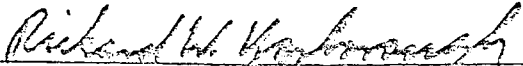



(Concurring signatures continued)


Richard W. Yarbrough, Commissioner


Margaret M. Pierce, Commissioner


Theodore R. McKelvin, Commissioner

ADDITIONAL FINDINGS OF FACT AS TO
VALUE DOCKET NOS. 18-E AND 58

The Commission makes the following additional findings of fact which are supplemental to the findings numbered 1 through 26 heretofore entered in the above consolidated docket: (7 Ind. Cl. Comm. 576 (1959))

27. The legal description of Royce Area 205 ceded by plaintiffs' predecessors in interest to the United States on March 28, 1836, is:

"All the tract of country within the following boundaries: Beginning at the mouth of Grand River of Lake Michigan on the N. bank thereof and following up the same to the line called for in the first article of the treaty of Chicago of August 29, 1821; thence in a direct line to the head of Thunder Bay River; thence with the line established by the Treaty of Saginaw of September 24, 1819; to the mouth of said river; thence N.W. to the boundary line in Lake Huron between the U.S. and the British province of Upper Canada; thence north-westwardly following the said line as established by the Commissioners acting under the Treaty of Ghent, through the straits, and river St. Mary's to a point in Lake Superior

No. of the mouth of Getchy Seebing or Chocolate River; thence S. to the mouth of said river and up its channel to the source thereof; thence in a direct line to the head of the Skonawba River of Green Bay; thence down the S. bank of said river to its mouth; thence in a direct line through the ship channel into Green Bay to the outer part thereof; thence S. to a point in Lake Michigan W. of the North Cape or entrance of Grand River, and thence E. to the place of beginning at the Cape aforesaid, comprehending all the lands and islands within these limits not hereinafter reserved." (7 Stat. 491)

The land now being valued by the Commission is the above described tract less Royce Areas 21, 22, 23, 112 and 113; 16 Indian Reservations retained under the cession treaty of March 28, 1836; and areas designated 205-A, sub-areas "S" and "U" in the hearing before the Commission on the title phase of this case.

28. In Finding 26 herein the Commission concluded that petitioners' "predecessors in interest had original title on March 28, 1836, to 12,446,905 acres" within Royce Area 205 "and that from the cession of said acreage by the treaty of that date, 7 Stat. 491, the petitioner Indians reserved to themselves a total of 401,971 acres." This leaves a net acreage in Royce Area 205 of 12,044,934 acres to be valued in this phase of the litigation.

These 12,044,934 acres are located in the State of Michigan and are to be valued as of March 28, 1836. Of the 12,044,934 acres, 4,620,766 acres are located in the eastern portion of the Upper Peninsula of Michigan and 7,424,168 acres are located in the northern portion of the Lower Peninsula. These two peninsulas are separated by the Straits of Mackinac. The Lower Peninsula is surrounded on three sides by lakes St. Clair, Huron and Michigan. The Upper Peninsula is bordered by lakes Michigan, Huron, and Superior. The coastal line of the Upper and Lower Peninsulas is about 2,000 miles.

These lands comprise about one-third of the State of Michigan and lie

in part or all of 34 of Michigan's 83 counties.

29. The soil of Michigan is largely composed of glacial drift. The Upper Peninsula falls into two divisions approximating the west half and the east half. The east half has been referred to as the Eastern Lowlands. These have been described by Professor J. O. Veatch, a recognized authority on Michigan topography and soils, as follows:

"The Eastern Lowland has an elevation of approximately 600 to 900 feet above sea level for the greater part of the region, but some of the highland in Delta, Alger, and Marquette counties is probably elevated as much as 1100 or 1200 feet. The region is underlaid by Cambrian and Ordovician sediments, dolomites, limestones, shales, and sandstones--not highly disturbed but tilted eastward and southward forming successive soft rock lowlands, and hard rock highland with escarpment fronts. The old land surface was pretty largely obscured by glacial deposition and the greater part, that below approximately 900 feet in elevation, was covered by the glacial stages of the Great Lakes. The greater part of the land surface is smooth without strong relief, and is characterized by minor features such as rounded hills, shallow, dry depressions, lakes, and swamps. Locally there are prominent hills, high lake shore bluffs, plateau or tableland masses with bold fronts, and comparatively deep incisions made by stream cutting." (Def. Ex. 185-V, p. 2; Pet. Ex. 620, p. 2)

Professor Veatch has divided the Southern or Lower Peninsula into two divisions, the Southern Upland and the Northern Highland. These two divisions Professor Veatch says are

". . . not sharply defined but vaguely separated by a belt of slightly lower land extending from the westward limit of the Saginaw Bay lowland to Muskegon and Ottawa counties. . ."

However, the large majority of the subject lands lying within the Lower

Peninsula are located in the area termed by Veatch as the Northern Highland. He describes this area as follows:

"The Northern Highland has an elevation of approximately 1100 to 1400 feet, attains higher levels in a few places, and reaches a maximum of nearly 1700 feet. The surface consists mostly of flat, high, sandy plains, plateau crests with smooth and rolling topography, and rolling, hilly clay lands--in part roughly parallel or oriented ridges and valleys. In places the highland rises abruptly from skirting lowland plains and is broken into segments by deep, wide valleys. The fronts may be broken by short, closely spaced drainage hollows and, at wider intervals, by deep re-entrant valleys; in places the descent from the crest of the valley floor or lowland plain presents a complexity of hollows, knolls, breasts, narrow benches, and short slopes of various gradients.

