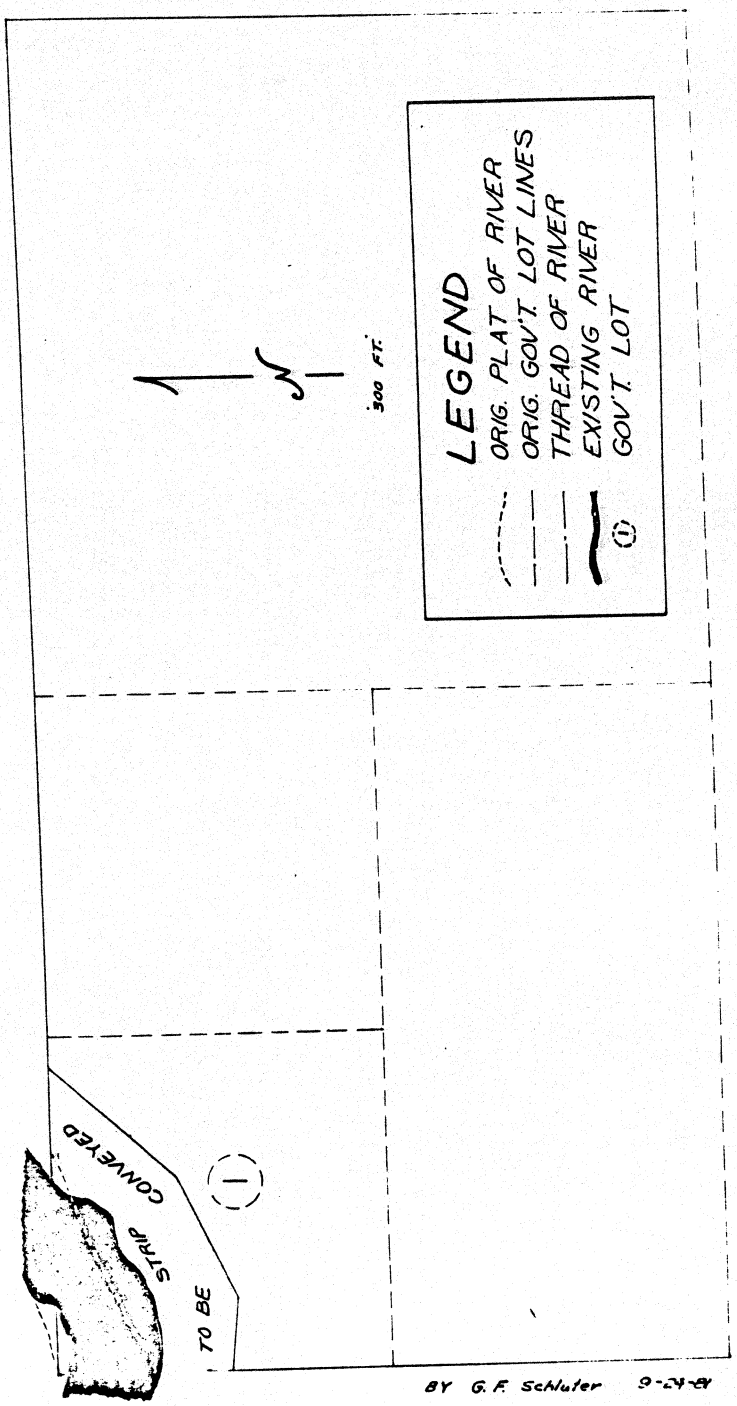
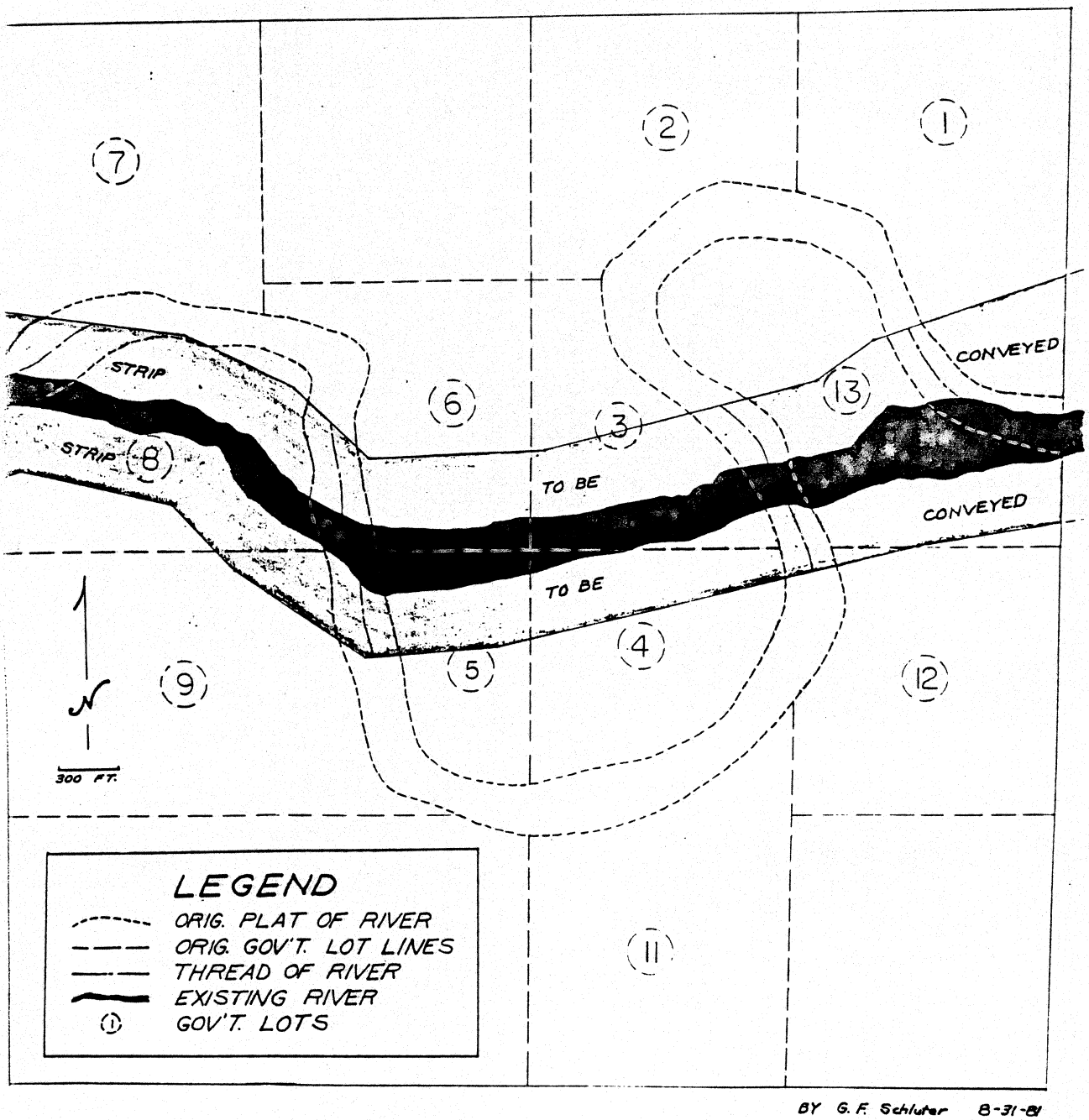


EXHIBIT 3 (Continued)

SEC. 12, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.



BY G. F. Schluter 8-31-81

EXHIBIT 3 (Continued)

SEC. 11, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.

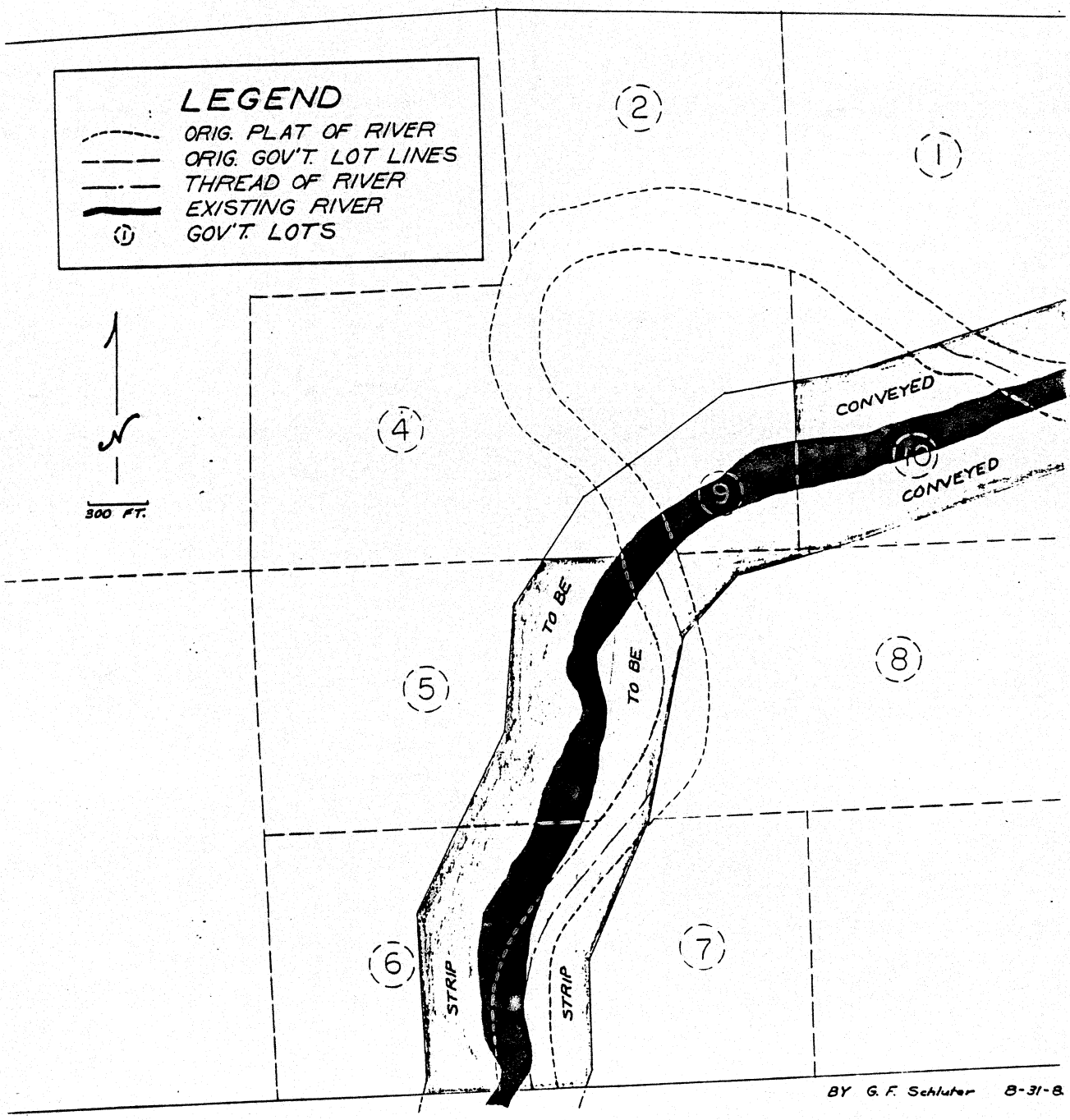
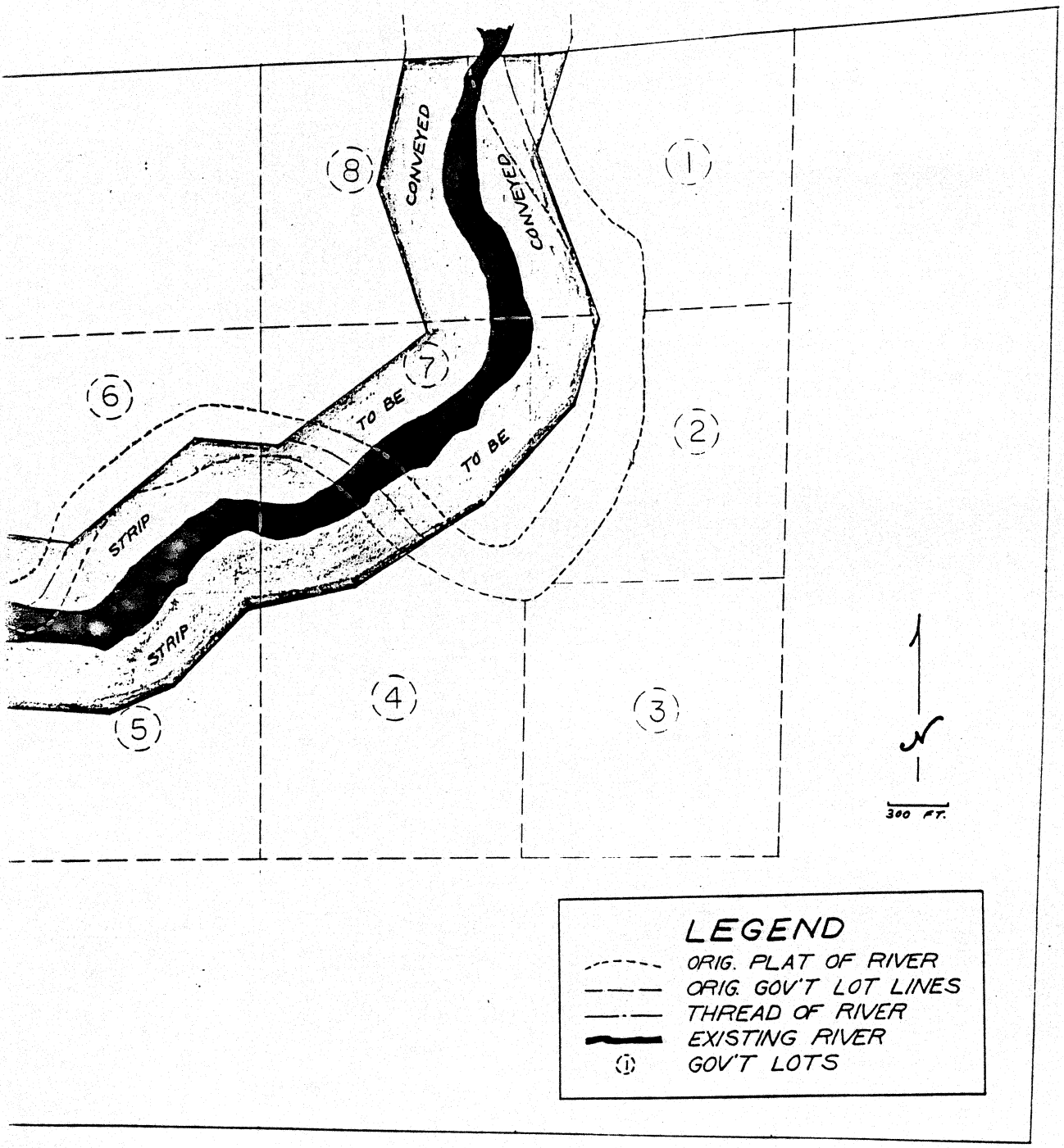


EXHIBIT 3 (Continued)

SEC. 14, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.



BY G. F. Schluter 8-31-81

EXHIBIT 3 (Continued)

SEC. 15, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.

