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Increased patron mobility as a cause in the decline of thermal springs in western Montana

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INCREASED PATRON MOBILITY AS A CAUSE IN THE DECLINE OF THERMAL SPRINGS IN WESTERN MONTANA

By

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Increased Patron Mobility as a cause in the declining popularity of thermal springs resorts in Western Montana (92 pp.)

Director: Evan Denney

The number of thermal spring resorts (TSRs) in Western Montana in 1975 was considerably less than in earlier decades. This study provides insight to the cause of TSR decline and is intended to present brief historical accounts of the more popular TSRs.

Transportation networks and modes of transportation and their change relative to development of Montana TSRs are investigated as a key variable in TSR decline. Data concerning transportation routes and thermal springs are presented in three time periods: 1889, 1928, and 1975. Transportation network and TSR location maps are used as a tool of analysis for each time period. The location and physical setting of thermal springs are examined for the impact (if any) which these variables have on the pattern of TSR development.

Field work undertaken during the summers of 1971, 1972, and 1975 confirms that historical data about TSRs are sparse. This field work focused on interviewing owners and managers of most Western Montana TSRs. These data are presented as characteristics and problems of TSRs in Appendix B.

It was found that the location of rural highways relative to TSRs has not changed significantly since 1889, but that modes of transportation have changed. Tourism by passenger train yielded to tourism by automobile and bus. This, in turn, led to development of convenient roadside motels, trailer courts, restaurants, and recreational facilities with which the older railroad oriented resorts could not compete. The use of automobiles by resort patrons was a significant factor in changing use patterns of TSRs from 1889 through 1975.

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CHAPTER I

INTRODUCTION

Discussion and Definition

This thesis investigates the declining popularity of thermal spring resorts (TSRs) in Western Montana. A thermal spring is defined as any spring or well with a temperature at the earth's surface of 70° Fahrenheit or above. A TSR in this thesis refers to an establishment located at the site of a thermal spring, which is open to the public for swimming and other recreation, and consists of at least five cottages or cabins or ten hotel rooms.

The study area includes that portion of the Northern Rocky Mountain Province which lies within Western Montana (Figure 1).

A discussion of the physical setting and geologic character of Montana's thermal springs is found in Appendix I.

Thermal springs are found throughout the world. Many of the thermal springs of Europe have been developed and used since early medieval times.[1] Some springs were used even as early as the Roman period and for centuries have been a link between travel and health.

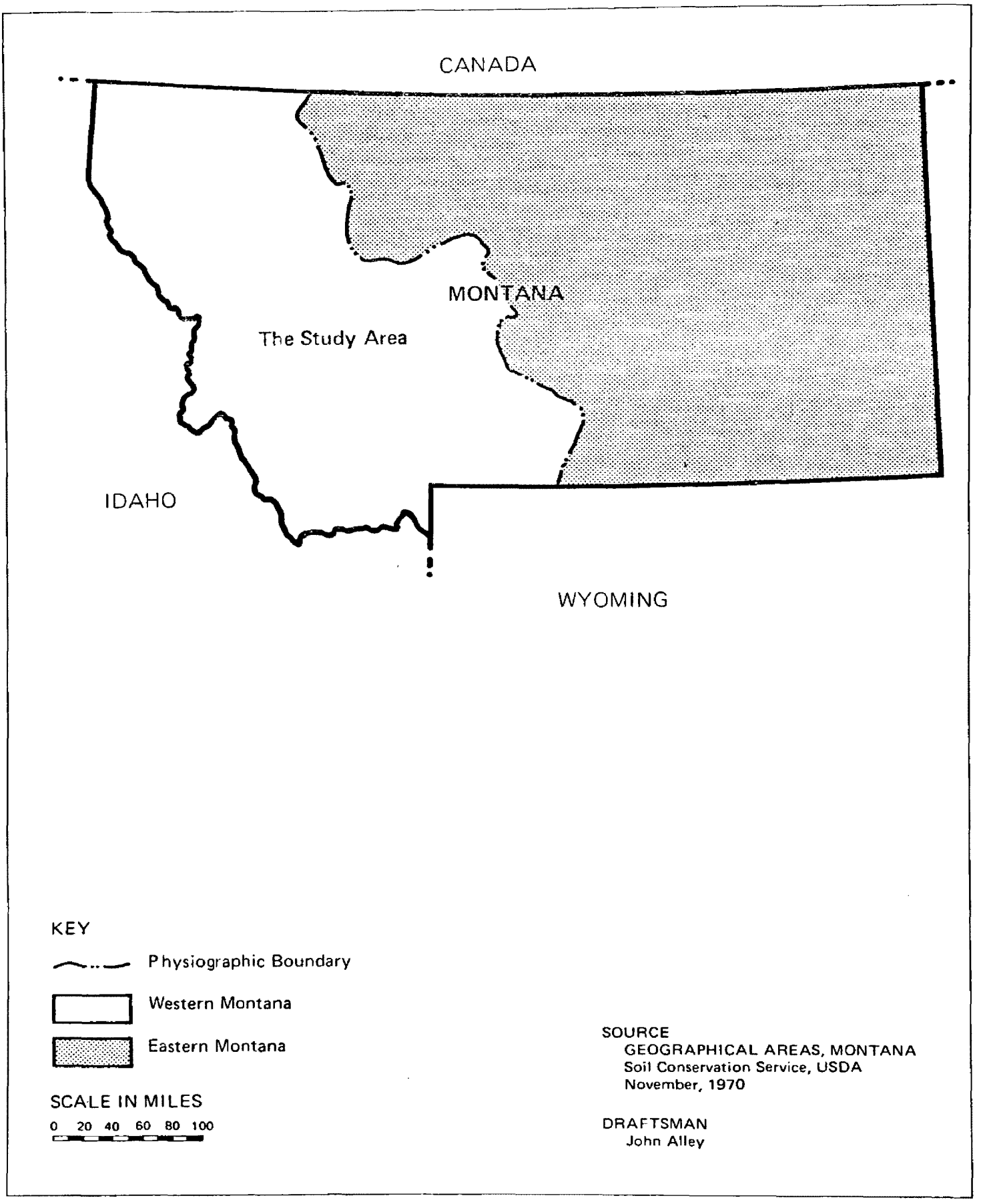

Figure 1. THE STUDY AREA

> One of the most ancient links between travel and health was the taking of waters at mineral and hot springs. Pindar celebrated the baths of Himera, Aristotle discoursed on the virtues of hydrotherapy, Plutarch depicted Aidepsos on Euboea.[2]