"The Northern Highland is bordered on the north by a fairly wide belt of lakeshore lowland, consisting of flat plains and benches, but includes a few conspicuous detached hills and ridges which extend from Alpena County to Cheboygan and Emmet counties. However, to the southward the highland extends to the shores of Huron and Michigan where it is terminated by bluffs or bordered only by a very narrow belt of lake shore benches and remnantal embayment plains." (Pet. Ex. 620, p. 3)

Of the soils in the subject area of the Lower Peninsula, Professor

Veatch writes:

"The deeper and drier sand soils of the hilly highland, like those of the dry plains, have common characteristics throughout the Southern Peninsula, but as might be expected, they differ locally in details of soil profiles, associated soils, and configuration features. They occur in larger and more uniform bodies in the northern part of the state, beginning in Ogemaw, Clare and Newaygo Counties. The natural vegetative cover, both trees and ground cover, constitutes a more easily observed land difference between the north and south than does the soil or surface configuration. The soil in the southern areas has been classified as the Coloma type and that in the northern as Roselawn, although a line of division between the two in the central part of the state is arbitrary. The deep sand soils in the southern part are more extensively utilized for crops, and locally may take

on fairly high values because of association with soils of higher fertility, and because of advantageous economic environment, rather than high inherent soil fertility. In the north, this kind of land is generally sparsely occupied, and remains pretty much as wild land, which has neither a present nor prospective high value for agriculture or for forestry." (Pet. Ex. 620, pp. 77-78)

The soils in the eastern half of the Upper Peninsula have a high proportion of dry sands, swamp and stoney limestone, and bedrock land along with some smaller areas of fertile soil. Generally speaking the topography and soil quality of the subject lands in the Upper Peninsula and the northern part of the Lower Peninsula were such that they were undesirable for farming in 1836. However, the subject lands in the middle and southern parts of the Lower Peninsula had a high proportion of good quality soils which were suitable for agricultural use at that time.

30. When the United States Surveyors surveyed the subject lands they classified the lands as first, second, or third rate depending on their appraisal of the quality of the land for agricultural purposes. First and second rate lands were those considered suitable for farming. According to Mr. J. W. Trygg, defendant's expert appraiser, these surveyors classified the subject lands as approximately 6.24% first rate, 50.97% second rate and 42.73% third rate.

Professor J.O. Veatch divided the lands in Michigan into four classes and estimated the location and acreage of each class of land on an agricultural

land classification map. He defined these four classes as follows:

First Class:

". . . the first-class land in general is supermarginal and embraces those land types on which the present dominant type of agriculture can be carried on as a business, and with a profit during normal times, under ordinary intelligent management. A very considerable amount of land not in use is included in the first class on the basis of potentialities."

Second Class:

"The second class includes land which is considered slightly inferior to the first because of lower natural fertility, less durability under cultivation, or less favorable topography. It is regarded as usable land at present, or at least constitutes the best which could be regarded as a reserve after the exhaustion or complete use of the first class."

Third Class:

The third class is in general marginal. It may be adapted to a purely subsistence type of farming; a home, and a partial living for the family; to intensive farming for special crops on individual small tracts; or to no present agricultural use, all depending upon location and other extrinsic factors. The land is arable and potentially agricultural; the soils may be even high in natural fertility in places; but some one unfavorable factor or combination of unfavorable factors makes potentiality of agricultural use remote, except for a very small percentage of the total."

Fourth Class:

"The fourth class is in general submarginal. It comprises the driest sands, the wet sands of lowest fertility and durability, most of the peat swamps, the steepest slopes, and rock outcrop. Only under the conditions of most favorable location, for high acre-value crops, or in part for extensive use as grazing, does it appear that agricultural use may be made of it." (Pet. Ex. 7-V, pp. 57, 58)

Based on these classifications and Dr. Veatch's map, Mr. William R. Luedders, defendant's expert appraiser, calculated that the subject lands in the Lower Peninsula were approximately 12% First Class, 29% Second Class, 29% Third Class, and 30% Fourth Class. The subject lands in the Upper Peninsula were 7% First Class, 16% Second Class, 22% Third Class, and 55% Fourth

Class.

The Commission finds that after the subject lands were cleared approximately 60% of them were adaptable to some type of farming, from the subsistence level to more lucrative types, as farming was carried on in 1836.

31. Based on the data abstracted from the original United States Land Surveyors' field notes and Township plats the subject lands were classified as follows:

| | |
|--------------|--------|
| Prairie | .05% |
| Marsh | 1.00% |
| Swamp | 21.30% |
| Bottom | .40% |
| Other Upland | 77.25% |

The swamp and marsh lands were those lands considered to be unfit for cultivation at that time by reason of their wetness. Bottom lands were areas that were subject to flooding during the wet season but drained naturally during the dry season. Prairie and Uplands were those lands which were higher and which were not subject to being flooded or overflowed as were the swamps, marshes and bottoms. Here were found such trees as were native to the area.

Professor Charles Davis of the University of Michigan studied some of the swamp lands of the subject lands in the Upper Peninsula during the 1905-6 period. He defines bogs, swamps and marshes as follows:

*** A bog is an area of wet, porous land, on which the soil is made up principally of decayed and decaying vegetable matter, so loosely consolidated, and containing so much water, that the surface shakes and trembles as one walks over it. The vegetation upon the surface is variable, but it is characteristically either some species of moss or of sedge, or grass, or a combination of two or more of these with shrubs and even small trees. ***

"A marsh has a firm soil; that is, not easily shaken when walked upon, although it may be soft and very wet, even submerged, and the vegetation upon it is principally

grass-like; that is, with long narrow leaves, and weak, short-lived aerial stems. Shrubs may occur upon marshes, and where they are present not infrequently form thickets. The development of typical marshes is much greater than that of bogs as defined above, and much larger areas of marsh are to be found in more or less accessible places.

"A swamp, according to the writer's usage in this paper, has trees and shrubby plants as the most important part of the vegetation, the soils being, as in the case of the marsh, firm, but wet, even, at times, to flooding. The swamps are even more common than marshes and great areas of the state were formerly covered by this type of formation, which have long since been cleared, drained, and converted into agricultural land. ***" (Def. Ex. 269-V, p. 109)

On September 28, 1850, the United States Congress enacted the Swamp Land Act. Under this Act 5,794,308.57 acres of public lands were patented to the State of Michigan. These lands were referred to in the Act as ". . .swamp and overflowed lands . . .made unfit thereby for cultivation." (9 Stat. 519) Of this amount, 2,866,695 acres were in the subject area. This acreage comprised approximately 24% of the subject lands.

The original field notes of the United States surveyors of the subject lands were used as the basis for determining which lands were to be patented to the State of Michigan under the Act.