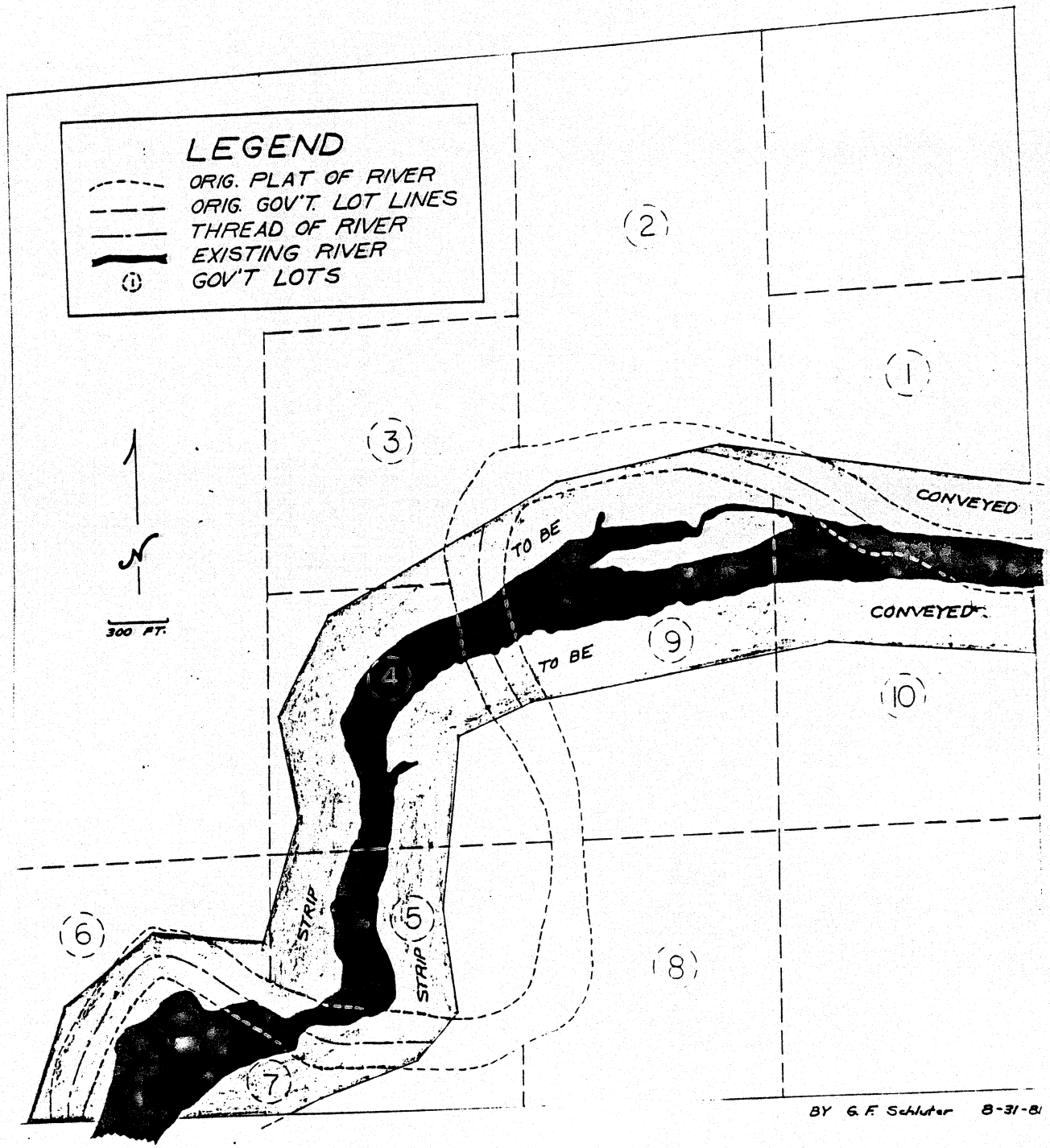
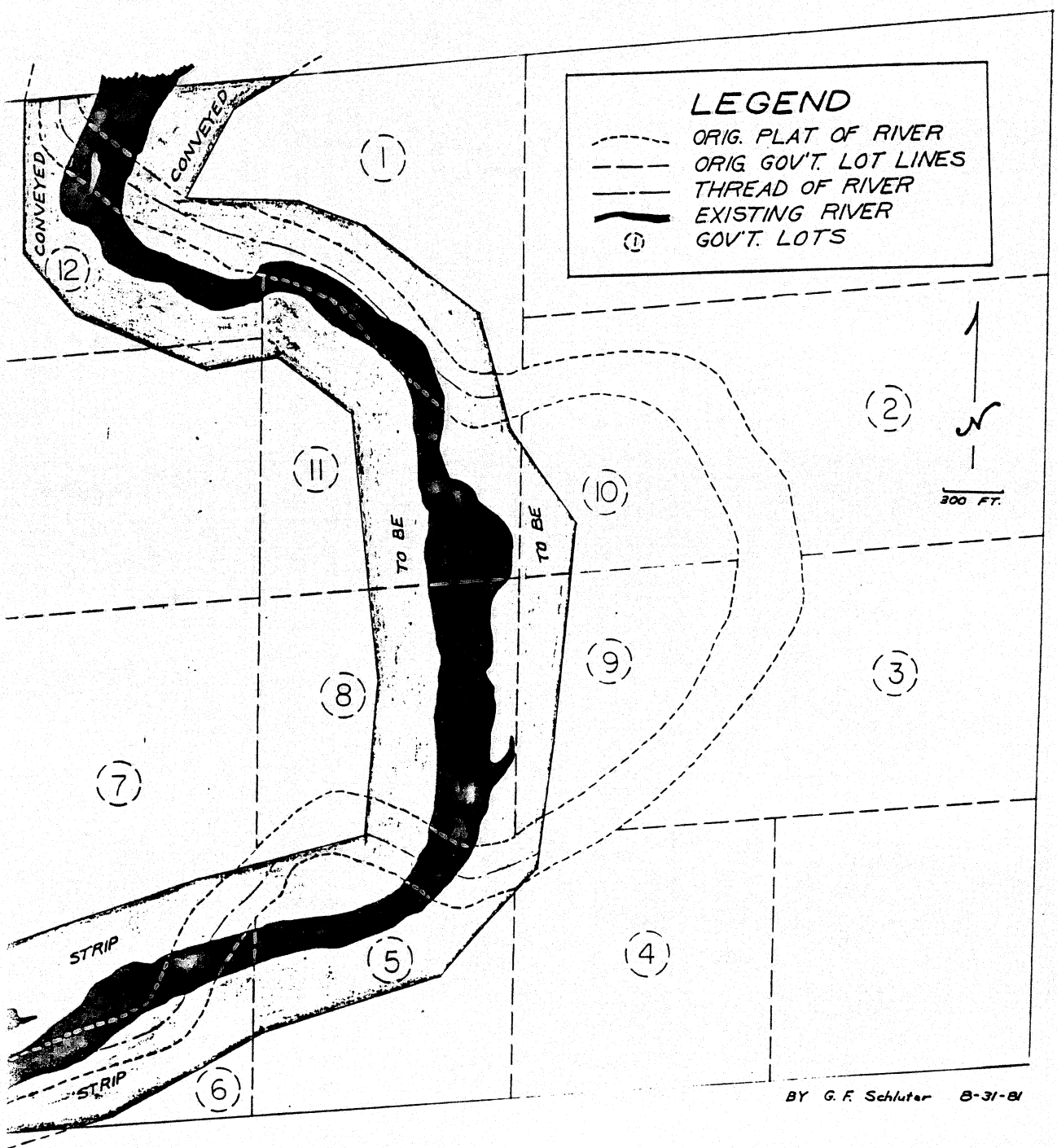


EXHIBIT 3 (Continued)

SEC. 22, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.



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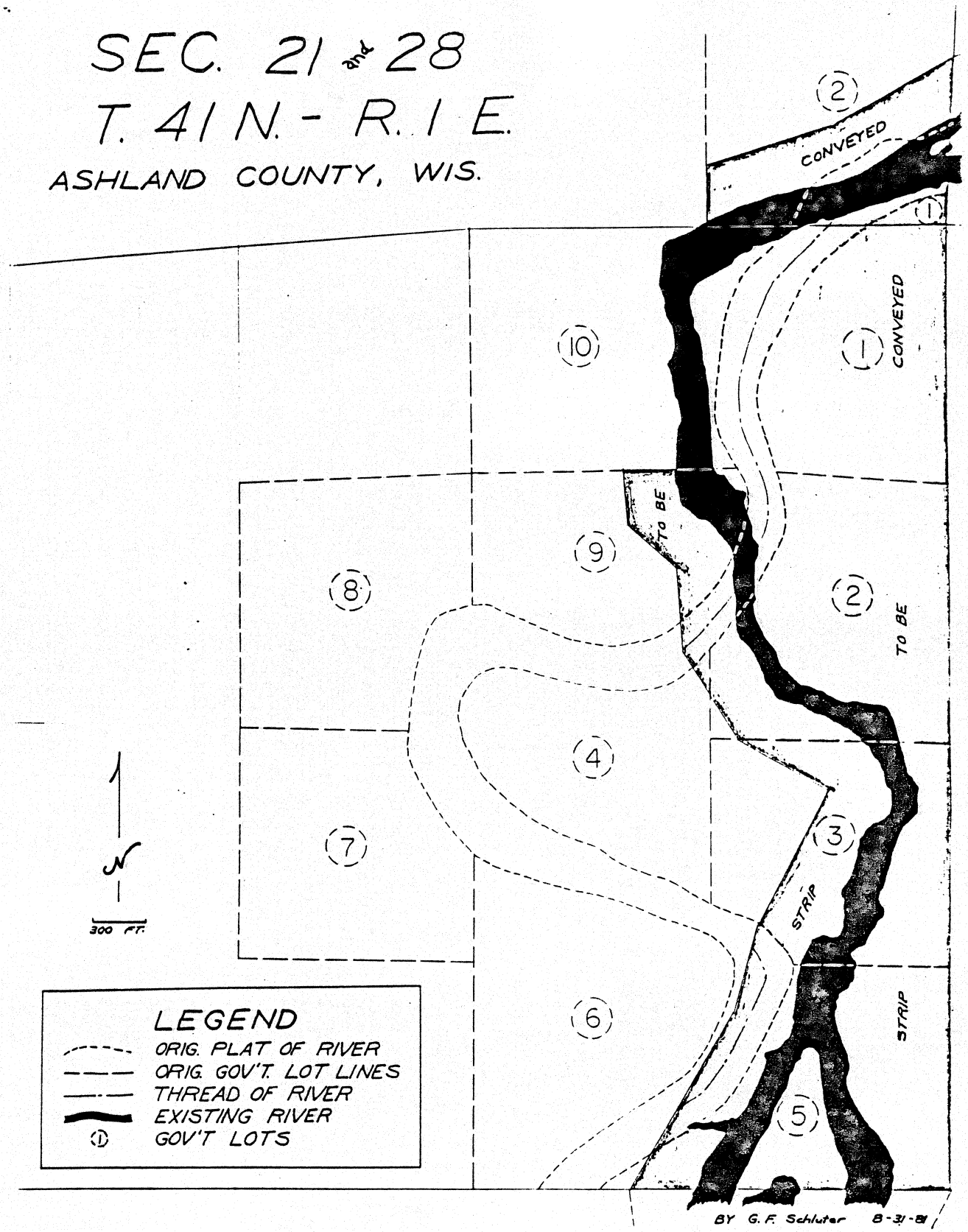
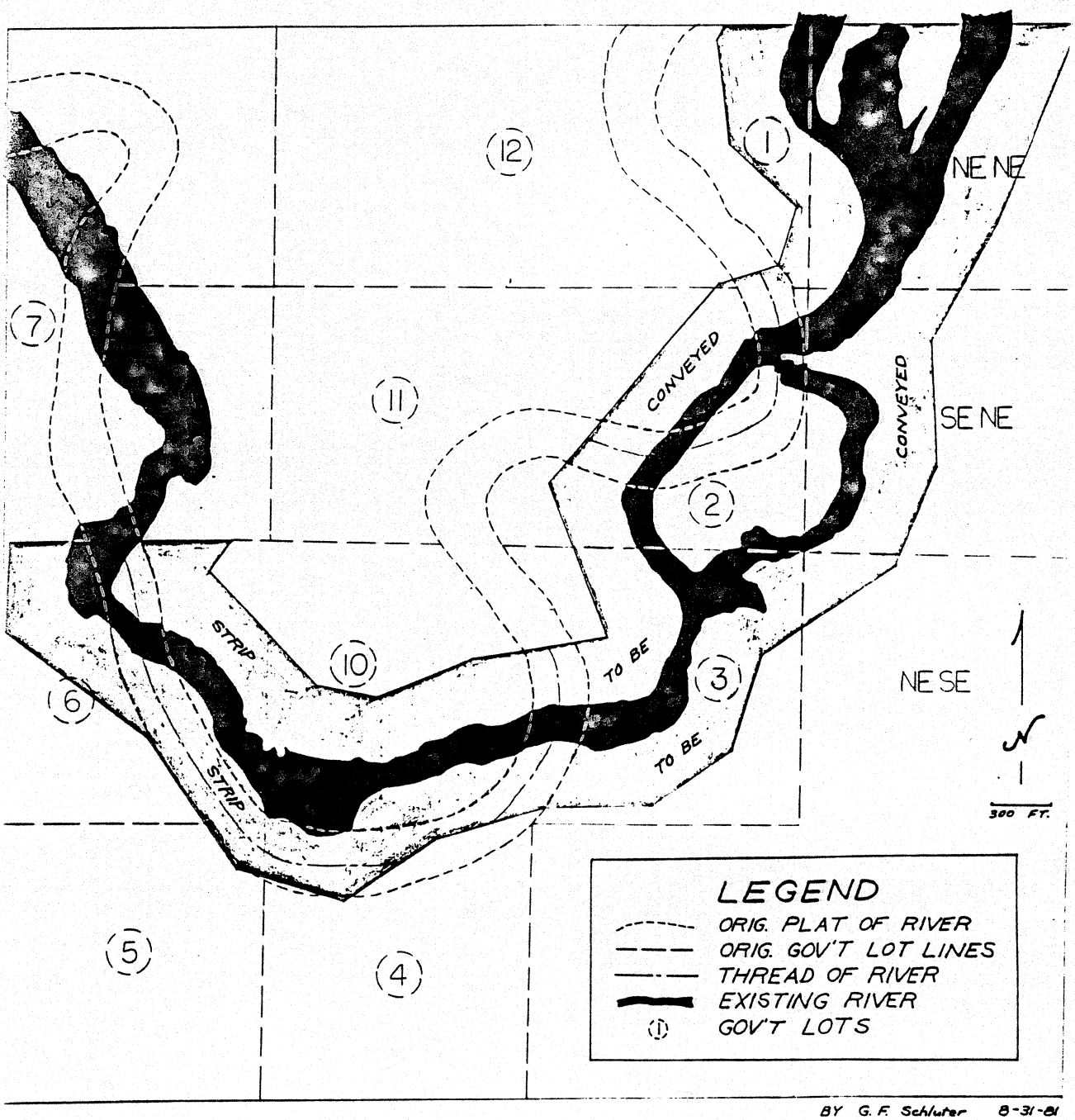


EXHIBIT 3 (Continued)

SEC. 33, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.



BY G. F. Schluter 8-31-81

EXHIBIT 3 (Continued)

SEC. 32, T. 41 N. - R. 1 E.

ASHLAND COUNTY, WIS.

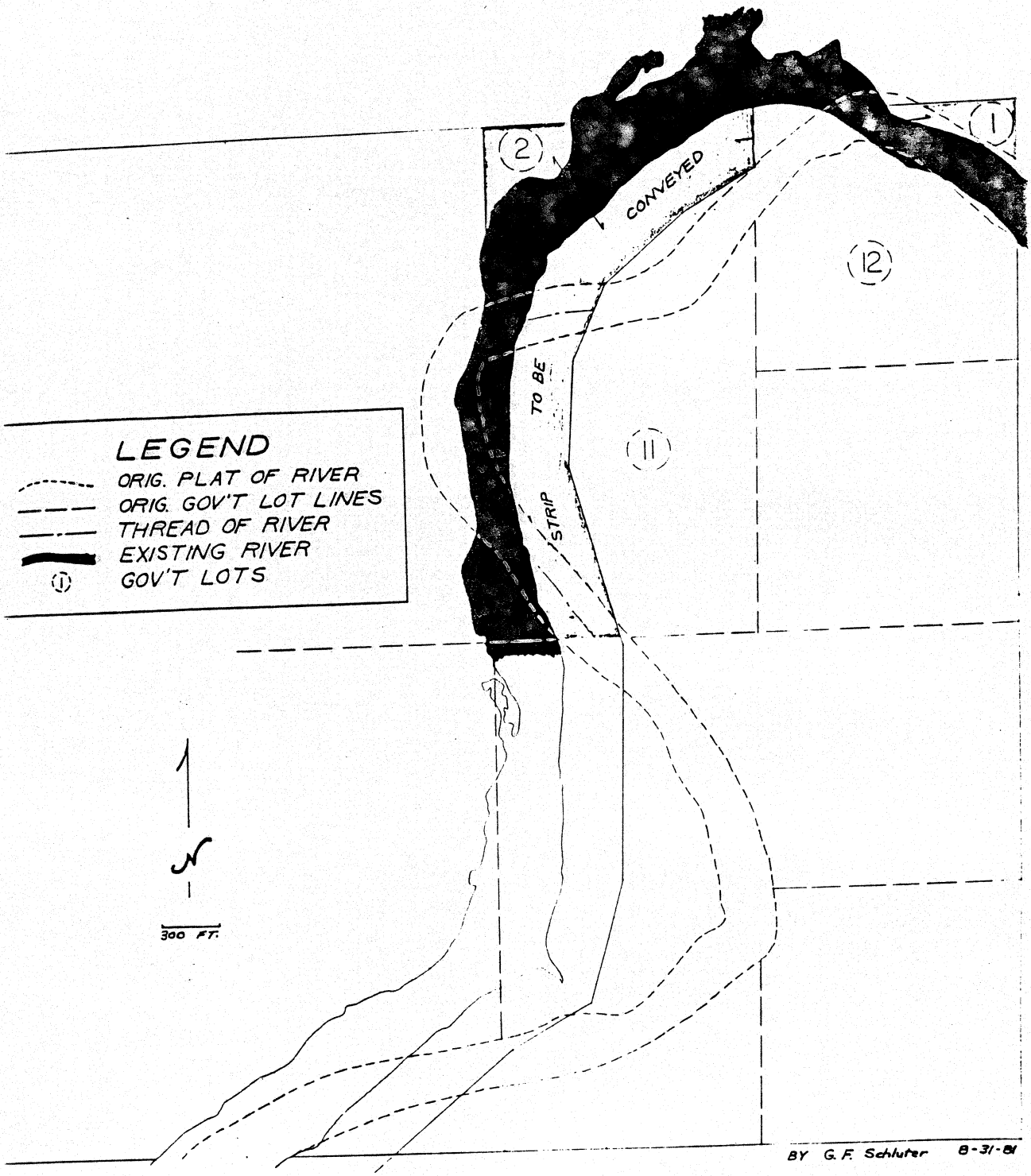


EXHIBIT 4

ACREAGE DESCRIPTION OF PROPERTY TO BE CONVEYED

Owens-Illinois, Inc. to Nature Conservancy

Acreage by Description

Description	Acres Conveyed	Total Acres	Acres Remaining
Iron County			
Sherman Township			
T.41N.-R2E., Sec. 3			
Lot 2	8.80	33.76	24.96
" 8	.25	31.20	30.95
" 9	23.00	36.76	13.76
" 7	14.75	35.50	20.75
" 10	9.45	40.97	31.52
T.41N.-R2E., Sec. 7			
Lot 1	12.55	14.30	1.75
" 2	14.65	26.70	12.05
" 3	18.55	48.20	29.65
" 4	19.70	21.34	1.64
" 5	14.40	46.70	32.30
" 6	4.95	21.50	16.55
" 7	4.25	24.40	20.15
T.41N.-R2E., Sec. 8			
Lot 1	8.40	37.30	28.87
Sub-total, Sherman Twp.	153.70		
Mercer Township			
T.41N.-R2E, Sec. 4			
Lot 1	21.40	41.40	20.00
Lot 2	17.60	35.20	17.60
Lot 3	12.80	28.80	16.00
Lot 4	7.15	17.20	10.05
Lot 5	18.55	42.90	24.35
Lot 6	11.85	41.00	29.15
Lot 7	8.75	24.30	15.55
Lot 8	6.65	29.60	22.95

EXHIBIT 4 (Continued)

Description	Acres Conveyed	Total Acres	Acres Remaining
T.41N.-R2E., Sec. 6			
SESW	.95	40.00	39.05
SWSE	9.70	40.00	30.30
SESE	10.90	40.00	29.10
Sub-total, Mercer Twp.	126.30		
Ashland County:			
Agenda Township			
T.41N.-R1E., Sec. 12			
Lot 1	8.10	47.10	39.00
" 3	9.20	23.30	14.10
" 4	7.85	28.50	20.65
" 5	5.70	17.50	11.80
" 6	7.60	30.00	22.40
" 7	1.90	46.50	44.60
" 8	21.40	28.20	6.80
" 9	4.50	54.00	49.50
" 12	.60	38.00	37.40
T.41N.-R1E., Sec. 11			
Lot 1	3.55	41.60	38.05
" 5	18.05	56.40	38.35
" 6	12.35	38.00	25.65
" 7	8.30	32.50	24.20
" 8	3.35	54.40	51.05
" 9	3.40	3.40	0.00
" 10	17.15	30.50	13.35
T.41N.-R1E., Sec. 14			
Lot 1	2.15	32.50	30.35
" 4	8.50	48.80	40.30
" 5	20.45	46.50	26.05
" 6	1.45	24.30	22.85
" 7	17.80	29.50	11.70
" 8	18.30	41.50	23.20
T.41N.-R1E., Sec. 15			
Lot 1	8.10	56.70	48.60
" 2	.50	31.80	31.30
" 3	1.90	33.60	31.70
" 4	19.50	36.70	17.20
" 5	13.05	21.70	8.65
" 6	6.90	19.00	12.10
" 7	10.90	21.00	10.10
" 9	24.20	48.70	24.50
" 10	11.85	40.80	28.95

EXHIBIT 4 (Continued)

Description	Acres Conveyed	Total Acres	Acres Remaining
T.41N.-R1E., Sec. 22			
Lot 1	16.20	44.20	28.00
" 4	.40	39.00	38.60
" 5	15.50	35.60	20.10
" 6	10.65	13.60	2.95
" 7	10.65	56.40	45.75
" 8	14.20	35.30	21.10
" 9	6.20	20.80	14.60
" 10	2.90	19.50	16.60
" 11	18.05	35.70	17.65
" 12	15.70	23.20	7.50
T.41N.-R1E., Sec. 21			
Lot 1	1.00	1.00	0.00
" 2	10.40	35.10	24.70
T.41N.-R1E., Sec. 28			
Lot 1	28.30	28.30	0.00
" 2	35.60	35.60	0.00
" 3	20.45	38.00	17.55
" 4	.75	27.80	27.05
" 5	28.20	38.50	10.30
" 6	2.90	48.40	45.50
" 9	8.30	21.70	13.40
T.41N.-R1E., Sec. 33			
NENE	17.35	40.00	22.65
SENE	13.70	40.00	26.30
NESE	2.15	40.00	37.85
Lot 1	7.85	21.40	13.55
" 2	13.95	21.50	7.55
" 3	20.45	40.30	19.85
" 4	1.90	34.00	32.10
" 5	1.10	38.30	37.20
" 6	9.45	18.40	8.95
" 10	31.55	46.10	14.55
" 11	9.30	46.80	37.50
" 12	.50	50.80	50.30
T.41N.-R1E., Sec. 32			
Lot 1	1.73	1.73	0.00
" 2	12.35	20.30	7.95
" 11	12.75	48.00	35.25
Sub-total, Agenda Twp.	700.98		
Total	980.98		

EXHIBIT 5

SELECTED DESCRIPTIONS OF THE FLAMBEAU FROM THE SURFACE WATER RESOURCES OF ASHLAND AND IRON COUNTIES

Feldcher Creek, T45N, R2W, Section 12 to Section 2
Surface Acres = 0.7, Miles = 1.0, Gradient = 55 feet per mile, M.P.A. = 34 ppm

A small, brook trout, spring feeder stream to the Tyler Forks River. The stream bank cover is pastured upland hardwood. It is a medium quality stream providing a minor spawning area for trout of the Tyler Forks River system. Siltation tends to make the bottom unstable. Waterfowl and furbearer use is insignificant. Its only public frontage is a state and town road crossing the stream.