People in Germany, France and Hungary used thermal waters for centuries for both medicinal and recreational purposes.[3] The clientele of the early spas were among the first tourists.[4]

By the 17th century, there had developed a widespread conviction on the medicinal value of mineral waters from thermal springs. During the last century, spas offered parks and gardens, concerts, theatrical performances, and other recreation, and it was the quality of these other types of recreation that helped establish the spa's popularity.[5] In fact, by the latter half of the 19th century, both English and American spas seemed to be used more for social than for therapeutic purposes.[6]

In the American West, a favorite stopover for weary travelers was a warm or hot spring. As a service to passengers, stage lines and railroads often located stations in proximity to hot springs. In addition, many resorts were built near these springs to cater to those interested in the therapeutic value of the water as well as those interested in the recreation value. However, by the early 1930s, public appreciation of the health benefits had ebbed. Some remote western resorts deteriorated quickly and became unusable with their facilities obsolete.[8] Since the 1930s, the TSR has

continued to decline in popularity. The reason most often given suggests a lack of faith in the curative powers of mineral waters, combined with the development of modern methods of medical treatment.[9]

As TSRs have declined nationally, so have they in Montana. This decline is reflected by the poor condition of buildings and bathing facilities at the resorts and in recent closures of once-popular public resorts including Alhambra, Anderson, Bearmouth, Broadwater, Diamond Bar Inn, Pipestone, Potosi, and Gallogly Hot Springs.[10] Decline is reflected in outward appearance but is not necessarily explained by such manifestations. For example, an Appalachian study by Seneca and Chicchetti indicates that confusion is caused in estimating demand for outdoor recreation by failing to recognize user response to existing poor facilities.[11] Similar difficulties exist in examining thermal spring resorts:

> Various . . . surveys have relevance only for the time, occasions, and groups examined. Use forecasts are hampered by serious problems . . . past-use records are short, incomplete and inaccurate. Variables such as taste, technology and availability of opportunities . . . are unpredictable. The most formidable difficulty, however, is poorly understood causal relations [emphasis mine].[12]

Explanation of resort decline relative to a single factor has little validity. Investigating the decline is particularly hindered by a scarcity of published research concerning Montana's thermal spring facilities.[13]

Studies of Montana's thermal springs have not been updated since 1964 when a 1937 study, by Stearns, et al., was

recapitulated.[14] Earlier works emphasized the eastern spas of the United States but hardly mentioned thermal springs in Montana.[15]

Available studies of TSRs appear to have been compiled by medical journalists or geologists. The few medical reports on eastern springs of the United States emphasize water chemistry and therapeutic methods or effects of using thermal springs.

The technical character of most geological publications makes difficult the investigation of trends or developments at TSRs. Geological data generally are published in tables or charts and contain no description of facilities.[16] Conversely, non-technical descriptive literature on springs often is in the form of flyers or brochures that have questionable research value.

Difficulty exists in finding either data or research papers by which the development or decline of the Montana TSR can be examined successfully; but despite this, some notable influences on resort decline are evident. These include lack of support by the medical profession, changes in patterns of leisure time use by the population, the widespread use of home bathtubs, and the recent development of municipal swimming pools and recreation centers.[17] Another factor--changing transportation preference--also may be an important element in the decline but has not been studied as it pertains to TSRs. It is this last factor upon which focus is placed in this study.

Purpose

This study provides an expository description of the impact of transportational changes on the decline of TSRs in Western Montana (Figure 1). It is intended to present brief historical accounts of the more popular TSRs and to provide insight to the cause of TSR decline. Changing transportational patterns and modes through the years are thought to have played an important role in the decline of Western Montana's TSRs.

Methodology

In the investigation of the above purpose, transportation networks and their change relative to development of Montana TSRs are investigated as a key variable. Since present decline is a function of past activity, TSRs are examined historically. Data concerning transportation routes and thermal springs are presented in three time periods: 1889, 1928, and 1975. Transportation network and TSR location maps are used as a tool of analysis for each time period. In addition, the location and physical setting of thermal springs also are examined for the impact (if any) these variables have on the pattern of hot spring resort development.

Field work was undertaken during the summers of 1971, 1972, 1975 and 1977. This field work focused on interviewing owners and managers of most Western Montana TSRs. These data are presented as characteristics and problems of TSRs in Appendix B.

FOOTNOTES

CHAPTER I

1. Gerald A. Waring, Thermal Springs of the United States and Other Countries of the World, Revised by R. Blankenship and Ray Bentall. Geological Survey, Professional Paper No. 492, 1964, p. 2.

2. Preston James, "Human Geography," Geological Review, Vol. 52, Jan. 1962, pp. 124-127.

3. Robert E. Lewis, Thermal Springs in Colorado, University of Colorado, Masters Thesis, 1966, p. 4.

4. H. Robinson, Geography for Business Studies, London: Macdonald and Evans, 1972, p. 383, or Ian M. Matley, The Geography of International Tourism, Resource Paper No. 76-1, Association of American Geographers, Washington, D.C., 1976, p. 29.