In 1857 the legislature of Michigan fixed the sale price of these swamp lands at \$5.00 per acre with one-fourth of the purchase price in cash at the time of purchase. However, in 1858 the legislature reduced the price of the lands to \$1.25 per acre with the purchaser paying one-fourth of the purchase price at the time of the sale and ten years to pay the balance at seven percent interest. As of November 30, 1870, the swamp lands in Michigan which had not been disposed of totaled 3,155,713.37 acres. (Def. Ex. 4-V; Pl. Ex. 538, p. 8)

It has been estimated that the State of Michigan contains more than 10,000 lakes and ponds covering a considerable area of the State's surface. A substantial number of these lakes and ponds are in the subject area and are included in the 12,044,934 acres to be valued. Of the 10 lakes in Michigan having an area of more than 10,000 acres, six are in the subject area of the Lower Peninsula and one is in the subject area of the Upper Peninsula. Of the 23 largest lakes in Michigan, 17 are in the subject lands, 13 in the Lower Peninsula and four in the Upper Peninsula. Of the seven counties in Michigan having more than 300 lakes each, two are in the Upper Peninsula. These are Luce County with 571 lakes and Schoolcraft County with 340.

32. The climate of Michigan is noticeably affected by the large bodies of water surrounding the State. The influence of these waters cause the comparatively slow increase of temperature as spring approaches and delays the occurrence of frost in the fall. The average number of days without a killing frost vary from 160 to 170 along part of the coast of the Lower Peninsula to about 110 in some of the inner sections of both peninsulas. A resident of the Upper Peninsula from 1864 to 1873, in describing the climate, said:

"The air is dry, and the winters very cold, the thermometer down to 45° below zero, at the coldest; the springs late, after the deep snow; the soil fertile, but the season of growth short, and the frosts too late, and too early, to allow cultivation of any crops but grass, oats, and the very hardiest vegetables. I have known potatoes to be frozen dead in July." (Def. Ex. 196, p. 400)

The annual precipitation averages from 20 to 30 inches with from 18 to 24 inches of rain falling during the growing season.

33. Michigan Territory was set apart from the Northwest Territory in 1805 with Detroit as its capital. It included all of present day Michigan, southeast Minnesota east of the Mississippi River and all of Wisconsin. The growth of the population of Michigan Territory was slow at first but later increased rapidly as indicated below:

| <u>Year</u> | <u>Population</u> |
|-------------|-------------------|
| 1810 | 4,528 |
| 1820 | 9,048 |
| 1830 | 32,538 |
| 1834 | 175,000 |
| 1840 | 212,267 |

In 1835, neighboring Ohio had a population of 1,375,000, adjacent Indiana had 600,000 people, and the population of nearby Illinois was 272,427.

As soon as the population and settlement in the subject area warranted, counties were organized and political institutions were established. Settlement sufficient to warrant the organization of counties within the subject areas took several decades after the evaluation date in most cases.

The following 17 counties in the State of Michigan, whose dates of organization are indicated, are located wholly within the Lower Peninsula subject lands:

| <u>County</u> | <u>Organization Date</u> | <u>County</u> | <u>Organization Date</u> |
|----------------|--------------------------|---------------|--------------------------|
| Antrun | 1863 | Manistee | 1855 |
| Benzie | 1869 | Mason | 1855 |
| Charlevoix | 1869 | Muskegon | 1859 |
| Cheboygan | 1853 | Newaygo | 1851 |
| Emmet | 1853 | Oceana | 1855 |
| Grand Traverse | 1851 | Otsego | 1875 |
| Kalkaska | 1871 | Presque Isle | 1871 |
| Lake | 1871 | Wexford | 1869 |
| Leelanau | 1863 | | |

There are ten counties, some part of which falls within the subject lands in the Lower Peninsula. These with their respective organization dates are:

| <u>County</u> | <u>Organization Date</u> | <u>County</u> | <u>Organization Date</u> |
|---------------------------|--------------------------|----------------------------|--------------------------|
| Alpena (northern part) | 1857 | Missaukee (northwest part) | 1871 |
| Crawford (northern part) | 1879 | Montcalm (western part) | 1850 |
| Ionia (northwest segment) | 1837 | Montmorency (western part) | 1881 |
| Kent (northern part) | 1836 | Osceola (western part) | 1869 |
| Mecosta (western part) | 1859 | Ottawa (northern part) | 1837 |

The Upper Peninsula subject lands wholly embrace the following five counties:

| <u>County</u> | <u>Organization Date</u> | <u>County</u> | <u>Organization Date</u> |
|---------------|--------------------------|---------------|--------------------------|
| Alger | 1885 | Mackinac | 1818 |
| Chippewa | 1826 | Schoolcraft | 1871 |
| Luce | 1887 | | |

Parts of two counties account for the balance of the subject lands in the Upper Peninsula. These two from the western part, along with the date of organization are:

Delta (east of Escanaba River) 1861
Marquette (east of Chocolay River) 1851

In 1840, the first period settlers could legally reside in Area 205, the Census shows the population of Michigan to be 212,267. This included about 4500 people in the subject lands, 3000 in the Lower Peninsula and 1500 in the Upper Peninsula.

34. At the time of the cession, knowledge of the subject area had become known to others in a variety of ways. There were letters from the settlers describing the territory. There were the surveyor's field notes, plats and maps of the area, and also government reports. One source of information was John Farmer's Emigrant Guide or Pocket Gazetteer published in 1830 with supplements in 1831 and 1836. This Guide was designed to provide descriptions and information to the settlers. General information for emigrants moving west was also provided in publications by John Mason Peck, Samuel R. Brown, Daniel Blowe, Robert Bard and John T. Blois' Gazetteer of the State of Michigan published in 1838.

It would appear that the best and most extensive information respecting land in Michigan Territory prior to the 1836 cession concerned the extent of the forests and quality of lumber available in the Territory. However, this information was concerned almost entirely with the area south of the Grand River outside the subject lands. By 1836, specific information was being obtained by such men as Knowles Taylor regarding timber in Allegan County in Area 117, Myron Hinsdale concerning timber in the Grand River Valley, and Lucius Lyons concerning the Upper Peninsula.

35. The rapid development of the land in southern Michigan Territory brought many immigrants into the areas of settlement and created a local market for the goods produced by those already settled. The completion of the Erie Canal in 1825 gave southern Michigan Territory access to the Albany market and exportation to the Chicago market increased steadily from 1833.