Fishtrap Creek, T41N, R4W, Section 22 to Section 31
Surface Acres = 5.1, Miles = 4.2, Gradient = 12 feet per mile, M.P.A. = 12 ppm

A warm water, drainage stream flowing from a large tag alder and willow shrub swamp. It has a fish population of minnows. Water quality is poor in that it has infertile water, dark brown in color and a low pH. Water level fluctuations are extreme. Active beaver dams exist on the main stream and its feeder. Muskrat are common as well as a few nesting puddle ducks. The entire stream length is in public ownership most of which is Chequamegon National Forest Land with a minor part in state ownership. A small feeder stream flowing from section 20 is also a minnow stream.

Flambeau River, T41N, R1E, Section 12 to Section 32
Surface Acres = 274.8, Miles = 10.2, Gradient = 3 feet per mile, M.P.A. = 34 ppm

Sometimes known as the North Fork of the Flambeau River, this stream flows through the southeast corner of the county from Iron to Price County and into Upper Park Falls Flowage. The stream bank vegetation is predominantly hardwood and conifer upland, some of which is pastured. About 800 acres of shrub and fresh meadow wetlands border the stream, mostly in large bay areas. These wetlands provide habitat for muskrat and beaver and a number of ducks and mergansers. Generally the other migratory waterfowl use on the stream is medium. The main fishery is for muskellunge and smallmouth bass, however, northern pike are also present. There is also an abundant population of redhorse and white suckers along with a few common shiners and hog suckers. Private development of the stream bank is small as yet, with only seven homes, most of which are farm dwellings. It is accessible near the Price county line in section 32 at two access sites, but there is no other public frontage. Of the stream flowing into the Flambeau River only Rapid and Deer Creeks are trout water. Hoffman Creek and the unnamed feeder streams in sections 31, 32, 21, 22 and 12 are all minnow streams. Instream cover on the river is good with a number of deep holes providing fishing sites. However, during the later summer months, submerged aquatic vegetation becomes dense in the shallow water areas. The stream is easily canoeable and some portions are suitable for outboard boating.

Frames Creek, T45N, R4W, Section 33 to Section 23
Surface Acres = 0.6, Miles = 1.7, Gradient = 50 feet per mile, M.P.A. = 16 ppm

A small, spring feeder stream flowing into Spring Brook. It has good spawning habitat, but its main value is in being a trout reproduction area for Spring Brook. Brook trout are common here and brown and rainbow trout are present. Its stream bank vegetation is mainly hemlock and swamp hardwood. Waterfowl and furbearer values are minor. Almost the entire length of the stream is in Chequamegon National Forest Land ownership.

The hard water lakes are generally those that are located in the northern red clay drainage region and are old meander ox-bow lakes that have been separated from the Bad River. Table 4 summarizes the varioux lake types that are found in the county. As already suggested, the significant limnological characteristics peculiar to these classes are based on physical (i.e. water source, effects of vegetation) and chemical properties. Correspondingly, the production of plant and animal life varies with respect to each type of lake. A more detailed explanation of the seven types may be found in the "definitions" section of this summary. Since this classification system is a somewhat arbitrarily determined method of evaluation, there may be some lakes that exhibit characteristics of more than one type. However, borderline cases and overlapping of types occur only infrequently.

Water Fertility

The factor used in the measurement of fertility is alkalinity (M.P.A.), expressed as the amount of available carbonates, bicarbonates and hydroxides in parts per million of water. The lakes of Ashland County are mostly low in alkalinity and are thus considered to be of soft water quality. The pH (hydrogen ion concentration) range is quite low, making the water acid (below 7.0 pH), rather than alkaline (above 7.0).

Table 6 summarizes the above items for the surface waters of this county. The total concentration of dissolved electrolytes is included for these waters also. This is expressed in terms of electrical conductance of waters, or micromhos at 77 degrees Fahrenheit. This information corresponds roughly, though on a different scale of values, to the methyl purple alkalinity test for fertility and is also useful in management work.

A more complete chemical analysis of some Ashland County lakes was made in order to determine the relative quantities of their nutrients (see Table 7). Trace elements, however, were not included in the analysis. With the exception of the pH and conductance readings, all other figures are expressed in parts per million in Table 7. These measurements, although not conclusive, indicate shortage nutrients, especially P, is in low supply. The White River Flowage has an alkalinity of 86 parts per million (Fig. 5 map). This would place the lake in the categories of "medium hard" water and "high" production of fish and plant life according to Moyle (1946) in his water fertilities classification scale. Cycle Lake, with its total alkalinity of 11 parts per million, would be classed as "very soft" water and have a low productivity of fish and plant life. Lake Superior has more dissolved solids in it than most of the inland lakes.

Light penetration in many of these waters is very low because of their staining derived from bog waters. Secchi disk readings of as little as 2 and 3 feet were encountered. Low light penetration also would affect productivity.

Inland Fisheries

Lake and stream fisheries for the county are illustrated in Fig. 6, a basic resources map with fisheries coded in color. Major fishing areas in Lake Superior waters are also marked. The inland surface waters of Ashland County that are of importance in providing a fishery resource are summarized as follows: of the 156 lakes with a total surface area of 4,854.4 acres -- 93 lakes with a total area of 4,333.4 acres have game fish and panfish populations. The remaining 63 lakes with their 521 surface acres have, if any, only minnow populations. The fishing waters are further classified in Table 8 by the number of lakes and their total acreages where such species occur. Also, the occurrence of minor fish species, mostly the minnows, in named streams of the county are listed in Table 9.

APPENDIX 2A -- PHYSICAL AND CHEMICAL CHARACTERISTICS OF ASHLAND COUNTY STREAMS

Name	Outlet Location S - T - N R	Surface Acres	Length (Miles)	Width (Av. Feet)	Approximate Depth (Av. Feet)	Approximate Average Gradient (Ft./Mile)	pH	Methyl Purple Alkalinity (PPM)	Specific Conductance (MMHOS at 77°)	Water Color	Sampling Date
Augustine Creek	2 - 42 - 2W	18.1	6.0	25	0.6	24	7.2	54	123	Lt. Brown	Sept. 30 - 1965
Bad River	25 - 48 - 3W	678.8	70.2	80	2.0	14	6.8	27	67	Med. Brown	Sept. 30 - 1965
Ballou Creek	2 - 44 - 2W	2.3	2.4	8	0.6	40	6.8	23	41	Clear	Oct. 22 - 1965
Bay City Creek	6 - 47 - 4W	5.2	4.3	6	0.5	27	7.4	182	343	Clear	Oct. 21 - 1965
Bear Creek	32 - 43 - 1W	0.7	1.1	5	0.6	14	6.5	25	53	Lt. Brown	Oct. 14 - 1965
Beartrap Creek	22 - 48 - 3 W	14.5	10.0	12	0.7	8	6.5	86	105	Turbid	Oct. 22 - 1965
Beaver Creek	36 - 41 - 2W	0.5	0.6	8	1.0	12	6.8	67	134	Med. Brown	Oct. 1 - 1965
Billy Creek	35 - 46 - 3W	0.2	0.4	3	0.3	37	7.2	121	229	Clear	Feb. 23 - 1966
Black Creek	4 - 41 - 4W	1.9	3.1	5	0.4	9	5.8	18	81	Dark Brown	Sept. 30 - 1965
Brunsweiller River	31 - 46 - 3W	53.5	22.1	20	1.0	41	6.8	26	41	Lt. Brown	Sept. 29 - 1965
Brush Creek	6 - 43 - 3W	4.1	5.7	6	0.7	16	6.0	9	25	Lt. Brown	Oct. 5 - 1965
Buttemut Creek	33 - 41 - 1W	27.4	11.9	19	0.7	10	7.2	69	107	Lt. Brown	Sept. 14 - 1965
Camp Fifteen Creek	22 - 41 - 3W	1.1	1.5	6	0.4	50	6.8	51	130	Lt. Brown	Oct. 1 - 1964
Camp Four Creek	10 - 45 - 2W	1.4	1.9	6	0.4	36	7.0	41	107	Clear	Sept. 30 - 1965
Camp Fourteen Creek	21 - 41 - 3W	1.4	2.3	5	0.4	37	5.8	19	57	Med. Brown	Oct. 1 - 1964
Camp Six Creek	14 - 44 - 4 W	0.7	1.1	5	0.4	36	6.6	29	35	Lt. Brown	Oct. 5 - 1965
City Creek	5 - 44 - 2W	1.4	2.0	6	0.3	35	7.2	71	137	Clear	Sept. 30 - 1965
Deer Creek	15 - 41 - 1E	6.9	6.3	9	1.0	19	6.5	22	87	Med. Brown	Oct. 9 - 1964
Deer Creek	26 - 47 - 4W	2.0	3.4	5	0.4	16	7.6	132	169	Clear	Oct. 21 - 1965
Denomie Creek	20 - 48 - 2W	2.5	3.4	6	0.5	7	6.6	51	88	Turbid	Oct. 20 - 1965
Devils Creek	5 - 44 - 2W	7.8	5.9	11	0.7	32	7.0	38	64	Clear	Sept. 30 - 1965
Dingdong Creek	3 - 42 - 4W	11.5	9.5	10	0.9	8	6.0	20	75	Dark Brown	Sept. 29 - 1964
Dorn's Creek	26 - 42 - 2W	11.3	6.2	15	2.0	6	7.0	59	79	Lt. Brown	Sept. 18 - 1965
Dryden Creek	20 -42 - 2W	19.5	13.4	12	0.8	8	7.1	41	72	Lt. Brown	Sept. 18 - 1965
East Fork Chippewa River	33 - 41 - 4W	517.8	53.4	80	1.5	4	7.2	53	86	Lt. Brown	Sept. 17 - 1965
East Fork Torch River	16 - 42 - 4W	17.3	9.5	15	1.0	7	6.1	19	78	Med. Brown	Sept. 29 - 1965
Edies Creek	32 - 44 - 3W	1.6	2.7	5	0.5	13	7.0	31	76	Med. Brown	Aug. 2 - 1962
Feldcher Creek	2 - 45 - 2W	0.7	1.0	6	0.6	55	6.8	34	115	Lt. Brown	Oct. 14 - 1965
Fishtrap Creek	31 - 41 - 4W	5.1	4.2	10	0.8	12	5.6	12	29	Dark Brown	Sept. 18 - 1965
Flambeau River	32 - 41 - 1E	274.8	10.2	222	6.0	3	7.0	34	74	Lt. Brown	Sept. 14 - 1965
Frames Creek	27 - 45 - 4W	0.6	1.7	3	0.4	50	7.0	16	66	Clear	Sept. 29 - 1965
Gehrman Creek	15 - 45 - 2 W	0.6	0.5	5	0.3	70	7.2	55	131	Clear	Sept. 30 - 1965
Gravelly Brook	14 - 44 - 3W	0.1	0.5	2	0.5	120	6.8	21	38	Clear	Oct. 18 - 1965
Gully Creek	26 - 45 - 2W	1.7	2.4	6	0.4	37	6.8	27	91	Lt. Brown	July 9 - 1965
Happy Creek	14 - 44 - 3W	2.0	3.4	5	0.6	59	6.8	30	52	Lt. Brown	Oct. 18 - 1965
Hardscrabble Creek	14 - 44 - 3 W	1.1	1.8	5	0.6	90	6.8	21	37	Clear	Oct. 18 - 1965
Hay Creek	30 - 41 - 3W	2.5	3.4	6	0.6	6	6.2	20	74	Med. Brown	Sept. 30 - 1965
Hell Hole Creek	21 - 44 - 4W	1.4	2.4	5	0.5	10	6.7	20	31	Med. Brown	Oct. 5 - 1965
Hildebrandt Creek	2 - 41 - 1W	1.2	1.6	6	0.5	15	7.2	66	76	Clear	Oct. 13 - 1964

APPENDIX 2B – PHYSICAL CHARACTERISTICS OF ASHLAND COUNTY STREAMS

Name	Drainage System	Direct Drainage (Sq. Miles)	Percent of Direct Drainage Agr.	Percent of Direct Drainage Wooded	Watershed Area (Sq. Miles)	Estimated Normal Flow (cfs.)	Wetlands (Total Acres)	Percent Marsh	Percent Wooded	Miles Trout Stream	Miles Public Frontage
Augustine Creek	Chippewa R.	4.2	–	100	11.6	14.0	75	2	98	5.0	11.4
Bad River	Lake Superior	88.3	1	99	870.8	252.0	3,840	35	65	23.0	42.7
Ballou Creek	Devils Cr.	4.2	–	100	7.7	4.2	95	4	96	2.4	–
Bay City Creek	Lake Superior	7.0	92	8	7.0	0.7	–	–	–	–	–
Bear Creek	Chippewa R.	0.4	10	90	0.4	0.7	45	8	92	1.1	–
Beartrap Creek	Kakagon Slough	26.6	65	35	26.6	1.5	175	40	60	–	0.8
Beaver Creek	Butternut Cr.	5.8	55	45	5.8	0.3	825	20	80	–	–
Billy Creek	Marengo R.	2.9	65	35	2.9	1.0	–	–	–	0.4	–
Black Creek	Moose R.	12.7	–	100	12.7	1.0	1,300	15	85	–	5.6
Brunsweiller River	Marengo R.	23.2	23	77	79.0	10.0	350	7	93	14.4	11.7
Brush Creek	Iron R.	8.3	–	100	8.3	4.0	1,075	1	99	5.7	10.2
Butternut Creek	Flambeau R.	21.0	30	70	23.6	20.0	2,950	10	90	7.7	–
Camp Fifteen Creek	Chippewa R.	5.1	–	100	5.1	4.5	585	5	95	1.5	3.0
Camp Four Creek	Tyler Forks R.	2.9	25	75	2.9	3.2	45	2	98	1.4	–
Camp Fourteen Creek	Chippewa R.	1.3	–	100	1.9	1.0	185	20	80	–	4.6
Camp Six Creek	Brunsweiller R.	1.2	–	100	1.2	0.4	42	15	85	–	1.5
City Creek	Devils Cr.	2.9	–	100	4.1	3.0	10	30	70	2.0	–
Deer Creek	Flambeau R.	13.3	6	94	13.3	7.0	1,285	5	95	6.9	2.2
Deer Creek	White R.	7.0	50	50	9.4	1.7	3	50	50	–	0.8
Denomie Creek	Lake Superior	15.0	3	97	15.0	1.5	110	25	75	–	–
Devils Creek	Bad River	5.3	40	60	27.6	11.0	125	10	90	5.9	–
Dingdong Creek	Torch R.	21.1	–	100	21.1	6.0	5,780	3	97	9.5	18.2
Dorns Creek	Chippewa R.	6.5	20	80	6.9	3.8	790	25	75	4.0	0.6
Dryden Creek	Chippewa R.	12.7	22	78	22.2	8.0	2,272	20	80	4.4	9.8
East Fork Chippewa River	Chippewa R.	65.7	18	82	237.3	250.0	7,400	15	85	13.3	38.9
East Fork Torch River	Torch R.	14.1	–	100	14.1	7.0	4,670	10	90	2.0	17.8
Edies Creek	Iron R.	3.1	–	100	3.1	0.5	340	1	99	–	5.4
Feldcher Creek	Tyler Forks R.	1.2	30	70	1.9	0.5	2	–	100	1.0	–
Fishtrap Creek	Chippewa R.	8.2	–	100	8.5	2.0	1,900	10	90	–	8.4
Flambeau River	Chippewa R.	15.9	15	85	754.0	620.0	825	5	95	–	0.1
Frames Creek	Spring Brook	1.2	–	100	1.2	1.0	20	20	80	1.7	3.2
Gehrman Creek	Tyler Forks R.	1.9	20	80	1.9	0.6	1	–	100	0.5	–
Gravelly Brook	Bad R.	0.4	–	100	0.4	0.3	–	–	–	–	–
Gully Creek	Montreal Cr.	2.4	11	89	2.4	1.5	35	15	85	1.7	–
Happy Creek	Bad R.	3.0	8	92	3.0	3.0	125	5	95	3.4	–
Hardscrabble Creek	Bad R.	2.2	–	100	2.2	2.5	35	15	85	1.8	–
Hay Creek	Chippewa R.	5.9	–	100	6.0	3.5	1,700	10	90	–	6.4
Hell Hole Creek	Brunsweiller R.	2.1	–	100	2.9	3.5	170	7	93	–	3.3
Hildebrandt Creek	Butternut Cr.	1.6	5	95	1.6	3.5	70	2	98	1.6	–
Hinder Creek	Dryden Cr.	2.0	55	45	2.0	0.4	360	2	98	–	0.6

Munnomin Creek, T41N, R4E, Section 26
Surface Acres = 0.1, Length = 0.1 mile

A medium hard water stream having slightly acid, clear water. Tributary to the Bear River. A warm water stream inhabited by forage species. Wildlife values are limited. There is no public access as the entire stream length is in private ownership. All of the watershed is wooded.