5. David Lowenthal, "Not Every Prospect Pleases," Landscape, Vol. XII, No. 2, 1962, p. 23.

6. Ibid.

7. Lewis, p. 4.

8. Ibid., p. 5

9. Ian M. Matley, The Geography of International Tourism, Association of American Geographers, Resource Paper No. 67-1, Washington, D.C., 1976, p. 29.

10. Gregson was closed between 1971 and 1973. After extensive remodeling, it was reopened under new management as Fairmont Hot Springs.

11. The writers argue that inherent problems exist in estimating "demand" that often lead to erroneous policy conclusions. See Joseph J. Seneca and Charles Chicchetti, "User Recourse in Outdoor Recreation: A Production Analysis," Journal of Leisure Research, Fall, 1969, p. 241.

12. Arnold W. Green, "Recreation," Leisure and Politics, New York: McGraw-Hill, 1967, p. 52.

13. Sid L. Groff, Director, Bureau of Mines and Geology, Montana Institute of Science and Technology, personal interview, Butte, Montana, November 7, 1971. See USDI-BOR Outdoor Recreation A. Gregory for America, Appendix "A" "An Economic Analysis," December 1973, pp. II-3.

14. Tables related to Montana are identical in the following papers; Gerald A. Waring, Thermal Springs of the United States and Other Countries of the World, revised by R. Blankenship and Ray Bentall, Geological Survey Professional Paper No. 492, 1964. Waring's table [p. 53] is comparable with table [page 151] in Harold Stearns, Norah Stearns and Gerald L. Waring, "Thermal Springs in the U.S.," United States Geological Survey Water-Supply Paper No. 679, 1937.

15. James A. Cook, Mineral Waters of the U.S. and Their Therapeutic Uses, New York: Lea Brothers and Co., 1899; William E. Fitch, Mineral Waters of the U.S. and American Spas, New York: Lea Brothers & Febiger, 1927: A. C. Peale, Mineral Springs of the U.S., United States Geological Survey Bulletin No. 32, 1886.

16. For example, see W. H. Weed, "Economic Value of Hot Springs and Hot Springs Deposits," United States Geological Survey Bulletin No. 260, 1905, p. 598-605.

17. Joseph C. Horvath, The Economic Utilization of the Mineral Water in the Rocky Mountain Area, Masters Thesis New Brunswick, New Jersey, Rutgers, 1960. See also, Richard Kovacs, "The Problem of the American Spas," Journal of the American Medical Association, Vol. 127. (15), April 14, 1945, pp. 977-981; Frederic T. Jung, "Climatology and Health Resorts," Handbood of Physical Medicine and Rehabilitation, Philadelphia: Blackiston, Co., 1950, Published for the American Medical Association, pp. 519-533; George F. Deasy and Phyllis R. Dreiss, "Impact of a Tourist Facility on Its Hinterland", Annals American Association of Geographers, Vol. LVI, June, 1968, pp. 290-306; and Rolf Meyersohn's bibliography in "The Sociology of Leisure in the United States," Journal of Leisure Research, Vol. I, Winter, 1969, p. 53.

CHAPTER II

PIONEER TRAVEL AND SPATIAL RELATIONSHIP TO TSR DEVELOPMENT (1889)

> Since the earliest time, transportation has always been a problem of necessity.
>
> L. W. Randall[1]

Pioneer Roads in Montana

Immediately before and after the Civil War (1861 to 1865), a tremendous amount of exploration had been accomplished in the region west of the Mississippi River.[2] In the Montana territory, following the lead of Lewis and Clark, the Missouri River had been practically the only lifeline of supply prior to 1850; however, by 1859, steamboat traffic had been extended to Fort Benton, Montana, bringing United States government goods to the upper Indian agencies.[3] At Fort Benton, the Fisk Road (blazed in 1862) connected with the Mullan Road, and this established a new transcontinental route in the far northern portion of the nation (Figure 2).

Overland freighting began with the discovery of gold in Alder Gulch and Last Chance Gulch (1863 and 1864), and the population began to grow rapidly. At this time, goods were carried by freighters, ox teams, mules, horses, pack burros, and boats.