Crops and agricultural methods were those common to the period and similar natural conditions. In the southeastern parts of the State the early settlers found small areas of prairie grasses in which only scattered burr oak trees were growing. These areas became known as "oak openings" or "prairies". These "oak openings" were preferred by the settlers because they had the advantages of both prairie and timbered lands. The trees were scattered enough to allow cultivation, the timber and stump problem was reduced, and there was still plenty of timber close at hand to supply the settler's needs for building and fuel. Consequently, the timbered lands were developed much more slowly than the "oak openings." However, there were very few of these "oak openings" or "prairies" of any significant size in the subject area, and, as stated above, they were concentrated in the southeastern part of the State.

The early settlers found forest land attractive as protection from winter winds and the hot summer sun. The timber products were also

available for subsistence use and the decaying vegetable mold improved the soil for crops. The settler used the forests and forest products to build his home, barns, fences and sleigh runners and also for fuel and furniture. They also subsisted on maple sugar, berries, game and fish. A by-product from the burning of logs was the potash which was used and sold for soap making. Shingles and maple sugar were early cash crops. The price of shingles in the 1830's and 1840's varied from \$1.00 to \$1.50 per thousand.

The cost of clearing and improvements to prepare land for crops varied. In common oak openings the cost was estimated at \$5.00 per acre. Forest land was frequently cleared by removing small trees, girdling large trees and felling them when they dried out. They would then be burned or left to rot. These methods cost from \$3.00 to \$15.00 per acre depending on the rapidity of removal. In the meantime, crops could be grown upon the land before it was fully cleared.

In the area of Michigan south of the Grand River wheat was the chief money crop of the early settlers. The price received was determined by the local demand, the time of year when sold, and the bargaining ability of the farmer. Accordingly, the price of wheat fluctuated greatly. Lucius Lyons indicated that wheat was selling for \$1.00 a bushel near Kalamazoo in 1833, fifty cents per bushel from 1840-1842, and sixty cents per bushel

in 1843. For the period 1836 to 1849, wheat grown near Ingham, Michigan, in Royce Area 111, sold for an average price of \$1.07 per bushel with a high of \$2.50 per bushel in 1836. In Detroit, wheat was reported selling for \$0.25 per bushel in 1837.

36. Heavily timbered regions did not lend themselves readily to settlement. Much of Area 205 was described in 1865 as sparsely settled being limited to "...settlement induced by the lumber business." (Def. Ex. 14-V, p. 8)

However, there were some sizeable areas of agricultural land immediately north of the Grand River upon which settlers were found even in advance of the survey and sale of the subject lands. Land in Area 205 was first offered for sale in 1839. The first surveys in the subject lands were made in 1841. About one-third of Area 205 was later re-surveyed with the re-survey being approved in 1851 and the land offered for public sale in 1860.

37. The 1836 cession of Royce Area 205 was negotiated in the year of the climax of the greatest land boom of the 19th century. Settlers and speculators poured into southern Michigan Territory and the lands sold quickly at high prices. This speculation fever in Michigan Territory began in 1834, increased through 1835 and reached its climax in 1836. The 1836 boom in Michigan had for its subject the lands south of the Grand River except for a few townships in the Grand River Valley north of the

Grand River. This rush of settlers into the Grand River Valley in 1836 created a furor for locating lands as speculative investment. Money was cheap and abundant and many promoters and businessmen, feeling certain that land would increase rapidly in value because of the expanding population and the public improvements which were planned, speculated in real estate instead of developing business and industries. Many capitalists invested in the wild lands of southern Michigan. In 1836 southern Michigan Territory lay directly in the path of one of the mainstreams of western immigration. Even before 1835, a steady stream of immigrants had begun to flow into the Territory in wagons and on foot. The demand for land by immigrants was encouraged by the knowledge that wages at 74 cents per day or board and \$10 per month would enable a laborer to acquire 80 acres of unimproved land in a year's time. Within five years after the date it was first offered for sale, over fifty percent of the available public land between the Kalamazoo and Grand Rivers south of the 1836 cession had been sold and some squatters had moved into the 1836 cession lands north of the Grand River. In 1836, one-fifth of all receipts from public land sales in the United States was from the sales of lands in Michigan Territory. At that time Michigan Territory included the present states of Michigan, Wisconsin and part of Minnesota. In 1835-1836 the sales of public lands in Michigan Territory aggregated 5,733,520 acres. In 1836 alone the sales totaled 4,189,823 acres.

38. The sale of public lands in Michigan was comparatively slow until 1835, although sales had generally increased from an average of about 50,000 acres per year in the years 1825-1829 to about 500,000 acres per year in the 1829-1830 period. Land sales at the Detroit District Land Office dipped from 92,332 in 1825 to 17,434 in 1828 and then rose to 70,441 in 1830. Sales then jumped to 219,943 in 1831, declined the following three years and rose to 405,331 acres in 1835. In the years 1820 to 1835, the Detroit Land District reported sales of 2,117,185.64 acres. In 1836 the sales were 1,475,725.59 acres.

During the four years prior to the valuation date of the subject lands, over 20,000 acres of public lands were sold in Gratiot, Clinton, Ingham and Eaton counties at an average price of a little over \$1.24 per acre. These counties were all within the Kalamazoo Land District as it existed in 1832 through 1835 and were located east and southeast of the subject lands in the Lower Peninsula. The public lands in Clinton, Gratiot and Ingham counties were a part of Royce Area 111 ceded by the Treaty of September 24, 1819. The lands in Eaton county lay within the August 29, 1821 treaty cession of Royce Area 117. Most of the townships listed for Clinton, Eaton and Ingham counties were surveyed in 1826 or 1827 and were opened to entry in 1830. Those listed for Gratiot County were opened to entry in 1832. In none of the townships in the above counties were all the lands sold during this period. Of course, the more choice lands were sold first.

In addition to these four counties some public lands in part of Ionia and Montcalm counties outside the subject lands were open to entry before March 28, 1836. In Ionia County in the four-year period of 1832 to 1835, inclusive, 22,826 acres were sold for \$28,128. In Montcalm County 783 acres were sold for \$866.

In the year 1836 the Detroit Land District sold 1,475,725.59 acres of public lands for an average of a little more than \$1.25 per acre. In the same year the Kalamazoo Land District sold 1,634,511.82 acres for the same price. During the period from September 20, 1836 to October 1, 1837, the Grand River Land District sold 568,317.56 acres of public lands for an average of \$1.26 per acre (Def. Ex. 43-V).