Muskie Creek, T41N, R3E, Section 22
Surface Acres = 0.1, Length = 0.3 mile

A medium hard water stream having slightly acid, light brown water. Tributary to Springstead Creek. A warm water stream inhabited by forage species. Wildlife values are limited. Public access is restricted to one road crossing as the entire stream length is in private ownership. All of the watershed is forested.

Norman Creek, T45N, R1E, Section 29
Surface Acres = 3.1, Length = 2.8 miles

A soft water trout stream having slightly alkaline, medium brown water. Tributary to the Potato River. Brook trout, longnose dace, redbelly dace, stickleback, sculpin, mudminnows, and suckers inhabit this stream. Wildlife values are limited although past beaver activity was noted. Stream gradient is estimated to be 54 feet per mile. The entire watershed is comprised of wooded or wild lands. Stream flow is quite variable in that high flood crests (3 feet) occur on this small stream. Direct public access is available from a logging road that crosses this stream. The wilderness type access to the lower 50 percent of the stream is excellent in that this area lies within Iron County Forest land. There is conditional public access to the upper half of the stream in that it lies in private forest crop land, affording the public an opportunity to gain access to the upper reaches of the stream.

North Fork of the Flambeau River, T41N, R2E, Section 7
Surface Acres = 179.5, Length = 8.0 miles

A soft to medium hard water stream having slightly alkaline, light brown water. Tributary to the Flambeau River in Sawyer County. The fishery in the river above the Flambeau Flowage is for northern pike, muskellunge, smallmouth bass, panfish, and possibly some largemouth bass and walleye. The principal game fish in the river at this point are northern pike and smallmouth bass. In the North Fork below the Flambeau Flowage, northern pike, muskellunge, smallmouth bass, walleye, lake sturgeon, panfish, and possibly a few largemouth bass comprise the fishery. In addition, forage species are found throughout the system. Use by furbearers and waterfowl is modest. Public access is limited except for that of the navigable water type from either the Flambeau Flowage or the Manitowish or Bear Rivers on that part of the river above the Flambeau Flowage. Conditional public access to the river below the Flambeau Flowage is available in that a road and boat landing area, located approximately one-half mile downstream from the Flambeau Flowage on property owned by the Owen-Illinois

EXHIBIT 5 (Continued)

Paper Company is available for public utilization. Public frontage on this stream is all located above the Flambeau Flowage. About 19 percent of the stream frontage is in state ownership and provides the wilderness type access as well. In addition, nearly 20 percent of the stream frontage is in forest crop land, all of which is located below the Flambeau Flowage, thus conditional public access of the wilderness type is available to this area. Stream gradient is estimated to be six feet per mile. River flows are under the influence of a water control structure owned by the Chippewa-Flambeau Improvement Company, which maintains the Flambeau Flowage, and has a head of 27 feet. In addition, water control structures located on the Manitowish and Bear Rivers will influence stream flow in the river above the Flambeau River Flowage. Stream discharge data on the North Fork of the Flambeau, taken about one-half mile below the Flambeau Flowage, has recorded a range of 3.1 to 3,930 cubic feet per second during the years of record, 1927-61. Average stream discharge for this period was 635 cubic feet per second. In contrast to most natural rivers, the maximum stream flow is usually recorded in February due to drawdown of the Flambeau Flowage in anticipation of spring runoff. Nearly all of the watershed is comprised of wooded lands with an estimated 1 or 2 percent of that area being cleared or in agriculture. That portion of the stream below the Flambeau Flowage is an excellent canoe route being undeveloped and with some white water challenges consisting of short rapids.

North Grant Lake Creek, T42N, R3E, Section 23
Surface Acres = 0.9, Length = 0.9 mile

A soft water stream having slightly acid, medium brown water. Tributary to the Flambeau Flowage. A warm water stream inhabited by forage species. Wildlife values are limited. Public access is restricted to that of the wilderness type and to a limited area as 6 percent of the stream frontage is in municipal ownership. All of the watershed is comprised of wooded lands.

North Twin Creek, T44N, R1E, Section 20
Surface Acres = 0.4, Length = 0.5 mile

A very soft water stream having acid, light brown water. Tributary to Shine Creek. A warm water stream inhabited by forage species. Wildlife values are limited. Public access is restricted since the entire stream length is within private ownership; however, conditional access of the wilderness type is available in that the entire stream length flows through private forest upland. Woods cover the entire watershed.

Obadash Creek, T44N, R2E, Section 24
Surface Acres = 0.9, Length = 0.9 mile

A very soft water stream having neutral, light brown water. Tributary to Laymans Creek. A warm water stream inhabited by forage species. Wildlife values are limited with beaver activity probable. Public access of the wilderness type is available as the entire stream length is within Iron County Forest land. All of the watershed is wooded.

EXHIBIT 5 (Continued)

black duck, wood duck, blue-winged teal, and green-winged teal. In addition there is some nesting by hooded merganser, ring necks and, on rare occasion, Canada goose. Migratory waterfowl that utilize the waters of this county, in addition to the previously listed nesting species, are blue bill, redhead, canvasback, goldeneye, whistler, and bufflehead. It is unlikely that any waterfowl winter in Iron County.

Principal furbearers are beaver, muskrat, mink, and otter. In 1967, 26 trapping licenses were issued in the county which represented 1.3 percent of the state total. There were 1,982 trap tags issued which represents 0.7 percent of the total issued in the state that year.

The Powell Marsh in southern Iron County is managed for waterfowl, and when fully developed it will greatly enhance the waterfowl values. Presently, the development program scheduled for this marsh is about 35 percent complete. In addition to waterfowl, sharp-tailed grouse found in this area are also benefiting from the management measures being applied to waterfowl. Other project areas in the county are: Underwood, Big Island, Boot Lake, and Hay Creek. These areas have managed deer yards.

Resident small-game licenses, including the sportsman's license, accounted for nearly 0.3 percent of the state sales in 1969. Resident big-game license sales accounted for 0.24 percent of the state total in 1969. In 1966 there were 143 duck stamps issued in the county representing 0.4 percent of the state total. Resident archer licenses in 1969 amounted to 108, representing 0.17 percent of the state sales.

Boating

There are 13 lakes 200 acres or larger that might be considered adequate for fast boating activities. Although 200 acres and larger, lakes are able to accommodate fast boating activities, those lakes which are 500 acres and larger are best suited to this activity. There are four lakes in the county that are 500 acres and larger and possess 63 percent of the available lake acreage. The two largest are the Flambeau and Gile Flowages which under certain conditions, particularly drawdown, reduce the available water area for fast boating and have some inherent dangers of stumps and floating driftwood. Therefore, it is necessary to be cognizant of these limitations when considering the fast boating capabilities of the respective waters. Boating on Lake Superior is in addition to the inland lakes. However, water temperatures and wind conditions are factors governing the utilization of this water for boating activities. Caution and proper equipment must be used. When conditions are right, it is an ideal area because of the expanse of water available. Boating on the streams, specifically canoeing, has its best potential on those streams averaging at least 20 feet wide and is normally best on those streams having an average width of 40 feet or more. Water levels are quite important and become critical in late summer on those streams of the Lake Superior watershed north of the Penokee Range. Those rivers north of the Penokee Range have high gradients and rapids and water-falls are common. These streams should be used by only the experienced canoeist. The larger rivers south of the Penokee Range do not have a high gradient. In general, these streams are low gradient and meandering and readily adaptable to the novice with the exception of the North Fork of the Flambeau River below the Flambeau Flowage. The North Fork of the Flambeau is

probably the outstanding canoe stream in Iron County. In addition, the Manitowish, the Turtle, Little Turtle, and Bear Rivers are good to excellent canoeing waters. Streams to the north that are suitable for canoeing are the East Fork of the Montreal, West Fork of the Montreal, the Montreal, Tyler Forks, and Potato Rivers. These waters are for the experienced canoeist and, as previously mentioned, are affected by variable flow conditions making canoeing difficult during low flow periods.

Aerial flights conducted by Law Enforcement personnel in 1960 and 1962 provide some insight into activities on Iron County lakes. These observations are quite limited and are not intended to illustrate trends but serve to provide information on the activities at that particular time. On June 30, 1962, a Saturday, under clear skies and light wind conditions, 18 boats were observed at 9:00 a.m. in the morning. Seven lakes were observed at this time with activity being noted on two, that being the Flambeau and Gile Flowages. All these craft were fishing. On July 7, 1960 and on August 16, 1960 under clear to partly cloudy conditions with some wind, 56 boats were observed on five lakes between 9:00 a.m. and 1:30 p.m. Of the 56 boats, 54 were fishing and two were pleasure boating. These very limited data suggests that fishing is the dominant activity on Iron County lakes.

Boat registration data is provided in Table 16. It is interesting to note that 51 percent of all the registered boats in the county have fleet registrations. This reflects the resort operations, and boat rentals. In the State of Wisconsin as a whole 14 percent of the boats registered have a fleet registration.

Campgrounds

Camping is a rapidly growing activity related to water use, and therefore the statistics cited herein are not complete as new campgrounds are being created and established campgrounds are being enlarged or expanded. There are five lakes, including Lake Superior, and three streams which have campground facilities available to the general public. Of the 12 campgrounds in the county, six are privately owned, five are maintained by the county and one is maintained by the state. In addition, there are 25 wilderness campsites located on islands in the Flambeau Flowage that are maintained by the Chippewa-Flambeau Improvement Company and the Flambeau Paper Company. The private campgrounds are located on the Flambeau Flowage, Gile Flowage, Pike Lake, and Upper and Lower Springstead Lakes. County campgrounds are found on the Flambeau Flowage, Lake Superior, Potato River, Laymans Creek, and the Turtle River. The state campground is located on Sandy Beach Lake. All campgrounds charge a use fee except for the wilderness sites located on the Flambeau Flowage. There are 17,456 acres of water available to these campgrounds, exclusive of Lake Superior. Campgrounds are located on inland lakes ranging in size from 112 to 13,545 acres.

Swimming

Most of the larger lakes possess some qualities that make them desirable for swimming. Swimming facilities are available on the Gile Flowage, Weber Lake, Sandy Beach Lake, Pine Lake, Grand Portage, and on Lake Superior. Swimming opportunities in the southeastern third of the county can be described as excellent, whereas facilities in the northern two-thirds are limited to Pine Lake, Weber Lake and Lake Superior.

Appendix II (continued)

Stream	Sec.	T-N	R-E	Surface Acres	Length (miles)	Miles of Trout Stream	Average Width (feet)	Average Depth (feet)	Public Frontage (Miles)	Watershed Number	M.P.A. (ppm)	Conductance 77° F.	pH	Water Color	Watershed Area (sq. mi.)	Adjoining Wetlands (acres)
Graveyard	3	47	1W	5.2	5.5	5.5	8	.5	5.4	1574	87	185	7.6	C	6.2	181
Hall	6	44	3	2.1	3.8	0	5	.8	6.8	23102	17	53	6.4	Md. Br.	6.1	1,280
Hawk	28	44	4	.3	.5	0	5	.3	0	23102	25	62	6.5	Lt. Br.	.9	90
Hay	31	41	2	5.0	4.2	0	10	.7	6.0	23101	32	73	6.2	Dk. Br.	6.3	485
Hill	22	44	4	.1	.1	0	3	.2	0	23102	6	29	5.1	Md. Br.	.2	1
Island	24	41	2	1.1	1.5	0	6	1.3	0	23102	36	89	7.0	C	1.2	55
Javorsky	20	45	1W	3.6	3.7	3.7	8	.3	5.0	1573	71	252	7.2	Lt. Br.	3.7	65
Kaarris	34	47	2	1.7	2.5	2.5	6	.2	0	1572	108	230	7.3	C	.9	0
Kaminski	11	46	2	2.1	2.2	2.2	8	.3	.2	1572	43	151	7.1	Lt. Br.	1.3	55
Lawrence	15	46	1W	12.1	10.0	10.0	10	.7	7.0	1573	52	179	7.0	Lt. Br.	14.3	444
Laymans	33	45	3	15.8	8.7	3.9	15	1.0	11.4	1572	32	64	6.8	Md. Br.	16.9	589
LeClairs	20	44	1	1.7	2.4	2.4	6	.4	0	1573	70	149	6.8	Lt. Br.	1.8	167
Linnunpuro	1	45	2	2.7	3.2	3.2	7	1.3	0	1572	39	92	6.8	Md. Br.	4.6	70
Little Bear	33	42	4	4.1	4.8	0	7	1.2	9.0	23102	49	103	6.6	Dk. Br.	27.0	1,150
Little Martha	30	43	4	4.3	2.1	0	17	1.7	0	23102	54	130	7.2	Lt. Br.	2.2	160
Little Pike Lake	2	42	3	.5	.6	0	7	.7	1.0	23102	51	112	6.6	Lt. Br.	1.3	35
Little Pine Lake	32	44	3	.3	.8	0	3	.5	.8	1572	12	60	5.6	Md. Br.	.2	83
Little Turtle R.	8	42	3	23.5	8.8	0	22	1.9	9.0	23102	53	121	7.5	Lt. Br.	14.6	832
Long Lake	7	43	4	10.6	2.5	0	35	3.0	3.5	23102	36	93	7.0	Lt. Br.	27.6	256
Lost	34	42	4	9.3	5.1	0	15	1.3	9.2	23102	46	105	6.8	Md. Br.	9.5	565
Magee	36	44	1W	.8	2.0	2.0	3	.3	1.2	2395	36	95	7.0	Lt. Br.	5.5	140
Manitowish R.	32	42	4	144.2	13.5	0	89	1.5	23.0	23102	41	122	7.6	Lt. Br.	291.5	1,633
Martha	30	43	4	.6	.4	0	12	1.0	0	23102	58	127	7.3	Lt. Br.	1.3	11
Marty's	32	41	3	.1	.3	0	2	.5	0	23102	73	156	6.7	Lt. Br.	.3	10
McDermott	31	41	3	.3	1.4	0	2	.3	.1	23102	42	98	6.7	C	1.1	137
McDonald	10	44	4	.3	.3	.3	9	.5	0	1513	8	37	5.5	Md. Br.	4.9	32
Mead	4	44	1W	2.4	2.5	2.5	8	.4	5.0	1573	66	140	6.4	Lt. Br.	6.8	74
Mineral	32	44	1W	1.1	2.5	2.5	6	.5	4.6	1576	27	69	7.0	Lt. Br.	1.6	35
Minnie	31	44	1W	3.4	2.8	2.8	10	.5	5.0	1576	44	108	7.0	Lt. Br.	3.1	45
Montreal	19	45	1W	.5	1.4	1.4	3	.5	2.8	1573	35	86	7.1	Lt. Br.	1.3	74
Montreal R.	7	47	1	83.5*	16.0	16.0	87	2.0	1.3*	1572	35	109	7.9	Md. Br.	281.0	30
Moose	31	43	3	10.1	6.4	0	13	1.8	0	23102	29	80	6.6	Dk. Br.	17.1	832
Mud	23	42	4	.1	.1	0	8	1.3	.2	23102	49	94	6.9	Lt. Br.	.5	8
Mud	3	44	1W	1.3	3.3	3.3	3	.2	6.0	1573	35	84	6.9	Md. Br.	3.1	75
Mud	21	44	2	1.3	2.1	0	4	.3	4.2	1572	35	79	6.9	Md. Br.	3.4	70
Mud	7	46	1E	3.8	3.1	0	10	.3	2.3	1573	67	247	7.4	Lt. Br.	4.3	35
Munnomin	26	41	4	.1	.1	0	8	.5	0	23102	73	149	6.9	C	.3	10
Muskie	22	41	3	.1	.3	0	3	.5	0	23101	43	91	6.8	Lt. Br.	1.1	25
Norman	29	45	1	3.1	2.8	2.8	9	.2	2.8	1573	37	87	7.2	Md. Br.	4.4	35
N. Fk. Flambeau	7	41	2	179.5	8.0	0	187	3.0	3.1	23102	33	98	7.6	Lt. Br.	652.0	856
North Grant Lake	23	42	3	.9	.9	0	8	2.0	.1	23102	27	62	6.1	Md. Br.	1.3	55
North Twin	20	44	1	.4	.5	0	6	.3	0	1573	8	23	6.0	Lt. Br.	.7	38
Obadash	24	44	2	.9	.9	0	8	.3	1.8	1572	12	38	7.0	Lt. Br.	1.1	26
Oronto	12	47	1W	8.2	5.6	5.6	12	.3	10.2	1574	104	313	7.8	Lt. Br.	10.5	0
Owl	24	44	4	.7	1.1	0	5	.8	0	23102	4	21	6.6	Lt. Br.	1.4	55
Pardee	35	44	4	7.0	3.4	3.4	17	.3	0	23102	47	111	6.9	Lt. Br.	7.6	65
Parker	12	47	1W	17.3	6.0	6.0	24	.3	1.0	2374	84	330	7.5	Lt. Br.	5.6	0
Paul	19	43	4	.1	.1	0	6	.5	0	23102	52	101	6.6	Md. Br.	.2	6
Pine	31	41	4	1.2	1.4	0	7	1.0	0	23101	21	47	6.2	Lt. Br.	5.8	85
Pleasant Lake Outlet	25	44	1	3.0	3.1	0	8	.8	0	1572	44	94	6.8	Lt. Br.	8.1	204
Potato River	18	46	1W	95.8	25.5	25.5	31	1.3	38.6	1573	55	158	7.2	Lt. Br.	108.4	464

*Boundary Water (Wis.-Mich.) - Acreage shown is for Wisconsin portion of stream. Entire stream comprises 167.0 surface acres. Public frontage is for Wisconsin side only.