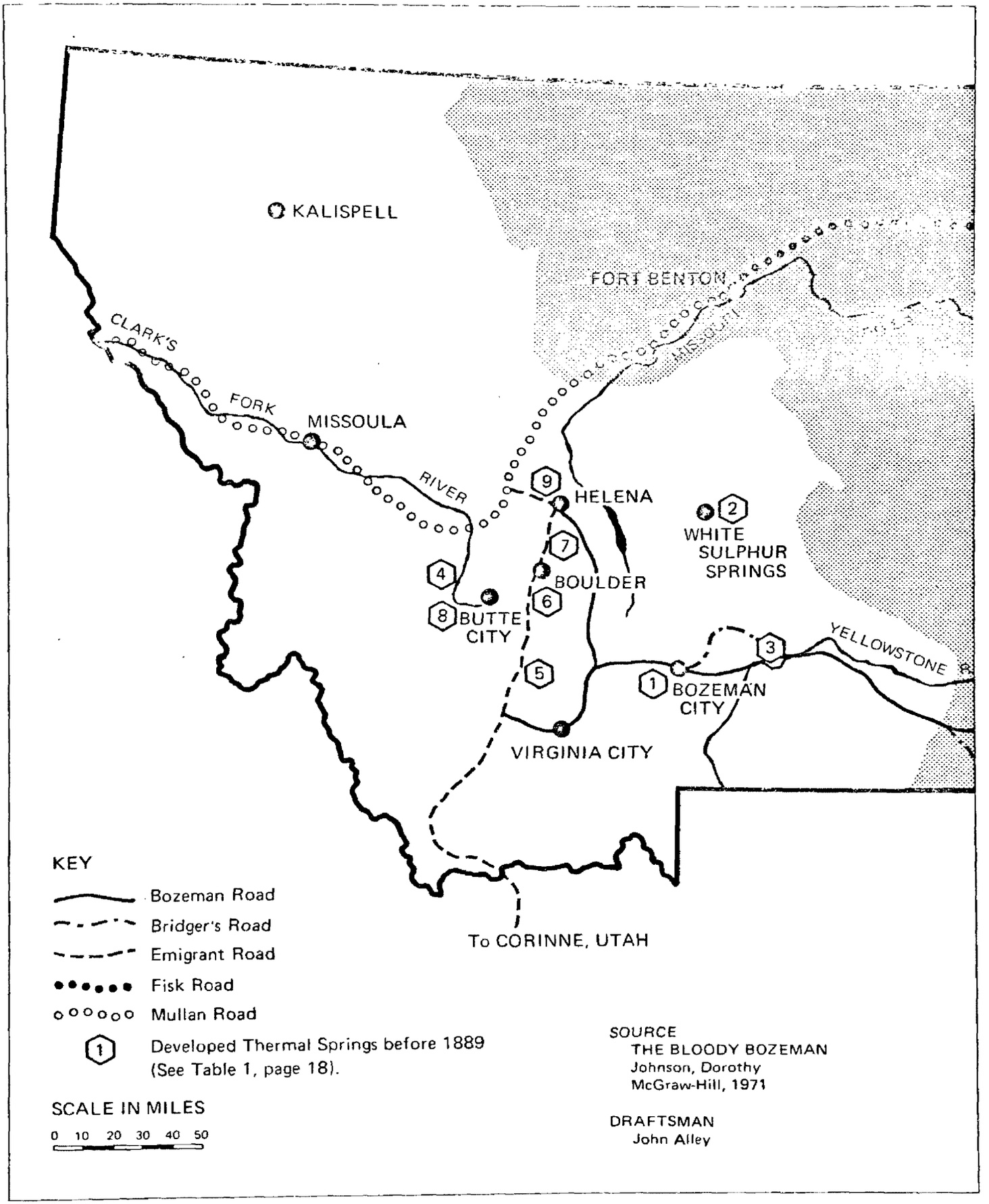

Figure 2. DEVELOPED SPRINGS AND MAJOR ROADS INTO MONTANA BEFORE 1889.

There were four lifelines over which the new population of the Montana Territory were served: an emigrant could go up the Missouri River to Fort Benton by steamer, overland from Salt Lake City to Bannack City and Virginia City, west from Omaha and Saint Joseph, and east from Walla Walla over the Mullan road to Fort Benton.[4]

During those years when Montana began to grow, the Salt Lake overland route was the best and most direct wagon road into the Montana territory. This route continued to be popular until the railroad came in 1884.[5]

Pioneer Travel and the TSR

The development of the TSR coincided with the advance of civilization into Western Montana.

The first white men to use the Hot Springs Valley (Jackson Hot Springs) and Lolo Hot Springs were Lewis and Clark.[6] Warm Springs was referred to by Mullan on maps of a military expedition.[7] Most of the remaining springs were settled first by prospectors who had later decided to become ranchers and farmers.

The first TSRs developed from improvements on patented mining claims staked by prospectors. Mining claims were staked to Alhambra, Hunters, Gregson and White Sulphur Springs by men on their way to the mining districts in the Montana territory.[8] The close proximity of TSRs to the main routes of travel is shown in Figure 3.