39. During the inflationary boom of 1836, public land sales increased tremendously. The counties nearest the subject lands were greatly affected. Sales increased in Eaton County to 8 times the 1835 sales, in Ingham County to 10 times the 1835 sales, in Clinton County to 17 times the 1835 sales, and in Gratiot County to 33 times the 1835 sales. However, in 1837 public land sales declined 58% in Ingham County, 64% in Gratiot County, 76% in both Clinton and Easton Counties, and 84% in Ionia County. In 1838, sales had fallen in Clinton County to less than 4% of what they were in 1836, in Eaton County to 2.5%, in Ingham County to 4.2% and in Gratiot County to 0.6% of the 1836 sales. Thus, the reduction in sales in 1838 was well below half the level attained in 1835.

At the close of 1838, of the 362,208 acres of public lands available in Clinton County, 243,319 acres had been purchased, and of 358,724 acres offered in Gratiot County, 28,776 acres had been sold. During the period 1835-1846, approximately 1,373,763 acres of public lands were offered in the five most southerly counties in the subject lands, namely Kent, Montcalm, Newaygo, Muskegon and Ottawa counties. Of this acreage, 85,948 acres were sold during the above period.

40. Adjacent or nearby the subject lands were several other Indian cessions. Some of these lands were still available for settlement in 1836. Across the Grand River on the south was Royce Area 117 ceded by the Treaty of August 29, 1821. This cession comprised about four million acres and constituted most of southwest Michigan. To the east and somewhat southeast was Royce Area 111, some seven million acres, ceded September 24, 1819. Beyond Royce Area 111 and mostly to the southeast lay Royce Area 66, which was ceded November 17, 1807. The five and one-half million acres of Area 66 made up southeast Michigan in which were Detroit and its satellite villages. Detroit served as the point of entry for travelers using the Erie Canal and Lake Erie to reach the midwest.

Much of this vast acreage of competing public lands lay between the subject lands and Michigan bound settlers, and consequently, these lands served as an active competitor to the subject lands in 1836 and for many years thereafter. The land of the 1821 cession, lying directly south of the subject lands, was put on public sale in 1827. As a result, a number of settlements were established south of the Grand River in the early 1830's

and squatters began to move across the Grand River to settle on the north side well in advance of the land survey and sale in the 1836 cession.

There were also large acreages of public lands available for purchase in adjacent Ohio and Indiana and in neighboring Illinois. These lands were in the direct path of the westerly flowing immigration and were being purchased in most cases at the minimum price of \$1.25 per acre.

41. The rapidity of land sales outside of Michigan Territory was coincident with the completion of the Erie Canal in 1825, the resultant increased commerce on the Great Lakes, and the land boom of 1836. Records of public land sales in the bordering states of Ohio, Illinois, and Indiana are as follows:

| | <u>July 1, 1820 - Dec. 31, 1845</u> | <u>1836</u> |
|----------|-------------------------------------|--------------------|
| Ohio | 14,405,024.70 acres | 1,282,991.80 acres |
| Indiana | 14,462,076.16 acres | 3,245,344.00 acres |
| Illinois | 13,886,161.16 acres | 3,199,203.64 acres |

These figures indicate that of the public lands sold in these three states during the 25 year period from 1820-1845, approximately 9% of the land in Ohio, over 22% of the land in Indiana, and about 23% of the land in Illinois was sold in the year 1836, the year of the valuation of the subject lands.

In the year 1836 the above lands in Ohio sold for an average of about \$1.30 per acre, those in Indiana at \$1.25 per acre and those in Illinois at \$1.25. (Def. Ex. 43-V)

42. In 1830 the first general preemption act was passed. This gave every settler or occupant of public lands the right to purchase at the minimum statutory price any number of acres up to a quarter section upon giving due satisfaction and proof of settlement or improvement of these

lands. Although this act was only to be in force for one year, it was renewed from year to year until the permanent pre-emption Act of 1841 was passed by which future settlers were guaranteed the right of pre-emption. This act was intended to place the actual settler on an equal basis with the speculator.

43. The Ordinance of 1785 had provided that Section 16 of each township be set aside for schools. These sections were located near the centers of the townships so, as a general rule, they found ready sale as a township became somewhat settled. They were considered more valuable than other lands in the township by reason of their location.

The first sale of school lands in Michigan occurred in 1837. During the next nine months over 34,000 acres were sold at an average price of slightly less than \$12.00 per acre. The statutory minimum at the time was \$8.00 per acre. This minimum was reduced in 1840 to five dollars per acre and in 1842 to four dollars per acre. In 1843 it was raised to five dollars per acre again. In 1840 no school lands were sold for more than the minimum price and it appeared that nearly one-third of those previously sold were forfeited for non-payment of the installments due. In 1842 a law was passed allowing purchasers of school lands who had paid eight dollars or more per acre to have the lands appraised at the time of the purchase and have the difference between the appraised value and the contract price credited to the purchaser.

As of December 1, 1849, the sum of all school lands sold in the State totaled 120,728.42 acres. This left a total of 614,000 acres unsold in the Lower Peninsula and about 320,000 unsold acres in the Upper Peninsula. The State of Michigan was granted a total of 1,067,394 acres for school

lands. By 1884 a total of 715,761 acres had been sold at an average price of \$4.58 per acre.

44. Information concerning the Michigan Territory in the early days shows that there was a saw mill at Mackinac in 1780 and one at Sault Ste. Marie during the War of 1812. There were other mills in Michigan Territory prior to this time but not in the subject area. There were reported to be 114 grist mills and 433 saw mills in Michigan in 1837. Most of these were south of the Grand River outside the subject area. Two were in Area 205 but were rather small. Before 1837 there were 8 mills within a circle of 8 miles of Grand Rapids. These early saw mills had a capacity of from 800 to 1000 board feet per day. They were usually water driven but occasionally were powered by steam. The first steam power mill in western Michigan was constructed at St. Joseph in 1832. The circular saw came into use about 1837.

45. While Michigan Territory lacked good roads in the early days, water routes of the Great Lakes and the many rivers of the area furnished cheap means of transportation. Boats, sailing ships and steamboats were used in navigation of the Great Lakes and some of the rivers and streams of Michigan after 1818. The Erie Canal connecting the Hudson River at Albany, New York, with Lake Erie at Buffalo, was completed October 26, 1825. The completion of the Erie Canal resulted in a large reduction of freight and passenger rates so that during 1836 it was estimated that 200,000 passengers were carried to the west via this route. However, this route was only usable about seven months of the year, from early April until December, because of the inclement winter weather.