EXHIBIT 6

SOIL AND WATER MAPPINGS

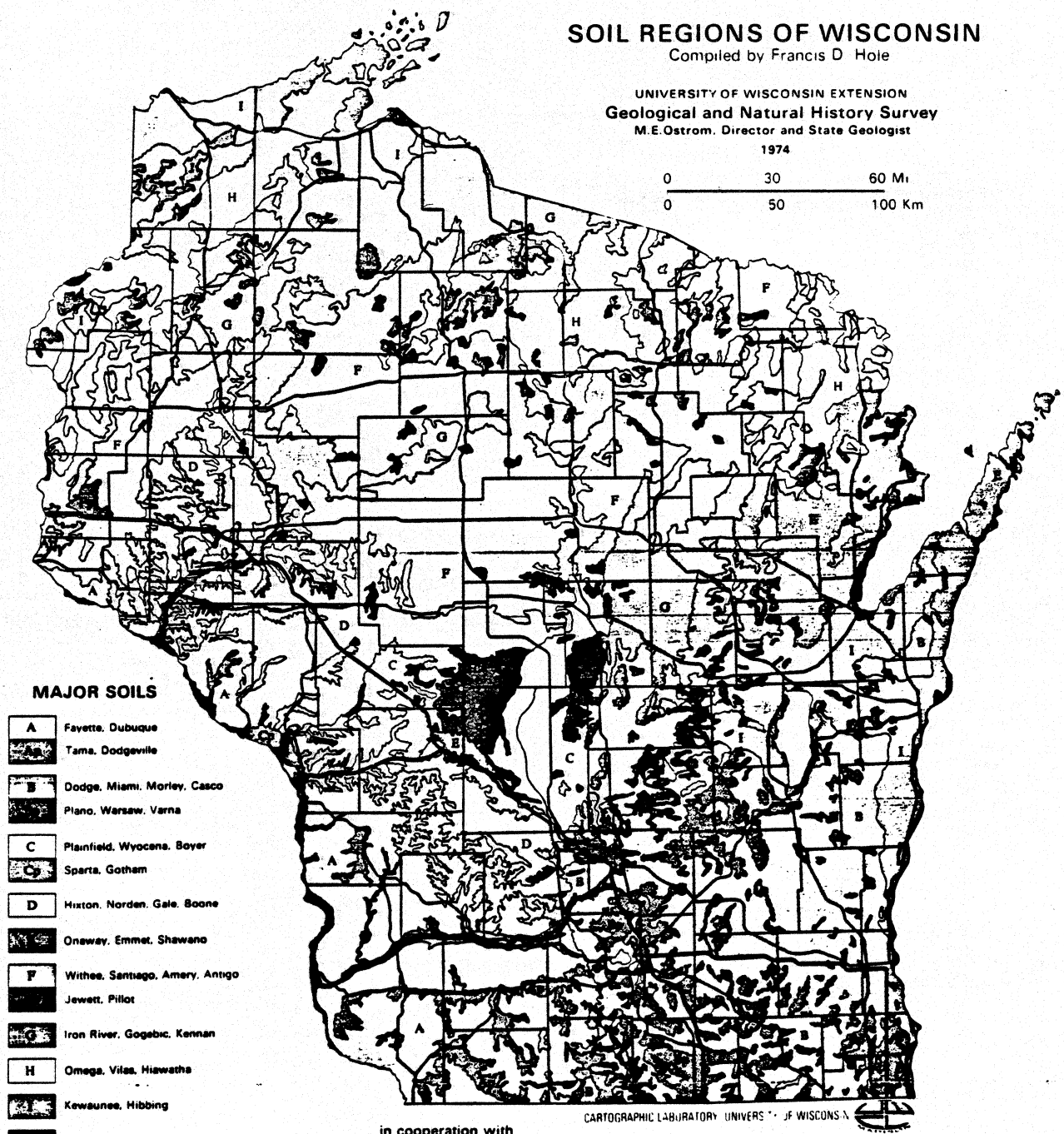


EXHIBIT 6 (Continued)

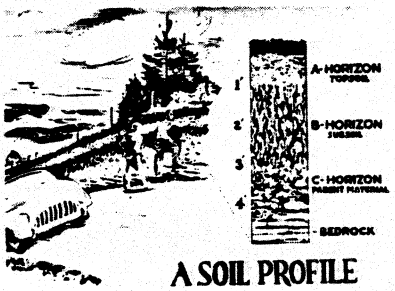
SOILS OF WISCONSIN

by F.D. Hole, M.T. Beatty, G.B. Lee and A.J. Klingelhoets

SOIL PROFILES

In many bare road cuts we see soils exposed to a depth of several feet. Such exposures (Fig. 1) reveal the vertical cross-sections or "profiles" of soils, comprised of horizons (layers) of topsoil, subsoil and underlying materials. Each combination of horizons constitutes a well-known soil profile that has been given a name. Soils are named after geographic features, such as towns and streams. Hixton loam, for instance, was first described near Hixton, Wisconsin. Soil names may change from time to time as soil scientists learn more about the soils.

Sketches of some typical soil profiles of the state are shown in Figure 2. After each soil name (such as Hibbing) is a soil textural term (silty clay loam, etc.), that indicates the fineness or coarseness of texture of the topsoil. Each soil is further classified on the basis of all horizons present and the lay of the land. For example, the Hibbing silty clay loam is a Typic Eutroboralf, meaning a typical (Typic), fertile (Eutro), northern (bor), soil with a clay-enriched subsoil containing aluminum and iron (alf). (Terms from an older soil classification are also given in Fig. 2.)



A SOIL PROFILE

Figure 1.

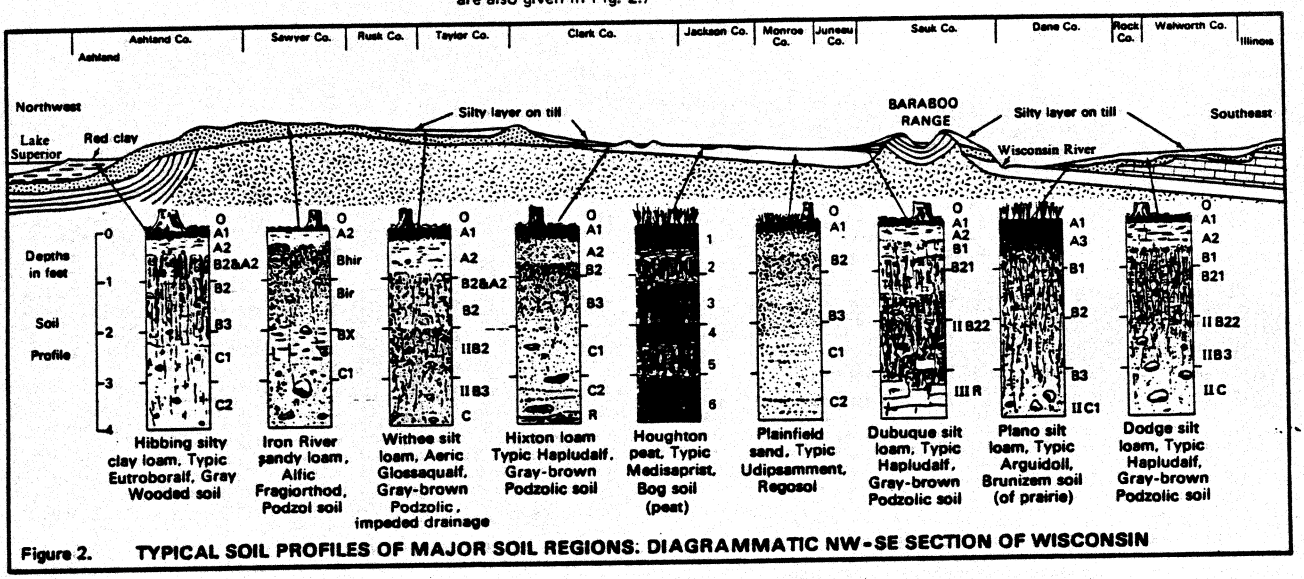


Figure 2. TYPICAL SOIL PROFILES OF MAJOR SOIL REGIONS: DIAGRAMMATIC NW-SE SECTION OF WISCONSIN

SOIL REGIONS

Wisconsin's 500 soils can be grouped into ten general regions, with four additional subregions of predominately prairie soils. To the traveler the regions appear as distinctly different landscapes. Differences in land form and land use between regions are related to characteristics of the soils.

Table 1 indicates areal extent and three general ratings for each soil region. Persons interested in land use planning and soil management of specific parcels of land are referred to detailed soil maps and rating tables, and to soil scientists familiar with the particular areas.

The map legend mentions only a few of the many soils in each of the ten regions, which are briefly described below.

Region A. Soils of the southwestern ridges and valleys include: on uplands, silty deep (Fayette) and shallow (Dubuque) soils overlying cherty reddish-brown clay and limestone bedrock; both silty and sandy soils on foot-slopes and bench lands; and stony soils on steep slopes. Land use in this diversified region ranges from crop production to wildlife conservation. Erosion control practices are widely used.

Region Ap. Productive prairie soils of Region A include black silt loams, both deep (Tama) and shallow (Dodgeville), overlying cherty clay and limestone, on broad ridges.

Region B. Soils of the southeastern upland are represented by Dodge and Miami soils that have formed from loess and limy glacial tills of loamy texture. Moderately deep (Casco) to shallow loams and associated stony soils of the hilly Kettle Moraine extend in an irregular belt from western Waukesha County to central Manitowoc County. Near Milwaukee and Kenosha are clayey soils (Morley) underlain by limy, clayey glacial till. These soils present problems in drainage and liquid waste disposal. Wet soils occupy numerous depressions in this region.

Region Bp. The darker prairie soils of Region B include silt loams (Plano) and loams (Warsaw) that overlie glacial sand and gravel in the plains of Rock and Walworth Counties, and on glacial till of rolling uplands to the north. Dark clayey soils (Varna) are important in eastern Racine and Kenosha Counties.

Region C. Soils of the central sandy uplands and plains are droughty, light colored loamy sands (Plainfield, Wyocena, Boyer). Irrigation farming is practiced on sandy plains. Windbreaks have been used around fields to check erosion.

Region Cp. These dark sandy soils (Sparta, Gotham), formerly under prairie vegetation, are very similar in texture to soils in Region C.

Region D. Soils of the western sandstone uplands, valley slopes and plains include soils developed from hard and soft (Boone) sandstone; from brown (Hixton) and green (Norden) siltstones and sandstones; and from a silty layer over sandstone (Gale). Water erosion is a serious hazard. Wet soils in parts of Wood, Clark and Jackson Counties are in silty material over acid, shaley sandstone. Both flat-topped and pointed hills are notable in some scenic areas.

Region E. Soils of the northern and eastern sandy and loamy reddish drift uplands and plains are represented by rolling pink loams (Onaway), sandy loams (Emmet) and nearly level fine sands (Shawano). Soils shallow to limestone are common on the Door Peninsula.

Region F. Soils of the northern silty uplands and plains include somewhat poorly drained silt loam (Withee) over acid, compact stony loam till and less extensive well drained soils (Santiago, Amery). Use of fertilizers and drainage practices has made these landscapes productive of forage and small grain crops. Well drained silty soils (Antigo) on plains of outwash sand and gravel are scattered over the region.

Region Fp. These dark silty soils of Region F are on rolling glacial till (Jewett) and nearly level outwash (Pillot) in Northwestern Wisconsin.

EXHIBIT 6 (Continued)

Region G. Soils of the northern uplands and plains are acid stony sandy loams and loams (Iron River, Gogebic, Kennan). Irregular slopes, stoniness, droughtiness on rises, wetness in depressions and short growing season limit the agricultural use of soils in the region.

Region H. Soils of the northern sandy uplands and plains are reddish-brown sands (Omega, Vilas, Hiawatha). They are droughty, acid, low in fertility and easily eroded by wind. Lakes and bogs are numerous.

Region I. Soils of the northern and eastern clayey and loamy reddish drift uplands and plains are represented by fertile reddish brown clayey soils (Hibbing near Lake Superior, Kewaunee near Lake Michigan) on moraines and ancient lake plains. Problems may arise in constructing roads, buildings and septic systems, and in controlling erosion. The short growing season in the northern area limits some kinds of farming.

Region J. Soils of the stream bottoms and major wetlands include both mineral soils (Pella, Newton, Arenzville) and organic soils (Houghton muck and others). The map shows only the largest of the numerous bodies of these soils that occur in countless depressions and drainageways. Land use ranges from wildlife habitat to vegetable crop field.

Table 1. Acreage and General Ratings for Soil Regions of Wisconsin

Soil Regions	Millions of Acres	Region-wide Ratings* of Soil Limitations for		
		General Livestock Farming	Forestry	Urban Development
A	3.0	2	2	3
Ap	0.8	1	4	2
B	3.6	1	3	2
Bp	0.8	1	4	1
C	2.1	4**	2	2
Cp	0.4	3**	2	2
D	3.3	3	2	3
E	1.6	3	2	3
F	5.6	3	3	3
Fp	0.1	2	3	2
G	5.6	3	1	3
H	2.6	4**	2	2
I	2.6	2	3	3
J	2.9	4**	3	4

*Ratings are averages by regions. In each region there are many localities with soils of better and/or poorer ratings than that indicated. 1 = slight limitation; 2 = moderate limitation; 3 = severe; 4 = very severe.

**Some areas are highly productive of vegetables, specialty crops and field corn with irrigation and/or drainage.

SOIL AND LAND USE

The land is made up of the soils together with all other resources at the surface of the earth, including vegetation, animals, water, geologic deposits, air, climate, people, and structures. Some people regard the land as a commodity held in ownership; others see land as a community to which people belong, holding its ecological diversity in trust. These two viewpoints have contributed to the development of the pattern of land use in Wisconsin. Some statistics on land use are given in tables 2 through 5.

The data in these tables are based on information from the U.S. Census of Agriculture. For further information, consult the Wisconsin Agricultural Statistical Reporting Service.

Table 2. Area of Land and Water, Wisconsin

Item	Area	
	Acres	Percent
Land	34,800,000	97
Water	1,138,560	3
Total	35,938,560	100

Table 3. Major Land Uses in Wisconsin

Item	Year	
	1949	1969
	%	%
In farms	66	52
In forest (not in farms, ungrazed)	24	31
Other lands (parks, wildlife areas, urban & industrial sites)	10	17

Table 4. Uses of Land in Farms, Wisconsin[1]

Item	Year	
	1949	1969
	%	%
Cropland (not pastured)	46	52
Pasture land	39	31
Woodland (not pastured) and other land	15	17

[1]Land in farms was 23,200,000 acres in 1949, 18,100,000 acres in 1969.

Table 5. Uses of Wisconsin Cropland (not pastured)[1]

Item	Year	
	1949	1969
	%	%
Hay	35	37
Corn	25	26
Small grain	30	17
Canning specialty crops	2	3
Soybeans	Tr	2
Other crops	3	6
Land not cropped	5	9

[1]Land in cropland (not pastured) was 10,700,000 acres in 1949, 9,500,000 acres in 1969.

A major use of soils is in farmland. Wisconsin's prime agricultural and silvicultural soils have four characteristics: (1) They have a balanced supply of essential plant nutrients, for health of trees, pastures, crops, livestock, wildlife and people. (2) They have a deep rooting zone in which water and air, as well as nutrients, are stored in proper proportions for plant use. (3) They are stable and do not easily slide, wash or blow away. (4) They have a favorable moisture regime during the growing season to permit crops to mature.

Soils are also important, in the engineering sense, for supporting roads and buildings, serving as sources of dam construction material, and absorbing liquid wastes and burying solid wastes safely. Soils and vegetation perform valuable functions in helping clear air of dust and pollutants and in absorbing noise.

A balance is sought between man-made landscape patterns and natural environmental corridors composed of streams and lakes, wetlands, sandy areas, wooded ridges and slopes, and rock outcrops. These corridors provide the major recreational and aesthetic resources of the state.

Conservation of soil and water, and their efficient utilization, is fundamental to wise use of the land. For best results in soil erosion control, combinations of practices are custom-made for each kind of soil landscape within the ten soil regions already described. The experience of the Wisconsin Agricultural Experiment Station and the U.S. Soil Conservation Service personnel has been invaluable in determining how strip-cropping, grassed waterways, diversion terraces, stream bank stabilization and many other practices may best be applied to specific areas. The purposes of these practices are to promote infiltration of water into soil and to remove excess water from fields, without notable incidence of erosion and sedimentation. Increased soil productivity over many years has been the result. The reader is referred to the Soil Conservation Service for information about soil and water conservation practices currently in use.

EXHIBIT 6 (Continued)

SOIL SURVEY INFORMATION APPLIED TO LAND MANAGEMENT AND LAND USE PLANNING

Soil type is a major determining factor with respect to land use. The soil ratings given in Table 1 are for entire soil regions, each of which is made up of a wide variety of soils. Each kind of soil (Figs. 1 and 2) has a characteristic capability for any given use (see Table 6). Such information is vital to planners and developers in avoiding costly mistakes, such as placement of a private septic system on a soil incapable of absorbing liquid waste, and in insuring maximum return for investment while conserving both soil and water.

On-site investigation is advisable for intensive land use decisions. To aid in making these decisions, detailed soil maps are made showing the exact locations of bodies of soil types, with respect to networks of streams and roads. Together with soil information tables, the maps make possible scientific evaluation of land and sound land use planning. The goal of the co-operative soil survey program in the state is to complete and publish detailed soil maps for every section of land.

Table 6. Some Interpretations Useful in Planning and Management on Five Soils

Soil Type	Soil Region	Common Yields of			Degrees of Limitation for		
		Oats (bu/acre)[1]	Corn for Grain (bu/acre)	Red pine. (BF/acre)[2]	Absorbing Septic System Effluent	Providing Stable Support for Roads and Buildings	Other Soil Management Problems
Hibbing silty clay loam	I	65	60[4]	350-400	Severe	Moderate to Severe	Difficult to till
Withee silt loam	F	75	85	--[5]	Severe	Moderate	Poor surface drainage, needs fertilization
Plainfield sand	C	45[3]	45[3]	350-400	Moderate	Slight	Wind erosion, leaching
Plano silt loam	Bp	85	140	--[5]	Slight	Moderate	Land use conflicts
Dodge silt loam	B	80	110	400-450	Slight	Slight	Erosion Control

[1] *These yields are for oats with legume-grass seeding, under high level of management.*
[2] *Yields are given according to Scribner rule. A board foot is one foot square and one inch thick. No yield is given for soils unsuited to red pine.*
[3] *With proper irrigation, fertilization, and weed and pest control, this yield can be more than doubled.*
[4] *The growing season is too short and cool for grain to mature in most years.*
[5] *This timber type does not normally occur on this soil.*

OTHER PUBLISHED GENERAL RESOURCE MAPS OF WISCONSIN

PAGE-SIZE MAP SERIES
1:2,730,000 scale (8½"x 11")

1. Aeolian Silt and Sand Deposits of Wisconsin
2. Bedrock Geology of Wisconsin
3. Glacial Deposits of Wisconsin
4. Buried Pre-Cambrian of Wisconsin
5. Early Vegetation of Wisconsin
6. Landforms of Wisconsin
7. Areas with Potential for Crushed Stone Production in Wisconsin
8. Ground-Water Pollution Potential Based on Recharge Rates

LAND RESOURCES ANALYSIS PROGRAM (LANDRAP) MAPS
1:500,000 scale (42"x 44")

1. Generalized Soil Limitations for Use of Septic Systems
2. Generalized Soil Limitations to Construction Activities
3. Generalized Soil Erosion Hazards
4. Major Public Open Space
5. Lands of Special Public Policy Designation
6. Major Areas of Potential Flood Hazard and Steep Slope
7. Generalized Land Cover Interpreted from ERTS-1 Satellite Imagery
8. Generalized Soil Productivity for Field Crops
9. Generalized Soil Productivity for Canning Crops
10. Glacial Deposits of Wisconsin: Sand and Gravel Resource Potential

1:1,000,000 scale (22"x 24")

1. Geologic map of Wisconsin
2. Landforms of Wisconsin
3. Depth of Bedrock in Wisconsin
4. Probable Yields of Wells in the Sand-and-Gravel Aquifer, Wisconsin
5. Probable Yields of Wells in the Sandstone Aquifer, Wisconsin
6. Probable Yields of Wells in the Niagara Aquifer, Wisconsin
7. Dissolved-Solids Concentration of Water in the Sand-and-Gravel Aquifer, Wisconsin
8. Dissolved-Solids Concentrations of Water in the Sandstone Aquifer, Wisconsin
9. Dissolved-Solids Concentrations of Water in the Niagara Aquifer, Wisconsin
10. Photo-Mosaic Soil Map of Wisconsin

A list of publications of the Geological and Natural History Survey with current prices will be sent upon request.