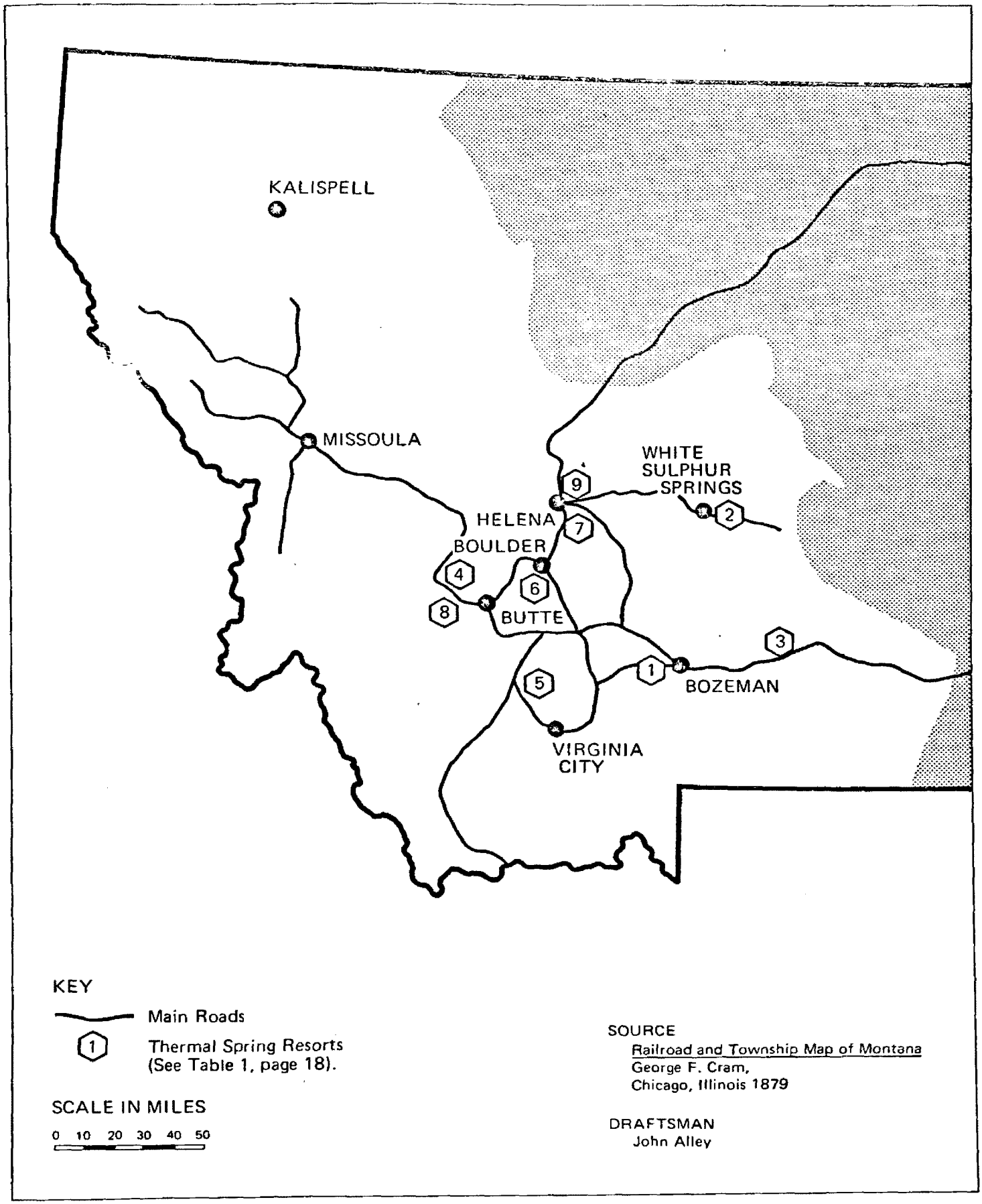

Figure 3. ROADS AND TSRs IN WESTERN MONTANA ABOUT 1889

The gold rush years brought a demand for mail, passenger, and express service. The new state's population was increasing, towns were settled, and the mining industry was booming.

With more settlers coming and new towns springing up, stagecoach lines became a lucrative business.[9] However, travel was far from easy.

> A freight route could not, in most cases, be called a road, It was a bare, dusty ribbon in dry weather and a long line of ruts after a heavy rain. There were often swampy spots and soft places across the small streams in which wagons became stuck. There were steep grades and winding, narrow roadways cut through mountain passes.[10]

The closing decade of the nineteenth century was producing beneficial transportation changes in the west through railroad development:

> This was an era of fast transition not only from steamboats to rails but also from body-shaking, horse-drawn stage-coaches and lumbering freight wagons to speeding railroad trains. It was a period, too, that saw at least the beginnings of a movement from bad roads to good roads and from fords and ferries to great bridges across mighty rivers.[11]

But the people of Montana were not particularly mobile. Intra-state travel was undertaken at great personal inconvenience in terms of time and money.[12]

Indeed, the railroads were on hand to freight supplies and people into Montana and agricultural and mining products out of the state as Figure 4 shows, but TSR owners were limited in their ability to attract customers. Peale had stated in 1886:

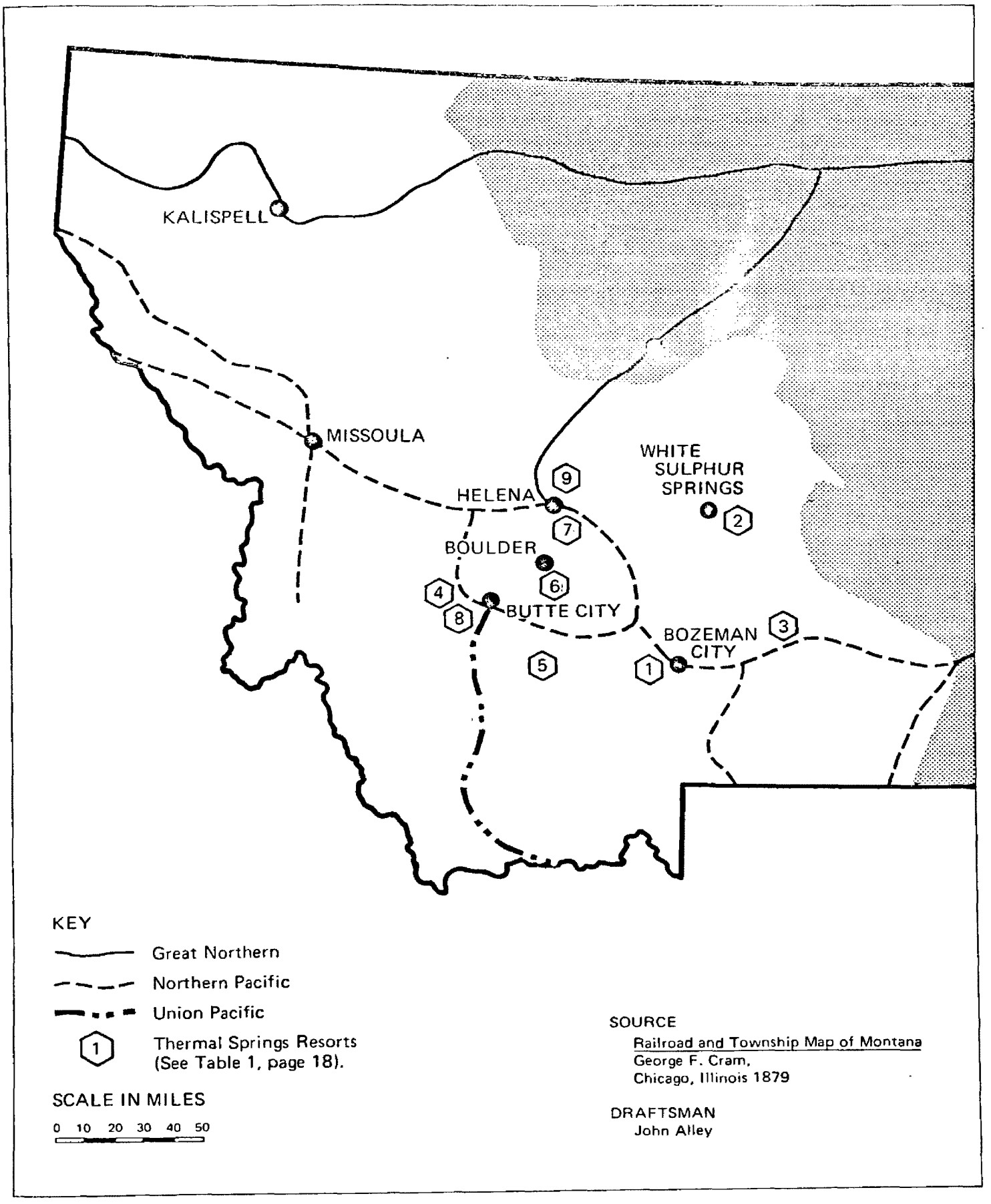

Figure 4. RAILROADS AND TSRs IN WESTERN MONTANA ABOUT 1889

> Until recently, Montana was so isolated that comparatively little was known of its hot springs. Subsequent to the arrival of the Northern Pacific, the ready access through Montana has attracted more attention to the Yellowstone National Park than to the lessor localities along the way.[13]

The railroads were looking at travel on a much larger regional scale than where Montana's hot springs were located. Short lines had not been extended from the main lines in Montana. In any case, the major lines were not prone to advertise for other competitors. The following is an advertisement by the Northern Pacific Railroad. No favorable reference to resorts (Broadwater, Boulder, Alhambra) located near the Great Northern's route is made:

> In marking this flight, I wish to call attention to two spots, like, yet unlike in character. The tourist will be glad to stop a day or a week at them, the weary invalid a month -- one in Montana (Hunter's), the other in Washington (Green River) -- two that are equal to any in the country.[14]

Because of relative distance, inconvenience, and limited advertising, patrons did not make frequent return visits to the TSRs. Except for those found at the magnificent Broadwater resort near Helena, recreational or leisure activities were limited. The major use of the springs seem to have been for therapeutic relief by arthritic sufferers.[15]

To survive, TSR owners needed patrons. All looked hopefully to the railroads for support. Places like the Broadwater resort (discussed in the following section) seemed particularly assured of obtaining that support in the last decade of the nineteenth century.

TSRs in 1889

In 1889, the future of the TSRs may have seemed very bright in Montana (at least for the developed springs). Despite vast distances in the eastern prairies and high rugged ranges in the west, a few resorts were prospering. The Broadwater Hotel and Hunter's Hot Springs were promoted regionally. Alhambra, Boulder, Bozeman, and Gregson appear to have been popular locally, helped by relatively easy public access.

Table 1 provides data on distances from main roads and primary use of improved thermal springs as of 1889. All hot springs were known by this date, but few had been developed commercially. Following is a brief discussion of the more popular TSRs of this period.

Alhambra Hot Springs

Alhambra Hot Springs was located on the only wagon route from Butte to Helena. A small log hotel was constructed in 1866 and wooden tubs were used for bathing. By 1889, Alhambra was a well-known and frequently used resort. Guests arrived at Alhambra via the Great Northern Railroad. A special selling point of the springs was that daily letters and newspapers were delivered by the railroads--a feature probably appreciated by public officials from the new Capital of Helena, approximately fifteen miles away.[16]

TABLE 1

IMPROVED THERMAL SPRINGS
IN MONTANA - 1889

	Year Improved	Distance from Major Town or Road	Primary Use
1. Bozeman Hot Springs	c. 1870	8 miles from Bozeman	Local Swim
2. White Sulphur	1871	crossroads	Sanitarium
3. Hunter's	1873	12 miles from Big Timber 3 miles from NPRR at Springdale	Sanitarium
4. Warm Springs	1877	18 miles from Deer Lodge	Mental Hospital
5. New Biltmore	c. 1880	3 miles from Dillon Wagon Road	Homestead
6. Boulder Hot Springs	c. 1885	3 miles from Butte-Helena Wagon Road	Resort/Swim
7. Alhambra	1886	15 miles from Helena on Butte-Helena Wagon Road	Resort/Swim
8. Gregson	c. 1889	15 miles from Butte on Butte-Anaconda Wagon Road	Homestead
9. Broadwater	1889	4 miles from Helena	Spa

White Sulphur Springs

The site which was to become White Sulphur Springs as originally preempted by James Brewer, a member of the 1867 Fisk Expedition.[17] In 1871, Brewer and a partner built "dwellings, bath house, stables and storerooms, and to them is accredited the honor of being both pioneers and founders of the town."[18] The springs was alleged to be "a really famous health resort in those days, using the expression with its medical rather than social connotations."[19] A local newspaper touted the medical qualities of the water, the beauty of the Valley, and the good access saying " . . . the roads around are the finest to be found anywhere."[20]

The town of White Sulphur Springs was founded at the site of a natural thermal spring. It was located at a crossroad between Livingston and Great Falls and between Helena, Townsend, and Harlowton.

> The springs hotel was a really important hostelry. It was the gathering place of all who came to town for business or merrymaking; and carried a moderate stock of goods of all sorts for the accommodation of the countryside. It housed one of the early schools of the town, and was the point at which much of interest centered.[21]

Furthermore, the site appeared destined for greatness in 1889.