In 1835 a contemporary wrote:

". . . A fine large steamboat leaves Detroit daily for Buffalo, and smaller ones for less distant places on the north and south. Now and then a steamboat plies to Chicago and other places on Lake Michigan, and in the course of a year or two it is probable there will be a daily line of boats." (Pet. Ex. 533, p. 216)

Another writer earlier in 1834 had said:

". . . There is now a considerable number of schooners and sloops on Lake Erie and the upper lakes. This number is probably about 120, whilst there are 21 steamboats on Erie alone, some of which occasionally visit Lakes Huron and Michigan. Seven of these boats constitute a daily line from Buffalo in New York to Chicago in Illinois . . . Even now vast quantities of pork, beef, flour, corn, feathers, bees-wax, honey, skins, etc., are shipped from this peninsula for New York, and other eastern markets." (Pet. Ex. 502, pp. 186, 187)

Because of the falls in the St. Marys River, up until 1855 Lake Superior could not be utilized as part of a route to carry timber from the Upper Peninsula to market.

The first canal built at Sault Ste. Marie was constructed in 1797 on the British side of the straits. It was destroyed by the Americans during the War of 1812 and rebuilt by the British in 1816. On the Michigan side a horse tramway was built in 1823 to portage goods around the falls. In 1837 funds were appropriated by the Michigan legislature to survey and estimate the cost of a canal. In 1852 Congress appropriated 750,000 acres of public land in Michigan for the construction of the canal. The coming of the St. Marys Falls Ship Canal on June 18, 1855, made this route commercially feasible for the shipping of such heavy and cheap commodities as iron and timber.

The first settlers in Michigan followed Indian trails but soon constructed roads in place of some of these trails. The first roads were located in southern Michigan and were usually of a primitive character. The distance by road from the south to the northern boundaries of the subject lands is about 300 miles. The Upper Peninsula stretches westerly another 200 miles. In 1836 such vast distances prevented efficient travel, transportation and communication under the conditions then prevailing. For this reason settlements did not extend more than 30 miles north of the Grand River as late as 1856. On the valuation date the economy of Michigan Territory was centered in Detroit, Michigan's port for Lake Erie traffic to and from the east. Grand Rapids, located midway on the south boundary of the subject lands, was five days' travel and 150 miles from Detroit.

The navigable rivers in the subject lands were not sufficiently close to the western flow of immigrants to be a significant factor in the settlement of the subject lands in 1836. Some travelers took the long trip by water around the Lower Peninsula rather than enduring the ordeal of traveling across it by land. For several months during the winter travel by water was extremely hazardous because of the inclement weather which froze the Erie Canal and made lake and river travel dangerous. As of the valuation date in 1836, transportation and travel on the Great Lakes was still quite hazardous compared with modern times.

As of the valuation date of the subject lands the first railroad in Michigan was being built to link Toledo, Ohio, with Adrian, Michigan, in southeast Michigan. Service on this 35-mile line began November 2, 1836.

The rails were wood covered on top with long iron straps which often broke. This railroad was powered by horses which were replaced every four miles. A small 2-horsepower steam engine replaced the horses on January 20, 1837. The passenger cars carried about 20 persons and the freight cars had a capacity of about 6 tons. In 1843 it added an additional 35 miles, reaching Hillsdale, Michigan, still some distance southeast of the subject lands. A railroad finally reached the southern boundary of the subject lands in 1853 and about five years later the Detroit and Milwaukee Railroad ran its first train into Grand Haven at the southeastern corner of the subject area. The Grand Rapids and Indiana Railroad reached the pine producing section of the Lower Peninsula subject lands in 1868. The Flint and Pere Marquette Railroad crossed the narrow waist of the subject lands in the Lower Peninsula to its Lake Michigan terminus at Ludington in 1870. The Mackinaw division of The Michigan Central Railroad entered the Lower Peninsula subject lands at Grayling and ran north through Gaylord to reach the straits of Mackinac in 1882. The first railroad in the Upper Peninsula was named The Iron Mountain Railway Company. This railroad had horse drawn cars pulled on wooden rails covered with thin straps of iron. It was completed in the late fall of 1855.

46. In brief, when the United States Surveyors were sent to survey public lands they were instructed to subdivide the townships into sections one mile square, running lines every quarter of a mile where stakes were to be set and the location thereof established by bearing trees. Upon completion of the section, the surveyor was directed to write his field

notes to show the diameter of all corner or bearing trees and line trees; their species and dimension; describe all streams showing their width and course where they cross the lines of survey; whether navigable or not, currents, etc.; kinds of timber and undergrowth; swamps, lakes, ponds and other characteristics, mill sites; surface--hilly, undulating, etc.; areas occupied or used; trails, roads; character of the soil, whether first, second or third rate for agriculture; species of timber, etc.

The surveyors of Area 205 made a record in their field notes of trees found upon the line being run, where it passed through timber land, and where pine trees were used for bearing trees. Hardwood bearing trees were likewise recorded. If a white pine was found on a corner common to four sections, its diameter was noted. When the surveyor reached the northeast corner, he would go east one mile on a random line which he believed correct. If incorrect he returned to the northwest corner and ran east on the correct line. The purpose of the random line was a check on the north line of a section. This method was repeated on each section in the township.

The surveyor would indicate "pine" or "White or Norway pine". Corners with their bearing trees were established throughout Area 205 at every half mile along the section line-quarter line. The surveyors occasionally referred to "spruce pine". Acreages, sawmills, Indian villages, mill sites, and trails also appear on the field notes.

47. Generally speaking, timber was located throughout the entire subject area. The greater portion of the Upper Peninsula, except for the sand plains, was covered with immense forests principally of pine and mixed

hardwoods. The pine lands were not uniformly characterized as white pine stands. The public lands surveyors reported that some of the townships were predominantly Jack Pine or Norway Pine. Norway Pine was considerably less valuable at that time than White Pine and Jack Pine had no commercial value in 1836. In the Lower Peninsula on the northeastern border, evergreens such as pine, spruce and hemlock seem to predominate, and in the northern part extending into the interior, extensive well-timbered tracts and large forests of pine were found.