University of Wisconsin-Extension
GEOLOGICAL AND NATURAL HISTORY SURVEY
M.E.Ostrom, Director and State Geologist
1815 University Ave.

EXHIBIT 6 (Continued)

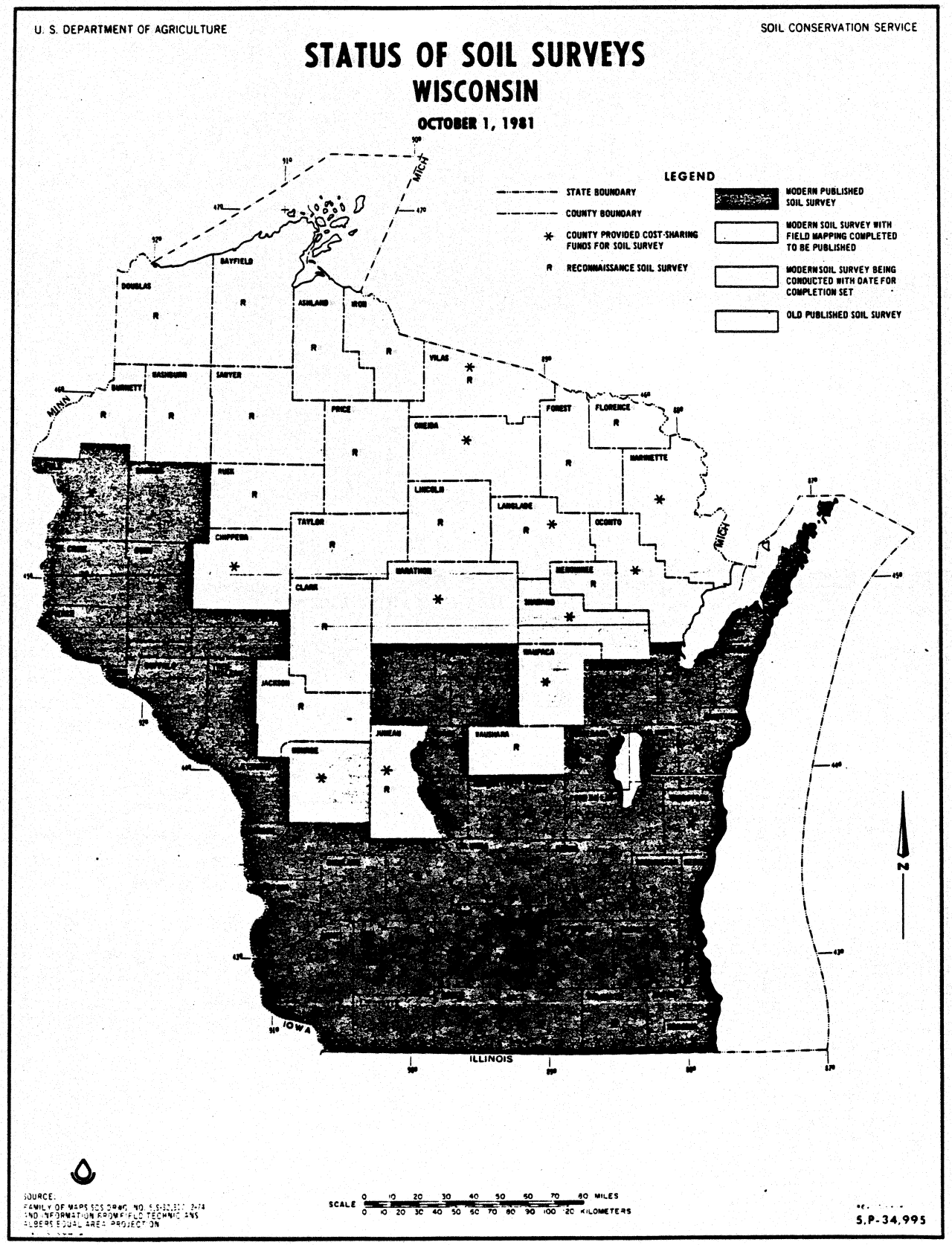


EXHIBIT 6 (Continued)

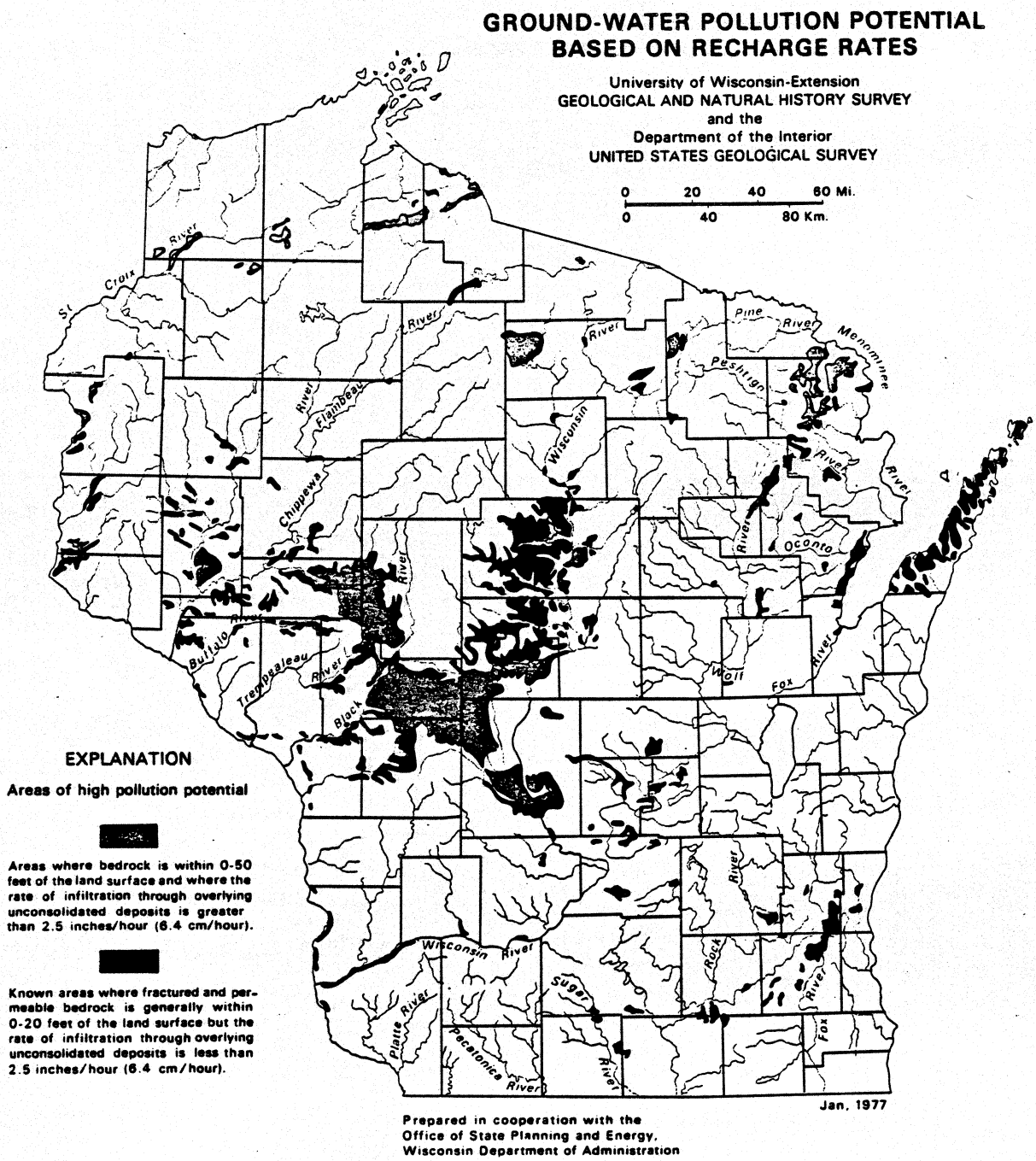


EXHIBIT 6 (Continued)

GROUND-WATER POLLUTION POTENTIAL BASED ON RECHARGE RATES

Ground water and surface water form our precious natural resource of fresh water. Ground-water supplies are replenished by infiltration of precipitation and surface-water sources downward through the soil, unconsolidated materials and bedrock. Generally it is suitable for human consumption and a wide variety of agricultural, industrial, and commercial uses. However, in some areas of the state, the physical characteristics of the bedrock and overlying unconsolidated materials allow for a rapid infiltration of water to the ground-water reservoir, creating a potential for pollution.

This map shows areas of the state where there is high potential for ground-water pollution. Generally, where precipitation and surface water move rapidly downward, contaminants can be carried directly to the water table. These are areas of high pollution potential and have been delineated on the basis of infiltration rates to the ground-water reservoir through permeable soil, unconsolidated material and, in some cases, bedrock.

The permeability of near-surface unconsolidated materials can be approximated by measuring infiltration rates of the soil. Where soil infiltration rates are greater than 2.5 inches/hour (6.4 cm/hour) and there is 50 feet or less of unconsolidated materials overlying bedrock the recharge rate to bedrock or the ground-water system can be rapid. The first category shown on the map meets these criteria. The soil is permeable and the underlying unconsolidated deposits are relatively thin. In these areas, if pollutants are present, there is not enough time for the natural physical and chemical processes to reduce or attenuate the amount and quality of the pollutants before they reach the ground-water system. The potential for pollution is lessened where deposits of low permeability such as clay are present in the subsurface materials.

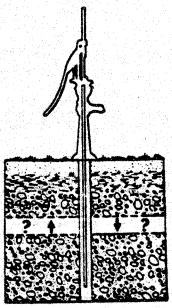
In some areas of Wisconsin, bedrock is at or near the surface and is highly fractured. Precipitation and surface water can move rapidly down to the ground-water reservoir along the fractures with little time for natural pollution attenuation processes to take place. In such areas the infiltration rate through soil and unconsolidated deposits may be slow but because these deposits are thin or absent and the underlying bedrock fractured, the net effect is one of rapid ground-water recharge. The second category on the map shows such areas. Fractured and permeable bedrock is within 20 feet of the land surface and soil infiltration rates are between 0.8 and 2.5 inches/hour (2.0 and 6.4 cm/hour). Similar conditions may exist in other areas of Wisconsin but remain unknown until detailed mapping is completed.

This map of "Ground-Water Pollution Potential Based on Recharge Rates" is intended to show those areas of the state, based on present knowledge, where the ground-water reservoir may easily become contaminated. Only large, regional areas are depicted so there may be considerable variation in potential for a specific locality. The placement of septic systems, drain fields, industrial wastes, sanitary landfills, agricultural wastes, road chemicals, and other potential pollutants should be done with care and with an individual appraisal made for each site.

University of Wisconsin-Extension
Geological and Natural History Survey
1815 University Avenue
Madison, Wisconsin 53706

The preparation of this report was financed in part through a comprehensive planning grant from the U.S. Department of Housing and Urban Development.

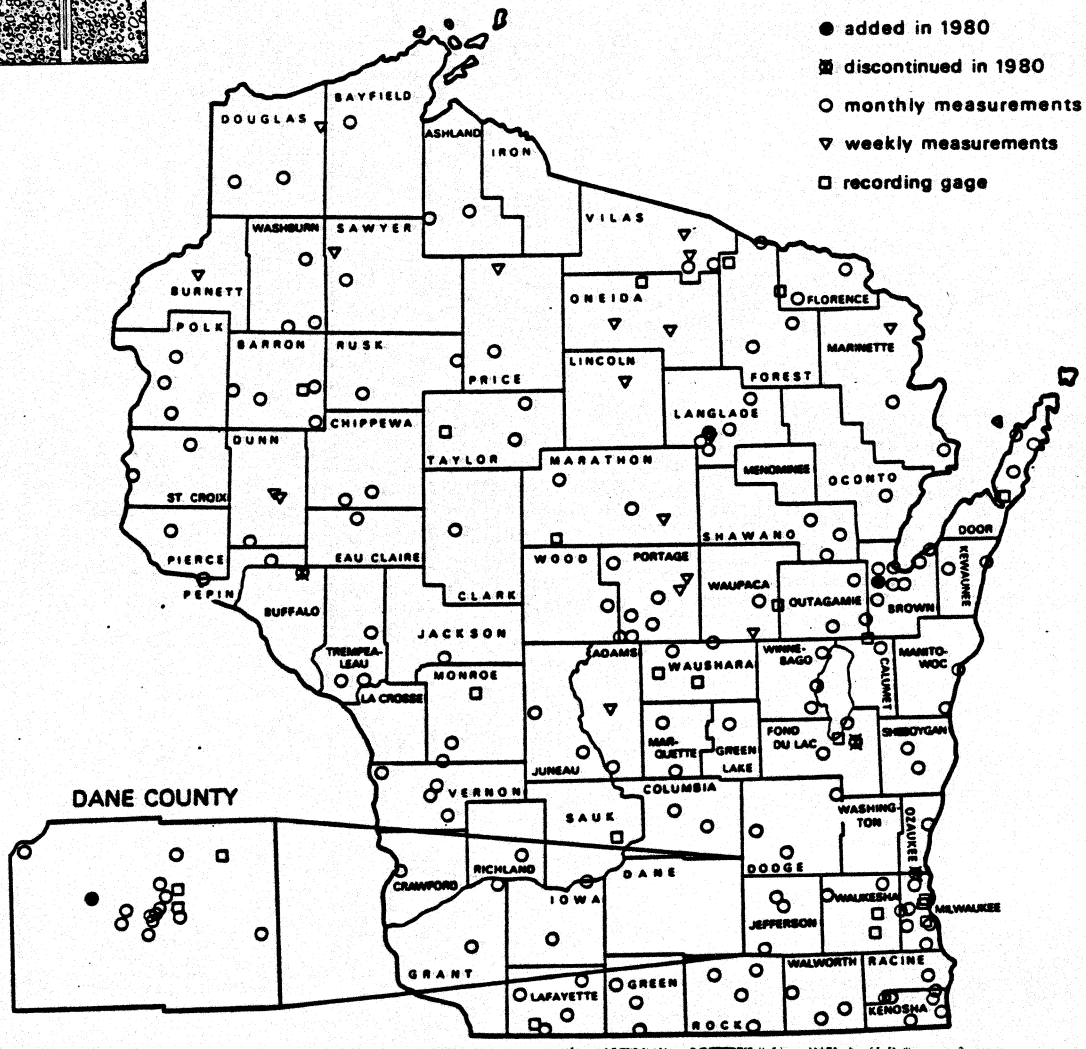
EXHIBIT 6 (Continued)



GROUND-WATER LEVELS IN WISCONSIN

ANNUAL SUMMARY 1980

by Alex Zaporozec



LOCATION OF OBSERVATION WELLS IN WISCONSIN, 1980

PREPARED BY
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GEOLOGICAL AND NATURAL HISTORY SURVEY
Water Resources Program
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Telephone: (608) 262-1705

In Cooperation with
U.S. DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY
Water Resources Division
Madison District Office
Telephone: (608) 262-2488

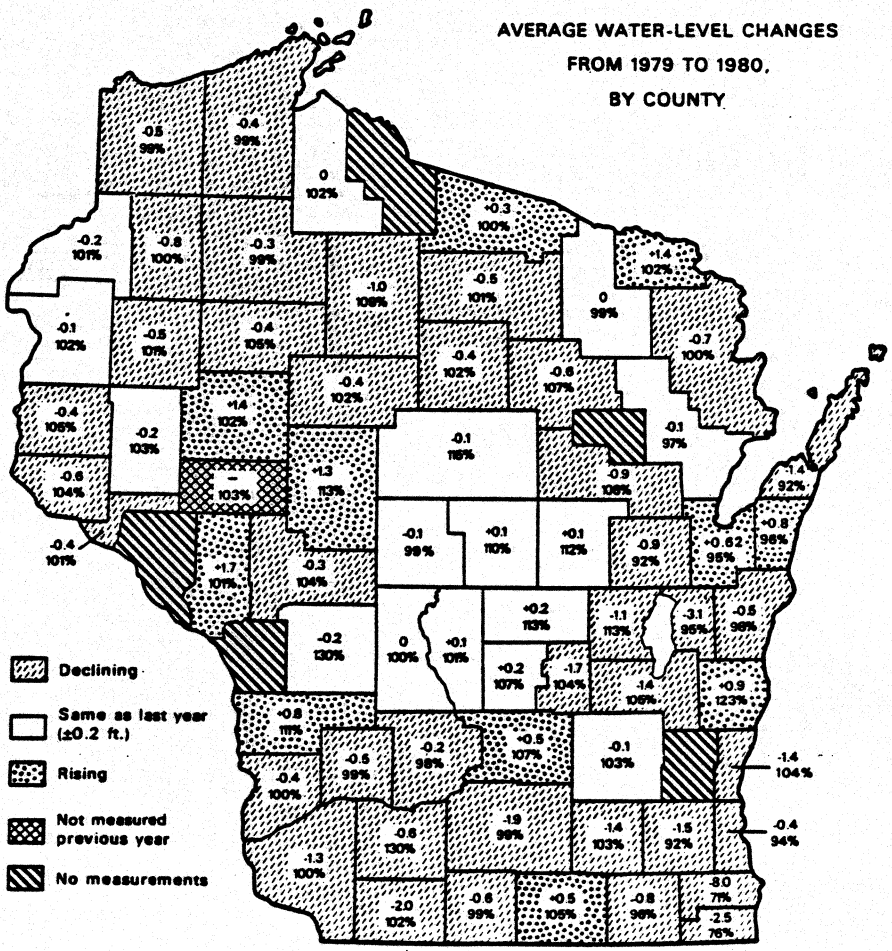
EXHIBIT 6. (Continued)

Locations of all observation wells shown on page 1 are available in the files of the U.S. Geological Survey, who operates the network, and the Wisconsin Geological and Natural History Survey. Measurements were made on 202 observation wells as compared to 204 wells measured in 1979. Two wells were added to the program; four wells were discontinued.