Hunter's Hot Springs

The springs were first staked on a mining claim in 1864. Because of potential Indian hostilities, the site was not homesteaded and buildings were not erected until 1873. The facility

functioned as a farm and sanitarium and was open to treatment of both Indians and non-Indians. The white owners maintained a precarious foothold until the conclusion of Indian hostilities around 1880.[22] The Northern Pacific Railroad came up the Yellowstone River to Bozeman in 1882, and by 1883, a southern-style hotel, bathhouse, and other facilities had been built on the site.[23]

According to Elno:

> The railroad brought (Hunter's Hot Springs) within reach of large numbers of people throughout the northwest, and business grew until within a short time Hunter's Hot Springs was the most popular watering place in the Northern country.[24]

By 1899, Hunter's Hot Springs had become a well-known sanitarium for the treatment of rheumatic complaints.[25]

At this time, Hunter's Hot Springs and Yellowstone Park were felt to be the equal of any attraction on the East Coast or in Europe.[26]

Broadwater

The potential value of tourism to hot springs resorts was anticipated by at least one man of vision:[27] Colonel Charles A. Broadwater. His Broadwater Hotel was built in 1889, four miles northwest of Helena the state capital. Described as a nineteenth century mecca for moneyed pleasure seekers, the spa symbolized the extravagance of gold-rich Helena. The Broadwater Hotel was a luxury hotel and health spa and was believed to be the center of hospitality and social life for

Helena and Montana. The natatorium was the largest covered swimming pool in the world (300' x 100').[28] The hotel facilities included expensive carpets, silver plumbing with polished marble bowls, tiled and hardwood floors, and electric lighting.[29]

With roads and railroads converging on the state capital, the future of the Broadwater Hotel appeared bright in 1889.

Summary

Westward expansion and the end of the Civil War brought a great deal of exploration to the West. In the Montana territory, gold discoveries brought an eager multitude to the mountainous area via four major routes. The best and most direct route was from Salt Lake City to Bannack City, Butte City, and later, Helena.

After 1884, major transportation changes were brought about through railroad development. By 1889, the new state's population was increasing, towns were settled, and the mining industry was booming. The future of the TSR may have seemed very bright in Western Montana.

TSRs located near major roads and railroad rights-of-way were newly-constructed and apparently popular. Regionally famous springs were the Broadwater, Boulder, and Hunter's Hot Springs. Well-known locally were Alhambra, Bozeman, and Gregson, helped by relatively easy public (railroad) access. However, patrons were not particularly mobile. Intra-state travel was undertaken at great personal inconvenience. Trains

moved infrequently on a fixed schedule. Roads and trails generally did not permit freedom of movement.

The major use of the TSRs seems to have been for therapeutic relief of arthritic conditions. Recreational or leisure activities appear to have been purposely modest to provide a restful atmosphere for patrons.

FOOTNOTES

CHAPTER II

1. Louis W. Randall, Footprints Along the Yellowstone, (New York: Nahler Company, 1961), p. 4.

2. Oscar O. Winther, The Transportation Frontier: Trans-Mississippi West 1865 - 1870, (New York: Holt, Rinehart and Winston, 1964), p.1.

3. Randall, op. cit., p.3.

4. Winther, op. cit. The Fisk Road was first blazed in 1862 and remained open via mail-bearing stagecoaches until displaced by the railroad. The trail was used by pioneers for only five years. "At Fort Benton the Fisk Trail connected with the Mullan Road and thereby established a new transcontinental route, this one in the far northern portion of the nation," p.16.

5. Randall, op. cit., p.10.

6. John Bach McMaster, Lewis and Clark Journals, Vol. III, (New York: Barnes and Co., 1904), p.209.

7. John Mullan Report on the Construction of a Military Road from Walla Walla to Fort Benton, (Washington: U.S. Government Printing Office, 1863), p.140.

8. Most early day travelers appear to have been on their way to the gold fields. Refer to Grace Stone Coates, "White Sulphur Springs", in Kalispell Times, June 18, 1931, p. 1. See also, Alice Kent, "Gold-Seeking Doctor Finds Hot Springs," in Billings Gazette, May 11, 1963, N.P.

9. Randall, op. cit., p.9.

10. Randall, op. cit., p.9.

11. Ibid.

12. Rost G. Raymer, Montana, the Land and People, pp. 204-205; Michael P. Malone and Robert B. Roeder, Montana: A History of Two Centuries, (Seattle: University of Washington Press, 1976), pps.55-61.

13. A. C. Peale, "Mineral Springs of the U.S.," U.S. Geological Survey, Bulletin No. 32, 1886, p.305.

14. Olin D. Wheeler, "Wonderland 1902" Northern Pacific Railroad Publication, 1904), p.64.

15. Ibid.

16. Muriel Sibell Walle, Montana Pay Dirt, (Denver: Sagebooks, 1963), p.44.

17. Grace Stone Coates, "White Sulphur Springs," Kalispell Times, June 18, 1931, p.1

18. Ibid.

19. Ibid.

20. Ibid.

21. Ibid.

22. Author Unknown, "Hunter's Hot Springs Indian Health Resort Years Before White Man Comes to Montana," Kalispell Times, July 1, 1937, N.P.

23. Ibid.

24. Author Unknown, "Dr. A. D. Hunter Developed Hot Springs in Park County," Glacier County Chief, June 10, 1935, N.P.

25. Olin D. Wheeler, op. cit., and William E. Fitch, Mineral Waters of the United States and American Spas, (New York: Lea & Febiger, 1927), p. 466.

26. Ibid. Also see George M. Dillard, A Sporting Vacation in Montana, Union Pacific Railroad, Resources in Montana (Brochure) UPRR Passenger Department 1892; Wonders of the Yellowstone, (New York: Scribner & Sons 1889), p.3; John H. Raftery, The Story of the Yellowstone, (Butte; McKee Printers, 1912), p.135; A. C. Peale, "Mineral Springs of the United States," U.S. Geological Survey Bulletin No. 32, 1886, p.305; William E. Fitch, Mineral Waters of the United States and American Spas, (New York: Lea & Febiger, 1927), p.3.

27. Nedra Bayne, "The Broadwater: Relic of Elegance," Montana: The Magazine of Western History, Vol. XIX, No. 3, Helena Montana Historical Society, 1969, p.3.

28. Warren J. Brier, "Broadwater Hotel: Dignified Dilapidation." Missoulian-Sentinal, August 18, 1964, N.P., citing Joaquin Miller (1894).

29. Norman Rogers, "Opens for 5th Season," Helena Weekly Herald, July 5, 1894, p.7. Article contains extensive description of the grounds and facilities of the Broadwater Spa.