An examination of the public land surveyor's general descriptions of the townships in the subject area as found in Claimant's Exhibit 810 reveals that the commercially desirable pine forests were interspersed among a variety of more frequently appearing stands of cedar, spruce, birch, fir, tamarack, aspen, hemlock, maple, ash, balsam, elm, beech, sugar, alder, ironwood, lynn and oak.

In 98 townships in Chippewa, Mackinac and Luce Counties in the Upper Peninsula the United States public land surveyor gave no general description of timber in 11 townships, did not mention pine in 30 township descriptions, noted some pine in 39 townships, reported the pine to be small, scattered and of poor quality in 11 townships and characterized the pine as good in 7 townships.

As long as the easily workable and highly floatable white pine was readily available and until better tools for working the hardwoods were developed, the hardwood forests were of little commercial value. Immense quantities of white pine were still available for commercial use at the

time of the 1836 cession and it was many years later before there was any significant commercial demand for the hardwoods.

The knowledge concerning minerals located in the subject and adjacent areas was insufficient to have any effect on the fair market value of the subject lands in 1836.

48. Contemporary opinion in Michigan considered the subject lands, and particularly the Upper Peninsula, less desirable for settlement than other available lands nearby. In 1890, Thomas D. Gilbert, who arrived as a pioneer in Michigan's Grand River Valley in 1835, recalled:

"At the time of my arrival in this favored region, 55 years ago yesterday, the western half of Michigan, from the St. Joseph River to the Straits of Mackinac, was an almost unbroken wilderness.

"A small village at Bronson, now Kalamazoo, a few families in and around Grand Rapids, Ionia, Grand Haven and Saugatuck, constituted the white population in the territory lying between the Grand and St. Joseph rivers, while the whole region between Grand River and the straits a distance of 225 miles belonged to the Indians, and was an unknown land except to the few Indian traders, like Rix Robinson, Louis Campau and William Lasley (venerated names in all that region), who had operated there many years.

"The Indian title to the lands lying north of Grand River was not obtained until 1836, too late to enable western emigrants to avail themselves of its advantages before the great financial crisis of 1837 bankrupted all engaged in active business, checked emigration, paralyzed enterprise, and threw a pall over the bright hopes of the pioneers." (Def. Ex. 56-V, p. 320)

The Enabling Act of June 15, 1836, made Michigan statehood dependent on the acceptance by Michigan of the Upper Peninsula in lieu of a tract

claimed by both Michigan and Ohio known as the "Toledo Strip". This tract was located on Michigan's southern border and contained approximately 300,000 acres as compared with the 9,984,000 acres in the Upper Peninsula. Mr. Lucius Lyons, a Michigan Territorial Delegate and speculator in Michigan lands reflected the feeling of his contemporaries when he wrote on January 5, 1836, that Michigan must,

"... rely upon her more southern soil and climate for population, production and support. The ground claimed by Ohio, but which belongs to Michigan, although only six hundred and fifty square miles, is of more value to her than all the country in the northern section of the State." (Def. Ex. 57-V, pp. 36-37)

On March 31, 1836, three days after the 1836 cession, Lyons expressed some change of mood when he wrote to Morse and Bagg of the Detroit Free Press concerning the cession as follows:

"... Of the country purchased about 4,000,000 acres extending from the Grand river north is known to be fine land for settlement and within a very few years we shall, no doubt, see towns springing up at the mouths of all the rivers flowing into Lake Michigan for a hundred miles north of Grand river, if not all around the lower peninsula. The upper peninsula is known to contain vast forests of the very best pine, which is even now much wanted in Ohio, Indiana, Illinois, and the southern part of Michigan and Wisconsin, and must very shortly furnish the material of a highly valuable trade." (Pet. Ex. 641, p. 3)

49. Several expert witnesses appeared and testified before the Commission during the course of the hearing. Dr. Helen Knuth, a historian, and Mr. J. W. Trygg, an appraiser, testified for petitioners. Both submitted written reports. Dr. Knuth's testimony and report concerned the economic and historical background of Michigan before, during and after the valuation

date. Dr. Knuth wrote and testified concerning the subject lands, transportation, public land policy and sales, rapidity of settlement, economic conditions, agriculture, the lumber industry, and other subjects which related to the general area under consideration and the fair market value of the subject lands in 1836. Her conclusion was that the subject lands were very valuable but she did not give an opinion as to their dollar value either as a whole or in part as of March 28, 1836, the valuation date.

Mr. J. W. Trygg submitted a Basic Data Report which was based, for the most part, on the township plats and field survey notes of the United States Surveyors who surveyed the subject lands. He explained this basic data report in detail during the hearing before the Commission.

In summing up the basis for his conclusion as to the fair market value of the subject lands in 1836, Mr. Trygg said that he considered, among other things, the location of the lands, the navigable rivers and streams therein, transportation facilities, accessibility to markets, uses for which the land was adaptable, the kind of soil and its growing capacity, forest resources, the quality and quantity of timber, the cost of lumber production, the record of public land disposal, economic conditions, interest rates, and the growth of population in the area (Tr. 616-637). However, the main thrust of his testimony before the Commission concerned the fair market value of the standing timber in the subject lands as of the valuation date. In this testimony Mr. Trygg said:

"It was much above the average situation. Particularly so because of an outstanding timber resource which is far greater than any others that were in direct relationship. The only one that would come nearest to it would be that of the Saginaw Valley." (Tr. 634-635)

Mr. Trygg gave his opinion that the highest and best use for the subject lands in 1836 was for timber resources and agricultural use.

(Tr. 654) He testified that the fair market value of the subject lands as of the valuation date was \$2.50 per acre. (Tr. 216, 614) Mr. Trygg estimated there were 60,984,885,834 board feet of merchantable pine and 21,979,214,961 boardfeet of hardwood in the subject area in 1836. He did not distinguish the different types of pine in this calculation (Tr. 657), nor did he make any allowance for wastage. (Tr. 557) He distinguished between merchantable timber and marketable timber, merchantable timber being trees of a size that could be utilized and marketable timber being timber that could be sold or marketed. However, the above board feet estimate was of timber that was both merchantable and marketable as of the valuation date (Tr. 513). We will use the term merchantable to include both categories.