Water levels were lower at year's end in most counties of Wisconsin. The declines reflect the below-normal precipitation from February to July when the amount of precipitation was below the drought level (85% of normal). Despite extremely high rainfall in August and September water levels did not completely recover the loss from inadequate spring recharge.

The greatest declines occurred in the southern part of the state (1.3-2.5 feet) and in the heavily-pumped metropolitan areas of Madison, Green Bay, and SE Wisconsin (2.5-8.0 feet). In other areas, water levels declined only slightly (less than 1 foot). The central part of the state experienced little change in water levels; they were approximately the same as in 1979. Water levels rose in only 11 counties; and 6 counties were without measurements.

With respect to long-term averages, trends in water levels were mixed. Levels were generally average or above average in most of Wisconsin. They were below average in parts of NW, NE and SC Wisconsin, and continued to decline in the deep aquifers in the northeast, southeast and Madison area.



Difference from the 1979 water levels (+ or −) in feet and the percentage of long-term water level.

EXHIBIT 6 (Continued)

The year 1980 has been very unusual as far as the distribution of water-level fluctuations is concerned. Composite monthly mean levels were calculated to illustrate the pattern of distribution throughout the year. They do not represent average levels in the regions.

In most cases, the water levels did not follow traditional pattern of highest peak in spring, secondary peak in fall, and minimum levels at the end of winter. In 1980, water levels rose only slightly in the spring because there was no snow accumulation and spring rains (approximately 50% of normal) were not sufficient to recharge the ground-water reservoirs. Therefore the water levels extended their winter decline and reached minimum stages in July-August, with temporary respite in June which received slightly above-normal rainfall. The unusually high precipitation in August and September was reflected in the statewide rise of water levels which peaked in September-October with approximately 2-month lag behind precipitation (3 months in NW and SE), and provided badly needed recharge to ground water and replenishment of soil moisture.

The range of fluctuations was small during 1980. The largest difference between minimum and maximum levels was recorded in south central Wisconsin. Water levels in deep aquifers in east central and southeastern Wisconsin continued their downward trend. These declines are attributed to pumping rates which exceed recharge rates.

COMPOSITE MONTHLY WATER LEVELS IN 1980

(for climatic regions as shown on page 4)

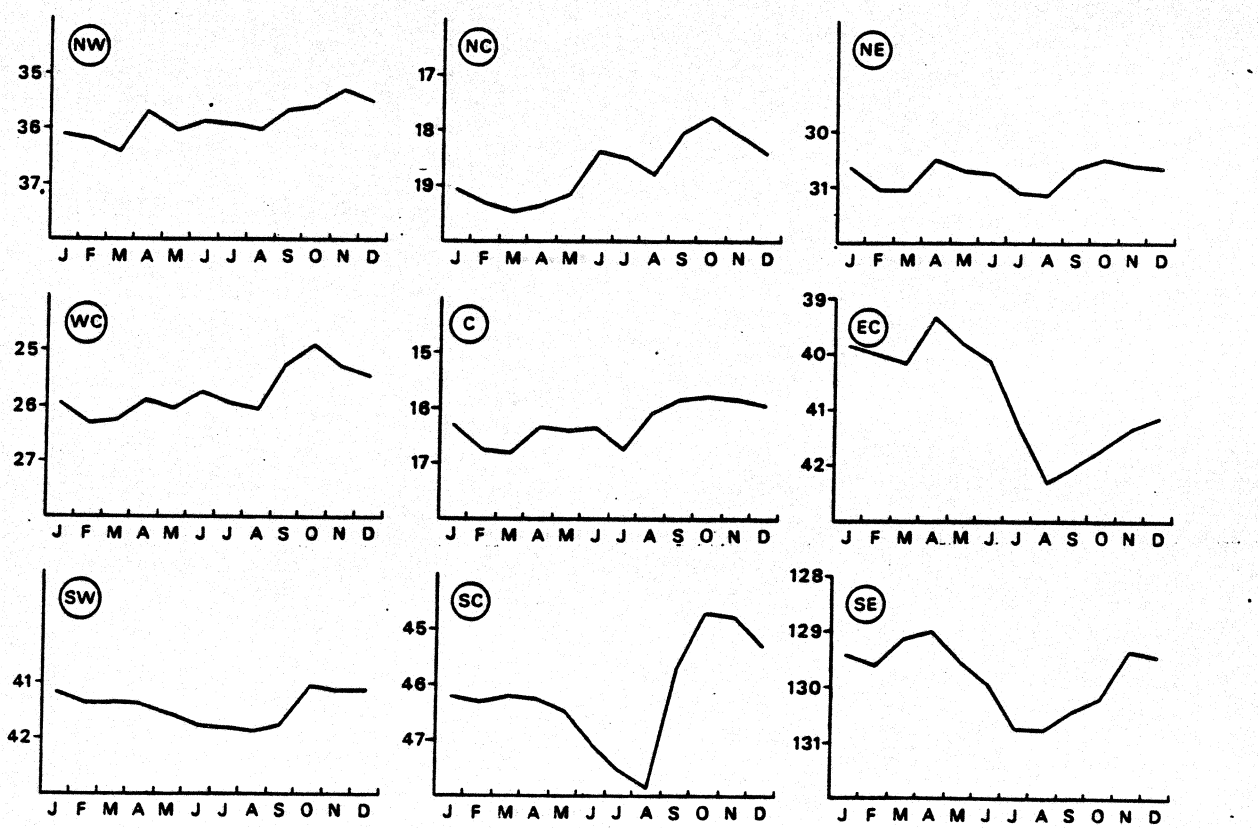
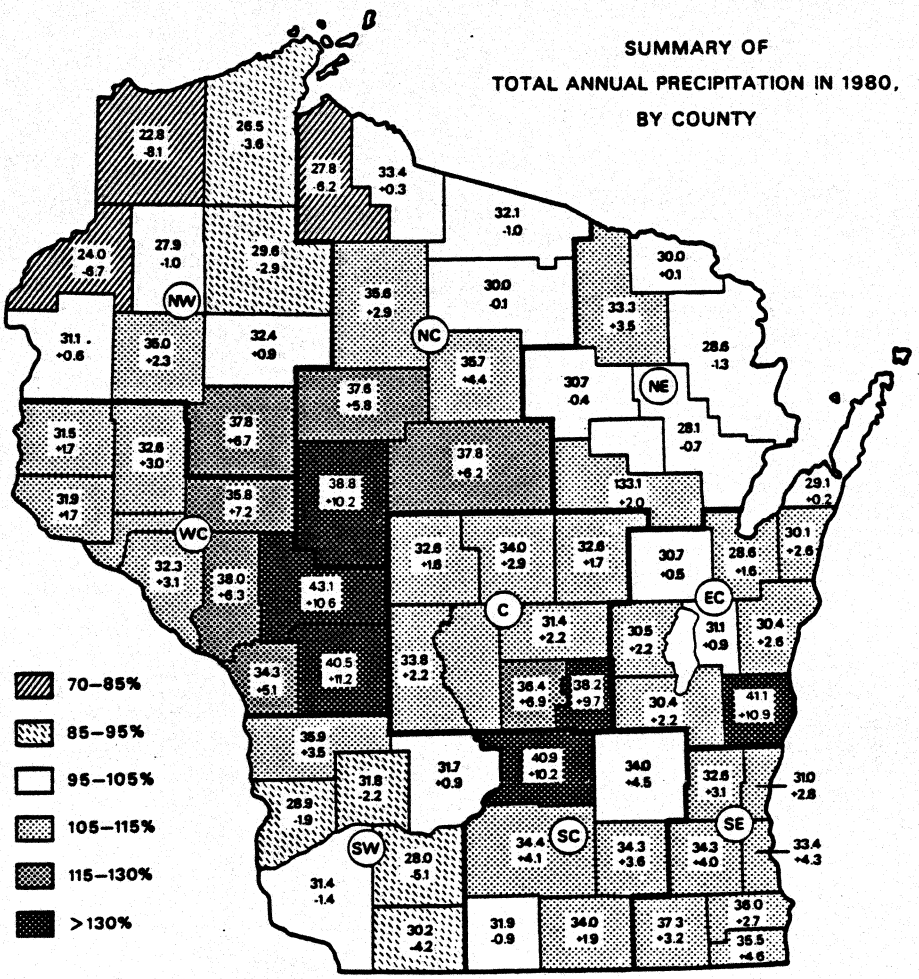


EXHIBIT 6 (Continued)

Almost all recharge to Wisconsin's aquifers comes from precipitation that infiltrates into the ground at or near the point where it falls. The amount and distribution of rainfall received in one year would generally determine ground-water conditions in the following year.

Last year could be characterized as the year which almost became a drought year. Only the abnormal rainfall in August and September prevented it (precipitation without these two months was 84% of normal) and brought the total precipitation nine percent above normal. That does not mean that adequate precipitation occurred statewide. Various parts of the state were affected differently and some counties did have drought (Ashland, Burnett, and Douglas). The northwestern, northeastern and southwestern counties generally received less rainfall than the rest of the state.

Based on precipitation trends in 1980, we can expect that there will be little change in water levels in 1981, and that they will remain generally average in most of Wisconsin. Slight decline will continue in parts of the northwest, northeast, and southwest; and water levels probably will rise in most of west central and central parts of the state. Gradual decline of levels will continue in areas of heavy pumping around Green Bay, Kenosha-Racine, Milwaukee-Waukesha and Madison, and the pumping effects will continue to extend into neighboring counties of Calumet, Kewaunee, Outagamie, Walworth, and Ozaukee.



Average precipitation in inches, departure (+ or –) from normal precipitation in inches and the percentage of normal precipitation.

EXHIBIT 7

TRANSACTION INTERVIEW FORM

Name of Respondent _____ Property # _____

County _____

Date _____

Introduction - Name and Company

We are in the process of valuing property on the North branch of the Flambeau for possible sale. A review of recent transactions in the courthouse shows that you were recently involved in a sale.

Could you help us complete our information and develop a list of value contributing characteristics of riverfront property?

1. What use did you plan on putting the property to at the time that you purchased it?
(Probe to get a buyer profile)

1a. Was zoning a factor that you considered when you purchased the property?

If applicable...
2. Have you been able to use the property in the manner for which you purchased it?

If not, why?

If applicable...
3. Did you purchase the property subject to an acceptable soil percolation test?

EXHIBIT 7 (Continued)

4. Can you tell me a little bit about the physical characteristics of the land?

   a. River front footage - amount and type (i.e., sand beach, marsh, etc.)

   b. Size of parcel

   c. Percent of lot that is buildable

   d. Where is your closest road access?

   e. Amount of time and/or miles to nearest town.

5. What characteristics about the property and/or area influenced you to purchase it over another parcel?

6. How did you price the property or how did you determine a reasonable price to pay for the property? What did you find asking prices to be on this type of property?

7. Verify price paid for property and down payment and date.

8. Financing?

   If warranty deed: Did you obtain market financing for your purchase of the property?

   If land contract: Could you give me the financing terms under which you purchased the property? (i.e. term, interest rate, amount, any special payment provisions such as interest only)

EXHIBIT 8

CODING OF COMPARABLE SALES

KEY FOR "FLAM.DAT" CODING

DATE	1	2	3	4	5	6	7	8	9	10	11	12
1981	10	9	8	7	6	5	4	3	2	1		
1980	22	21	20	19	18	17	16	15	14	13	12	11
1979	34	33	32	31	30	29	28	27	26	25	24	23
1978	46	45	44	43	42	41	40	39	38	37	36	35
1977	58	57	56	55	54	53	52	51	50	49	48	47

RIV

0 = Flambeau
1 = North Flambeau
2 = South Flambeau
3 = East Chippewa
4 = Chippewa

AC

0 = None
1 = Yes

TYPE

0 = Unimproved road
1 = County road
2 = Secondary highway

LOC

0 = 34N, 8W-7W
33N, 8W-7W
1 = 35-37N, 7W
2 = 40N, 5W-4W
3 = 42N, 2W
4 = 41N, 1E-2E
40N, 1W-1E
5 = 38N, 2W-1W
6 = 38N, 3W
37N, 2W

DISTANCE TO TOWN (DT)

SIZE (SZ)

0 = Under 1,500
1 = 1,500 or over

VEG

0 = Less than 50% mature trees
1 = At least 50% mature trees

DOC

0 = Land Contract
1 = Warranty Deed

BUYER MOTIVE

0 = Purchased for immediate construction of year round home
1 = Purchased for immediate construction of seasonal residence - recreational
2 = Purchased for some future use - to build on, to sell, etc.
3 = Purchased for immediate return - i.e. logging, subdividing
4 = Not specified by buyer or seller

```
 1=A01 3 3 25000 199 5900 1 43 067 1 1 1 03 1 4
 2=A02 3 3 17000 037 1800 0 07 075 1 0 1 03 0 3
 3=S03 2 3 04500 070 1205 1 27 090 1 1 1 20 1 4
 4=S04 2 3 24000 028 1300 0 18 075 1 0 1 14 0 2
 5=S06 1 4 12000 087 2700 1 54 095 1 1 1 17 1 4
 6=S07 1 4 12500 003 0700 1 13 095 1 1 1 15 0 2
 7=S08 1 4 27500 031 0900 1 35 095 1 1 1 16 1 4
 8=S09 1 4 18000 138 2640 1 50 075 1 0 1 14 1 4
 9=S10 1 4 07100 025 1320 1 33 095 1 1 2 06 0 0
10=R12 0 4 26500 030 2200 1 14 095 1 1 2 01 0 0
11=R12 0 4 22000 030 2200 1 31 095 1 1 2 01 1 1
12=R13 0 4 20000 162 5300 0 10 050 1 1 0 03 1 4
13=R14 0 4 12000 028 0657 0 06 090 1 1 1 06 1 4
14=R15 0 4 18000 035 1320 0 20 095 1 1 0 06 0 2
15=R16 0 4 50000 183 7250 1 06 050 0 1 1 08 1 2
16=R18 0 4 37500 094 1000 0 06 085 0 1 2 16 1 4
17=P06 4 2 10000 026 0900 1 21 095 1 1 1 04 1 2
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19=P14 5 2 08000 005 0490 1 08 020 1 1 0 11 1 4
20=P03 5 2 17000 058 1200 0 61 065 1 1 1 11 1 1
21=P18 5 2 10000 028 0550 0 20 070 1 1 0 13 1 2
22=P20 5 2 22500 159 0369 0 15 090 1 0 1 15 1 4
23=P33 6 2 09000 066 2640 0 16 095 1 0 1 18 1 2
24=P05 6 1 27000 142 1320 1 30 095 0 0 0 24 1 1
```

EXHIBIT 9

CALCULATIONS TO INDICATE MARKET VALUE

```
     1=/PROBLEM    TITLE IS 'FLAMBEAU RIVER COMPARABLES'.
     2=/INPUT       VARIABLES ARE 15.
     3=             FILE IS 'FLAM.DAT'.
     4=             FORMAT IS '(1X,F2.0,2F2.0,F6.0,F4.0,F5.0,F2.0,F3.0,F4.0,3F2.0,F3.0,F2.0,2X)'.
     5=/VARIABLE    NAMES ARE ID, LOC,RIV,PRICE,ACRES,RFF,DOC,DATE,
     6=              PCTBLD,VEG,ACCESS,TYPE,DIST,SIZE,BM,PAC,FFAC,PFA,PAFA,LGPRICE.
     7=             ADD= 5
     8=            LABEL IS ID.
     9=/TRANSFORM LGPRICE= LOG(PRICE).
    10=            PAC = PRICE / ACRES.
    11=           FFAC = RFF / ACRES.
    12=           PFA = (PRICE / RFF) / ACRES.
    13=           PAFA = (PRICE / ACRES) / (RFF / ACRES).
    14=/REGRESS   DEPENDENT IS PAC.
    15=INDEPENDENT ARE 3,5,7,8,11,17.
    16=/PLOT YVAR ARE PRICE,PAC.
    17=      XVAR ARE ACRES, ACRES.
    18=      NORMAL.
    19=       SIZE IS 99,32
    20=/END
#15
    15=INDEPENDENT ARE 3,5,7,8,11,17.
#C/8,11/8,10,11/
    15=INDEPENDENT ARE 3,5,7,8,10,11,17.
#STOP
 20 lines - PA.CTL<60>

Ready

BUS BMDP9R/GO
BMDP9R   V2.1

Name of File containing Control Language <SY:P9R.CTL>? PA.CTL
Name of File for Output Listing <PA.OUT>?

STOP -- Program terminated normally

Ready

DIS PA.OUT
```

EXHIBIT 9 (Continued)

```
BMDP9R  V2.1      4-Nov-81  10:43:27

Program revised: December 1979   Manual revised: July 1979
(c)1979, The Regents of the University of California
Licensed for PDP-11 by Software Development Inc.

Site: (2-080) U.W. School of Business
Expiration date: April 1982


-- IF THERE ARE FEWER THAN THREE INDEPENDENT VARIABLES, THEN
   METHOD=NONE. WILL BE USED.
-- IF STATISTICS. IS STATED IN THE PLOT PARAGRAPH, THEN
   STATISTICS AS IN BMDP6D WILL ACCOMPANY EACH PLOT.
-- TO LIMIT THE NUMBER OF VARIABLES IN THE REPORTED SUBSETS,
   IN THE PRINT PARAGRAPH STATE MAXVAR=THE MAXIMUM NUMBER OF
   VARIABLES THAT YOU DESIRE.  A SUBSET WITH GREATER THAN
   MAXVAR VARIABLES WILL NOT BE REPORTED UNLESS IT IS ONE
   OF THE BEST SUBSETS BY THE CP OR ADJUSTED R-SQUARED
   CRITERIA.
-- TO OBTAIN THE COVARIANCE MATRIX OF THE REGRESSION
   COEFFICIENTS, INCLUDE CREG IN THE MATRIX STATEMENT OF
   THE PRINT PARAGRAPH, E.G.,
         MATRIX=CORR,RESID,CREG.
-- IF RESIDUALS ARE COMPUTED OR IF YOU STATE HISTOGRAM. IN
   THE PLOT PARAGRAPH, A HISTOGRAM OF THE STANDARDIZED
   (STUDENTIZED) RESIDUALS WILL BE MADE.

PROGRAM CONTROL INFORMATION:

    /PROBLEM    TITLE IS 'FLAMBEAU RIVER COMPARABLES'.
    /INPUT       VARIABLES ARE 15.
                 FILE IS 'FLAM.DAT'.
                 FORMAT IS '(A3,2F2.0,F6.0,F4.0,F5.0,F2.0,F3.0,F4.0,3F2.0,F3.0,F2.0,F2.0)'.
    /VARIABLE    NAMES ARE ID, LOC,RIV,PRICE,ACRES,RFF,DOC,DATE,
                  PCTBLD,VEG,ACCESS,TYPE,DIST,SIZE,BM,PAC,FFAC,PFA,PAFA,LGPRICE.
                 ADD= 5
                LABEL IS ID.
    /TRANSFORM LGPRICE= LOG(PRICE).
                PAC = PRICE / ACRES.
               FFAC = RFF / ACRES.
               PFA = (PRICE / RFF) / ACRES.
               PAFA = (PRICE / ACRES) / (RFF / ACRES).
    /REGRESS   DEPENDENT IS PAC.
    INDEPENDENT ARE 2,3,5,7,8,10,11,17.
    /PLOT NORMAL.
          SIZE IS 99,32
    /END
```

EXHIBIT 9 (Continued)

```
PROBLEM TITLE:

FLAMBEAU RIVER COMPARABLES

NUMBER OF VARIABLES TO READ IN. . . . . .      15
NUMBER OF VARIABLES ADDED BY TRANSFORMATIONS. .     5
TOTAL NUMBER OF VARIABLES . . . . . .      20
NUMBER OF CASES TO READ IN. . . . . .*TO EOF*
CASE LABELING VARIABLES . . . . . .ID
LIMITS AND MISSING VALUE CHECKED BEFORE TRANSFORMATIONS
BLANKS ARE. . . . . . ZEROS
REWIND INPUT UNIT PRIOR TO READING. . DATA. . .     YES
DATA READ FROM. . . . . .FLAM.DAT


*** CONTROL LANGUAGE TRANSFORMATIONS ARE PERFORMED ***

INPUT FROM FORMATTED FILE:

INPUT FORMAT DESCRIPTOR:
    (A3,2F2.0,F6.0,F4.0,F5.0,F2.0,F3.0,F4.0,3F2.0,F3.0,F2.0,F2.0)

    VARIABLE  CARD   COLUMN   DESCRIPTOR    VARIABLE  CARD   COLUMN   DESCRIPTOR

  1 ID          1       1     A3          2 LOC         1       4     F2.0
  3 RIV         1       6     F2.0        4 PRICE       1       8     F6.0
  5 ACRES       1      14     F4.0        6 RFF         1      18     F5.0
  7 DOC         1      23     F2.0        8 DATE        1      25     F3.0
  9 PCTBLD      1      28     F4.0       10 VEG         1      32     F2.0
 11 ACCESS      1      34     F2.0       12 TYPE        1      36     F2.0
 13 DIST        1      38     F3.0       14 SIZE        1      41     F2.0
 15 BM          1      43     F2.0

VARIABLES TO BE USED IN THIS PROBLEM:
       2 LOC         3 RIV         4 PRICE       5 ACRES       6 RFF
       7 DOC         8 DATE        9 PCTBLD     10 VEG        11 ACCESS
      12 TYPE       13 DIST       14 SIZE       15 BM         16 PAC
      17 FFAC       18 PFA        19 PAFA       20 LGPRICE

  INDEPENDENT VARIABLES ARE
       2  LOC        3  RIV        5  ACRES      7  DOC        8  DATE
      10  VEG       11  ACCESS    17  FFAC

  DEPENDENT VARIABLE. . . . . .     16 PAC
  NUMBER OF 'BEST' REGRESSIONS. . . . . .       5
  SELECTION CRITERION . . . . . . CP
  WEIGHT VARIABLE . . . . . .
  PRECISION . . . . . . DOUBLE
  TOLERANCE FOR MATRIX INVERSION. . . . . 0.0001000

  PRINT CORRELATION MATRIX. . . . . .YES
  PRINT COVARIANCE MATRIX . . . . . .NO
  PRINT RESIDUALS . . . . . .NO
  PRINT COVARIANCE MATRIX FOR REGRESSION COEFS. .NO
  PRINT CORRELATION MATRIX FOR REGRESSION COEFS .NO
  MAX. NO. OF VARS. IN ANY REPORTED SUBSET  . . .   8
```

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FLAMBEAU RIVER COMPARABLES

DATA AFTER TRANSFORMATIONS FOR FIRST 5 CASES
CASES WITH ZERO WEIGHTS AND MISSING DATA NOT INCLUDED.

LABEL	CASE NUMBER	WEIGHT	2 LOC	3 RIV	5 ACRES	7 DOC	8 DATE	10 VEG	11 ACCESS
		17 FFAC	16 PAC						
A01	1	1.00000	3.00000	3.00000	199.00000	1.00000	43.00000	1.00000	1.00000
		29.64824	125.62814						
A02	2	1.00000	3.00000	3.00000	37.00000	0.00000	7.00000	1.00000	0.00000
		48.64865	459.45947						
S03	3	1.00000	2.00000	3.00000	70.00000	1.00000	27.00000	1.00000	1.00000
		17.21428	64.28571						
S04	4	1.00000	2.00000	3.00000	28.00000	0.00000	18.00000	1.00000	0.00000
		46.42857	857.14288						
S06	5	1.00000	1.00000	4.00000	87.00000	1.00000	54.00000	1.00000	1.00000
		31.03448	137.93103						

NUMBER OF CASES READ. 24

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FLAMBEAU RIVER COMPARABLES

UNIVARIATE SUMMARY STATISTICS

VARIABLE	MEAN	STANDARD DEVIATION	COEFFICIENT OF VARIATION	SMALLEST VALUE	LARGEST VALUE	SMALLEST STANDARD SCORE	LARGEST STANDARD SCORE	SKEWNESS	KURTOSIS
2 LOC	2.29167	2.17654	0.949762	0.00000	6.00000	-1.05	1.70	0.39	-1.48
3 RIV	3.08333	1.05981	0.343721	1.00000	4.00000	-1.97	0.86	-0.58	-1.20
5 ACRES	70.75000	60.04075	0.848632	3.00000	199.00000	-1.13	2.14	0.83	-0.83
7 DOC	0.54167	0.50898	0.939651	0.00000	1.00000	-1.06	0.90	-0.16	-2.06
8 DATE	23.50000	15.83612	0.673877	6.00000	61.00000	-1.11	2.37	0.84	-0.36
10 VEG	0.83333	0.38069	0.456832	0.00000	1.00000	-2.19	0.44	-1.68	0.86
11 ACCESS	0.75000	0.44233	0.589768	0.00000	1.00000	-1.70	0.57	-1.08	-0.86
17 FFAC	45.06147	45.97672	1.020311	2.32075	233.33333	-0.93	4.09	2.83	8.88
16 PAC	592.40502	840.23593	1.418347	64.28571	4166.66650	-0.63	4.25	3.22	10.77

VALUES FOR KURTOSIS GREATER THAN ZERO INDICATE DISTRIBUTIONS
WITH HEAVIER TAILS THAN THE NORMAL DISTRIBUTION.

EXHIBIT 9 (Continued)

EXHIBIT 9 (Continued)

CORRELATIONS

		LOC	RIV	ACRES	DOC	DATE	VEG	ACCESS	FFAC	PAC
		2	3	5	7	8	10	11	17	16
LOC	2	1.000								
RIV	3	-0.935	1.000							
ACRES	5	0.012	0.007	1.000						
DOC	7	-0.188	0.235	0.070	1.000					
DATE	8	0.117	-0.026	0.156	0.321	1.000				
VEG	10	-0.044	0.251	-0.323	0.037	0.231	1.000			
ACCESS	11	-0.418	0.325	-0.238	0.241	0.031	0.000	1.000		
FFAC	17	-0.164	0.191	-0.451	0.287	-0.236	0.154	0.224	1.000	
PAC	16	-0.127	0.156	-0.471	0.220	-0.254	0.117	0.192	0.948	1.000

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FLAMBEAU RIVER COMPARABLES

FOR EACH SUBSET SELECTED BY YOUR CRITERION, THE R-SQUARED, ADJUSTED R-SQUARED, MALLOWS' CP, AND THE VARIABLE NAMES ARE PRINTED. THE REGRESSION COEFFICIENTS AND T-STATISTICS ARE PRINTED TO THE RIGHT OF THE VARIABLE NAMES.

MANY OTHER SUBSETS MAY ALSO BE REPORTED THAT ARE NOT ACCOMPANIED BY REGRESSION COEFFICIENTS AND T-STATISTICS. SOME OF THESE SUBSETS MAY BE QUITE GOOD, ALTHOUGH THEY ARE NOT NECESSARILY BETTER THAN ANY SUBSET THAT HAS NOT BEEN PRINTED.

**** SUBSETS WITH 1 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP	VARIABLE	COEFFICIENT	T-STATISTIC
0.897978	0.893341	-3.47	17 FFAC	17.3179	13.92
			INTERCEPT	-187.967	
0.222082	0.186722	106.05	ACRES		
0.064465	0.021940	131.60	DATE		
0.048197	0.004933	134.23	DOC		
0.036780	-0.007002	136.08	ACCESS		
0.024249	-0.020104	138.11	RIV		
0.016078	-0.028646	139.44	LOC		
0.013673	-0.031160	139.83	VEG		

EXHIBIT 9 (Continued)

**** SUBSETS WITH 2 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP			
0.900998	0.891569	-1.96	VARIABLE	COEFFICIENT	T-STATISTIC
			7 DOC	-94.7068	-0.80
			17 FFAC	17.6191	13.45
			INTERCEPT	-150.237	
0.900365	0.890876	-1.86	VARIABLE	COEFFICIENT	T-STATISTIC
			5 ACRES	-0.766160	-0.71
			17 FFAC	16.8664	11.96
			INTERCEPT	-113.414	
0.898939	0.889314	-1.62	VARIABLE	COEFFICIENT	T-STATISTIC
			8 DATE	-1.69203	-0.45
			17 FFAC	17.1803	13.17
			INTERCEPT	-142.002	
0.898835	0.889200	-1.61	VARIABLE	COEFFICIENT	T-STATISTIC
			2 LOC	11.4508	0.42
			17 FFAC	17.4070	13.54
			INTERCEPT	-218.221	
0.898823	0.889187	-1.61	VEG	FFAC	
0.898662	0.889011	-1.58	RIV	FFAC	
0.898400	0.888724	-1.54	ACCESS	FFAC	

**** SUBSETS WITH 3 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP			
0.902394	0.887753	-0.18	ACRES	VEG	FFAC
0.902370	0.887726	-0.18	ACRES	DOC	FFAC
0.901865	0.887145	-0.10	DOC	VEG	FFAC
0.901452	0.886670	-0.03	LOC	DOC	FFAC
0.901251	0.886439	0.00	RIV	DOC	FFAC
0.901104	0.886270	0.03	DOC	ACCESS	FFAC
0.901076	0.886238	0.03	DOC	DATE	FFAC
0.899258	0.884147	0.32	DATE	ACCESS	FFAC

**** SUBSETS WITH 4 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP				
0.904154	0.883976	1.53	ACRES	DOC	VEG	FFAC
0.902970	0.882543	1.72	LOC	ACRES	VEG	FFAC
0.902767	0.882297	1.76	LOC	ACRES	DOC	FFAC
0.902715	0.882234	1.76	ACRES	DOC	ACCESS	FFAC
0.902554	0.882038	1.79	RIV	ACRES	DOC	FFAC
0.902481	0.881951	1.80	ACRES	DOC	DATE	FFAC
0.901180	0.880376	2.01	DOC	DATE	ACCESS	FFAC

EXHIBIT 9 (Continued)

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FLAMBEAU RIVER COMPARABLES

STATISTICS FOR 'BEST' SUBSET	
MALLOWS' CP	-3.47
SQUARED MULTIPLE CORRELATION	0.89798
MULTIPLE CORRELATION	0.94762
ADJUSTED SQUARED MULT. CORR.	0.89334
RESIDUAL MEAN SQUARE	75300.813385
STANDARD ERROR OF EST.	274.409937
F-STATISTIC	193.64
NUMERATOR DEGREES OF FREEDOM	1
DENOMINATOR DEGREES OF FREEDOM	22
SIGNIFICANCE	0.0000

VARIABLE NO.	NAME	REGRESSION COEFFICIENT	STANDARD ERROR	STAND. COEF.	T-STAT.	2TAIL SIG.	TOL-ERANCE	CONTRIBUTION TO R-SQUARED
	INTERCEPT	-0.187967D+03	0.792618D+02	-0.224	-2.37	0.027		
17	FFAC	0.173179D+02	0.124451D+01	0.948	13.92	0.000	1.000000	0.897978

THE CONTRIBUTION TO R-SQUARED FOR EACH VARIABLE IS THE AMOUNT BY WHICH R-SQUARED WOULD BE REDUCED IF THAT VARIABLE WERE REMOVED FROM THE REGRESSION EQUATION.

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FLAMBEAU RIVER COMPARABLES

SUMMARY STATISTICS FOR RESIDUALS

(CASES WITH POSITIVE WEIGHT)	
AVERAGE RESIDUAL	0.0000
RESIDUAL MEAN SQUARE	75300.81338484
AVERAGE DELETED RESIDUAL	44.6455
AVE. SQUARED DELETED RESIDUAL (PREDICTION MEAN SQUARE)	150256.32648637
SERIAL CORRELATION	0.0528
DURBIN-WATSON STATISTIC	1.8447

EXHIBIT 9 (Continued)

**** SUBSETS WITH 5 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP						
0.905367	0.879080	3.33	LOC	RIV	ACRES	VEG	FFAC	
0.904687	0.878211	3.44	ACRES	DOC	VEG	ACCESS	FFAC	
0.904498	0.877969	3.48	LOC	ACRES	DOC	VEG	FFAC	
0.904161	0.877539	3.53	ACRES	DOC	DATE	VEG	FFAC	
0.904159	0.877537	3.53	RIV	ACRES	DOC	VEG	FFAC	
0.901386	0.873993	3.98	RIV	DOC	DATE	ACCESS	FFAC	

**** SUBSETS WITH 6 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP						
0.907393	0.874708	5.01	LOC	RIV	ACRES	DOC	VEG	FFAC
0.904789	0.871185	5.43	LOC	ACRES	DOC	VEG	ACCESS	FFAC
0.904718	0.871089	5.44	RIV	ACRES	DOC	VEG	ACCESS	FFAC
0.904699	0.871064	5.44	ACRES	DOC	DATE	VEG	ACCESS	FFAC
0.901809	0.867154	5.91	LOC	RIV	DOC	DATE	ACCESS	FFAC

**** SUBSETS WITH 7 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP							
0.907428	0.866928	7.00	LOC	RIV	ACRES	DOC	VEG	ACCESS	FFAC
0.907399	0.866886	7.01	LOC	RIV	ACRES	DOC	DATE	VEG	FFAC
0.905980	0.864846	7.24	LOC	RIV	ACRES	DATE	VEG	ACCESS	FFAC
0.904791	0.863137	7.43	LOC	ACRES	DOC	DATE	VEG	ACCESS	FFAC
0.904739	0.863062	7.44	RIV	ACRES	DOC	DATE	VEG	ACCESS	FFAC
0.903590	0.861410	7.62	LOC	RIV	DOC	DATE	VEG	ACCESS	FFAC
0.903307	0.861004	7.67	LOC	RIV	ACRES	DOC	DATE	ACCESS	FFAC
0.391562	0.125370	90.59	LOC	RIV	ACRES	DOC	DATE	VEG	ACCESS

**** SUBSETS WITH 8 VARIABLES ****

R-SQUARED	ADJUSTED R-SQUARED	CP							
0.907431	0.858061	9.00	LOC	RIV	ACRES	DOC	DATE	VEG	ACCESS	FFAC

EXHIBIT 9 (Continued)

HISTOGRAM OF STANDARDIZED (STUDENTIZED) RESIDUALS
EACH BIN OF THE HISTOGRAM IS LABELED WITH ITS LOWER LIMIT.
NOTE THAT IF THE COUNT FOR A BIN EXCEEDS 100, ONLY
100 ASTERISKS WILL BE PRINTED.

-1.8	1	*
-1.6	0	
-1.4	2	**
-1.2	0	
-1.0	2	**
-0.8	5	*****
-0.6	0	
-0.4	0	
-0.2	3	***
0.0	1	*
0.2	1	*
0.4	1	*
0.6	2	**
0.8	2	**
1.0	1	*
1.2	0	
1.4	1	*
1.6	0	
1.8	0	
2.0	1	*
2.2	1	*

16.77 IS THE MAXIMUM VALUE OF MAHALANOBIS DISTANCE AMONG CASES WITH POSITIVE CASE WEIGHT. THIS OCCURRED FOR CASE NUMBER 6, CASE LABEL = S07

2.39 IS THE LARGEST STANDARDIZED RESIDUAL (IN ABSOLUTE VALUE) AMONG CASES WITH POSITIVE CASE WEIGHT. THIS OCCURRED FOR CASE NUMBER 6, CASE LABEL = S07

9.59 IS THE MAXIMUM VALUE OF COOK'S DISTANCE AMONG CASES WITH POSITIVE WEIGHT. THIS OCCURRED FOR CASE NUMBER 6, CASE LABEL = S07
IF THIS CASE WERE OMITTED, THE REGRESSION COEFFICIENTS WOULD MOVE FROM THE VALUES REPORTED ABOVE TO THE EDGE OF A 99.47 PERCENT CONFIDENCE ELLIPSOID.

COMPARISON OF ESTIMATES OF REGRESSION COEFFICIENTS
(RELATIVE DIFFERENCE IS DIFFERENCE DIVIDED BY ORDINARY COEF.
STANDARD ERROR IS THAT OF ORDINARY COEFFICIENT.)

	ORDINARY LEAST SQUARES	OMITTING CASE WITH LARGEST COOK DISTANCE	RELATIVE DIFFERENCE	DIFFERENCE DIVIDED BY STANDARD ERROR
INTERCEPT	-187.966864	-6.172404	0.9672	-2.2936
17 FFAC	17.317941	12.018058	0.3060	4.2586

NUMERICAL CONSISTENCY CHECK

RESIDUAL MEAN SQUARES ARE COMPUTED FROM BOTH COVARIANCE MATRIX AND RESIDUALS, AND RELATIVE DIFFERENCE (DIFFERENCE DIVIDED BY SMALLER OF TWO ESTIMATES) IS COMPUTED.

RESIDUAL MEAN SQUARES COMPUTED FROM

COVARIANCE MATRIX	RESIDUALS	RELATIVE DIFFERENCE
0.753008D+05	0.753008D+05	-0.579751D-15

APPENDIX C

THE SUBJECT PROPERTY

THE NORTH FORK OF THE FLAMBEAU RIVER FROM THE DAM AT THE TURTLE FLAMBEAU FLOWAGE SOUTHWEST TO SECTION 32, TOWNSHIP 41 NORTH, RANGE 1 EAST