In explanation of the method he used in arriving at the board feet of merchantable timber in the subject area, Mr. Trygg said:

"The basic data was obtained from the Land Surveyor's field notes, records of the bearing trees that they used in establishing the corners, the bearing trees being trees that were selected by them as reference or witness trees showing the distance from the corner, and they were in all cases identified by species and sizes. With that data available throughout this entire area, it enabled me to produce a composite average volume per corner, and that in turn computed to the term in the average volume per acre. The numbers of such corners and the size of the areas made it possible to come up with a very reliable figure of the quantity of merchantable timber available on the land." (Tr. 513-514)

Using the species and size of these bearing trees as a sample plot, the witness then used a table to ascertain the board feet in each of these trees. Then from the board feet in this sample plot he extrapolated the number of board feet per acre and multiplied this figure by the number of acres in the subject area. The witness gave no formula as to how the above amount of merchantable timber helped him arrive at his estimate of \$2.50 per acre for the subject lands in 1836. Presumably the stumpage value of his estimate of the standing timber was an important factor.

Perhaps Mr. Trygg's estimate of the amount of merchantable pine and other timber would be reasonably accurate as judged by current standards. However, the standards of merchantability and the timbering methods as they existed in 1836 make Mr. Trygg's board feet estimate much too high as of the valuation date.

White pine was the only timber in the subject lands which had any significant commercial value in 1836. Although red or Norway pine was stronger and more resinous, white pine was more acceptable to the carpenter because its wood was soft, easily worked, light and strong. Because of the abundance of white pine in other areas closer and more accessible to the major lumber markets, the white pine in the subject area had more of a commercial potential than a ready market in 1836.

The defendant presented three witnesses, Mr. John T. Kenney, Mr. William R. Luedders, and Mr. Robert Clark. Mr. Kenney testified that he had compiled an acreage list of the swamp lands patented to the State of Michigan which fell in Area 205. He explained that his compilation was extracted from the

patented swamp land lists at the Bureau of Land Management. He concluded that 3,170,710.98 acres in Area 205 were patented to the State of Michigan as swamp lands. However, this figure included those patented swamp lands falling in areas "S" and "U", a part of Area 205 which were not part of the subject lands, so presumably the number of acres patented as swamp lands in the subject area would be smaller than the above figure. Mr. Robert Clark testified that he had prepared defendant's Exhibit 38-V which is a listing of the lands set aside for the St. Mary's Ship Canal as recorded in the land section of the Michigan Department of Conservation. The witness also testified that he had prepared defendant's Exhibit 211-A-V which is an overlay for defendant's Exhibit 211-V. The overlay showed the various units classified A, B, C, D, E, F, G, and H on petitioner's Exhibit 813 as they related to the drainage basins in the subject area as shown on defendant's Exhibit 211-V.

Mr. William R. Luedders, an expert appraiser, submitted a written report which he explained in his oral testimony before the Commission. In appraising the subject tract Mr. Luedders considered the historical background of the area, transportation facilities and potential, farming and economic conditions, prospects for settlement in the area, competitive lands, United States public lands policies, public lands sales data in Michigan, classification of the soil, original vegetation of the subject lands, the surveyor's field notes, and contemporary opinion. Although the above factors were not the only ones considered, they were the main factors from which the witness concluded that the highest and best use for the land

was,

"For sale as a block to an eastern syndicate, for subdividing and resale, for farming purposes mainly in blocks of 80, 120, and 160 acre tracts." (Tr. 844, 902)

Based on this use, Mr. Luedders concluded that the fair market value of the subject tract as a whole was \$1,328,500 or approximately \$0.11 per acre as of March 28, 1836. He did not consider the value or the potential value of the timber as a separate factor in his appraisal. (Tr. 846) Mr. Luedders arrived at this value by assuming an average sales price to the buyer of \$1.25 per acre. He then deducted costs for surveying, advertising, and sales expense and expected return on invested capital. School and promotional grants and unsalable lands were deducted and limited sales during the first ten years were assumed.

50. The Commission has determined in the findings heretofore made that the subject lands were unimproved and largely uninhabited on March 28, 1836. In fact, by the terms of the treaty of that date, the Indians had the ". . . right of hunting on the lands ceded with the other usual privilege of occupancy, until the land is required for settlement. . ."

(7 Stat. 491, 495) The United States public land policy during this period made public lands available to settlers at a minimum price of \$1.25 per acre. Our findings reflect that in most cases, except for school lands or other lands at choice locations, this \$1.25 minimum price was also the maximum price paid for these public lands. At this

time and the foreseeable future millions of acres of these lands were available and would be available for purchase by prospective buyers of the subject area. Much of the subject area was off the beaten path of western immigration from which most of the prospective buyers would come. It was also foreseeable that it would be many years before a tract of the location and size of the subject area would be sold. Much of the subject area was swamp land or land undesirable for farming. The subject area had a large quantity of very desirable white pine timber. It was foreseeable in 1836 that this pine had great commercial potential. However, it was also foreseeable that it would be many years before this potential could be fully realized.

On the other hand, to a buyer of land in 1836, the prospects of having a market for such land looked good. Immigration and settlement were rapidly increasing and were expected to continue to increase. A market for lands seemed assured. The expected internal improvements and the expected statehood for Michigan Territory added to the optimism of the times. Much of the subject area was well suited to farming and otherwise met the needs of the prospective buyers of land in 1836. As we have previously stated, the commercial possibilities of the white pine timber in the subject area enhanced the value of the subject lands at that time.

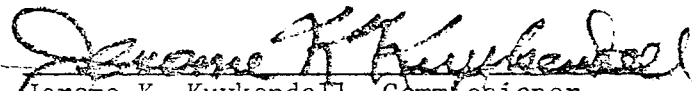
The Commission finds that the subject lands, as a whole, were best suited for subsistence farming in portions of the area, and timber operations in the remainder as of the March 28, 1836, valuation date.

CONCLUSION OF LAW

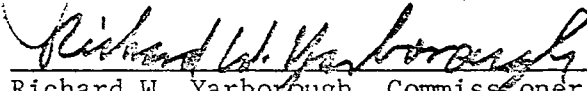
Upon the foregoing findings of fact and the record as a whole, the Commission concludes as a matter of law that the subject tract, as a unit, had a fair market value of \$10,800,000 as of March 28, 1836.



John T. Vance, Chairman



Jerome K. Kuykendall, Commissioner



Richard W. Yarborough, Commissioner



Margaret H. Pierce, Commissioner



Theodore R. McKeldin, Commissioner