CHAPTER III

TRAVEL AND SPATIAL RELATIONSHIP TO TSR DEVELOPMENT (1928)

> The revolution that had overtaken private transportation reached into the heart of popular life, rearranging it.
> Harvey S. Firestone[1]

The period from 1890 to 1928 was a time of change in the mobility of the American public. The connection of vast areas of the American continent by railroads had decreased isolation and increased the spread of goods, ideas, and services. Montana and the nation were made more accessible to settlement and development.

Modes of Travel

Nationally, road development and the rapid increase in the use of automobiles began in 1919. Tyler states, "1919 was the beginning of the greatest car and highway building age the world had even seen.[2] This development brought about a "revolution in rural life."[3] Recreationists and sight-seers were venturing further into the countryside than had been possible by horse and wagon: "Free from war duties, folks were pouring out of the cities in automobiles

loaded down with tents, cook stoves, fishing tackle, and groceries."[4] Railroad passenger service still dominated long-distance travel because trains were the safest, most convenient, and popular mode of travel. However, the period from 1890 to 1928 was one of transition for the railroads. Changes already were occurring on the east coast of the United States; the preference travelers were soon to have for the freedom of automobile travel was making itself felt.

> Instead of staying home all summer or renting a bungalow at the seashore for a week in July, people began to take advantage of their wheels to see America. As early as 1918, The Motorists Manual of the Brooklyn Daily Eagle was fervently urging, 'It is difficult to imagine a more ideal way of spending a vacation than by touring through the country in an automobile . . . .Memories of mishaps fade when the vast amount of pleasure and experience that is gained is brought to mind...'[5]

Eventually, such changes came to Montana.

Table 2 lists the growing number of automobiles licensed in Montana through 1928. A significant increase in the number of motor vehicles occurred in the first decade following the end of World War I (1918) and establishment of the Montana Highway Department (1921).

By 1928, every known mode of transportation was being used in the state: horses and wagons, passenger cars, trucks, and steamboats. Even aircraft, although primitive contraptions, were available.

TABLE 2

MOTOR VEHICLE REGISTRATIONS IN MONTANA THROUGH 1928

(PRIVATE AND PUBLIC VEHICLES)

Year	Automobiles	Trucks	Total
1900	20		
1903	70		
1905	180		
1910	1,010	20	1,030
1915	13,213	1,307	14,520
1920	54,828	5,822	60,650
1925	82,556	13,400	95,956
1928	104,747	23,017	127,764

Source: Montana State Highway Commission, Montana Highway History; (Helena Montana Highway Commission, 1960) Vol. II, p.76.

Routes of Travel

At the outset of the century, only 141 of approximately 2 million miles of the nation's roads were hard surfaced.[6] Only 49 miles of improved (hard surfaced) roads existed in Montana before 1928. The development of improved roads in Montana is shown in Table 3.

TABLE 3

MILES OF ROAD IN MONTANA BEFORE 1928

(PRIMARY RURAL HIGHWAYS)

	Hard Surfaced	Other	Total
1923	40	7917	7957
1924	40	7917	7957
1925	40	7917	7957
1926	42	7915	7957
1927	43	7914	7957
1928	49	7958	8007

Source: Montana State Highway Commission, Montana Highway History (Helena, Montana State Highway Commission, 1960) Vol. II, p. 63

Three groups brought pressure to bear for more road improvements: railroads needed supply routes from production points; farmers wanted access to warehouses and depots; and cyclists and manufacturers of bicycling equipment clamored for better roads to support their increasingly popular sport.[7]

Prior to World War I, the desires of the road lobbyists were rapidly being realized:

> By 1915 forty-five states had highway aid laws, forty had established state highway departments, and 24 had state highway systems. But the ownership, maintenance and administration of the vast majority of highway miles were still primarily in local hands. The resulting development was chaotic.[8]

Federal grants-in-aid for road development started with the Federal Aid Road Act of 1916. Each state seeking a grant was required to establish a state highway department and also meet federal standards for road construction and management. Federal support was limited to the improvement of rural post roads and had to be matched dollar for dollar by state funds.[9]

Initially, federal aid funds, as provided by Congress, were divided among the states in proportion to their areas, populations, and mileage of rural mail routes. The Montana Highway Department first came into existence in 1921 when a law was passed asking states to select a system of principal interstate and intercounty highways.[10] The highway mileage was limited originally to seven percent of the total mileage of rural roads in existence at the time. Federal aid money from that time on could be used only on this primary system.[11]

Initial road improvements by the new Montana Highway Department took place along the major post roads in Montana.[12] Not surprisingly, these post roads followed the major routes of earlier travel.

Original wagon trails gradually gave way to newer and better roads which were often paralleled by a railroad main line; however, roads still were dust bowls in the summer and mudholes

in the spring and fall. The volume of passenger traffic and promotional activities of the railroads probably combined to bring a seasonal, if not a continuous flow of customers to the TSRs.

Spatial Relationship of the TSR To Roads and Railroads

The automobile and road improvements seem directly responsible for the growing popularity of the resorts that were discussed in Chapter II. Those first TSRs were still the most successful during the period from 1890 to 1928.

In 1921, a road system criss-crossed Western Montana and connected major areas of settlement as shown in Figure 5. The roads were numbered and given picturesque labels by the State Highway Department suggesting their origin and destination; i.e., Central Montana Highway, Glacier Trail, Park to Park Highway, Gallatin Way, etc.[13]

As the road system slowly expanded, the number of TSRs increased. A list of existing springs and the degree of improvement is shown in Table 4. All but two TSRs that were destined to be developed in Montana had been improved by 1928.[14]

Note the column in Table 4 labeled "Primary Use". Pipestone, Hunter's, and Chico are TSRs situated near railroad lines. Those TSRs fortunate enough to be located near both a railroad right-of-way and a major roadway prospered at this time. Warm Springs and Corwin, near railroad main lines, were

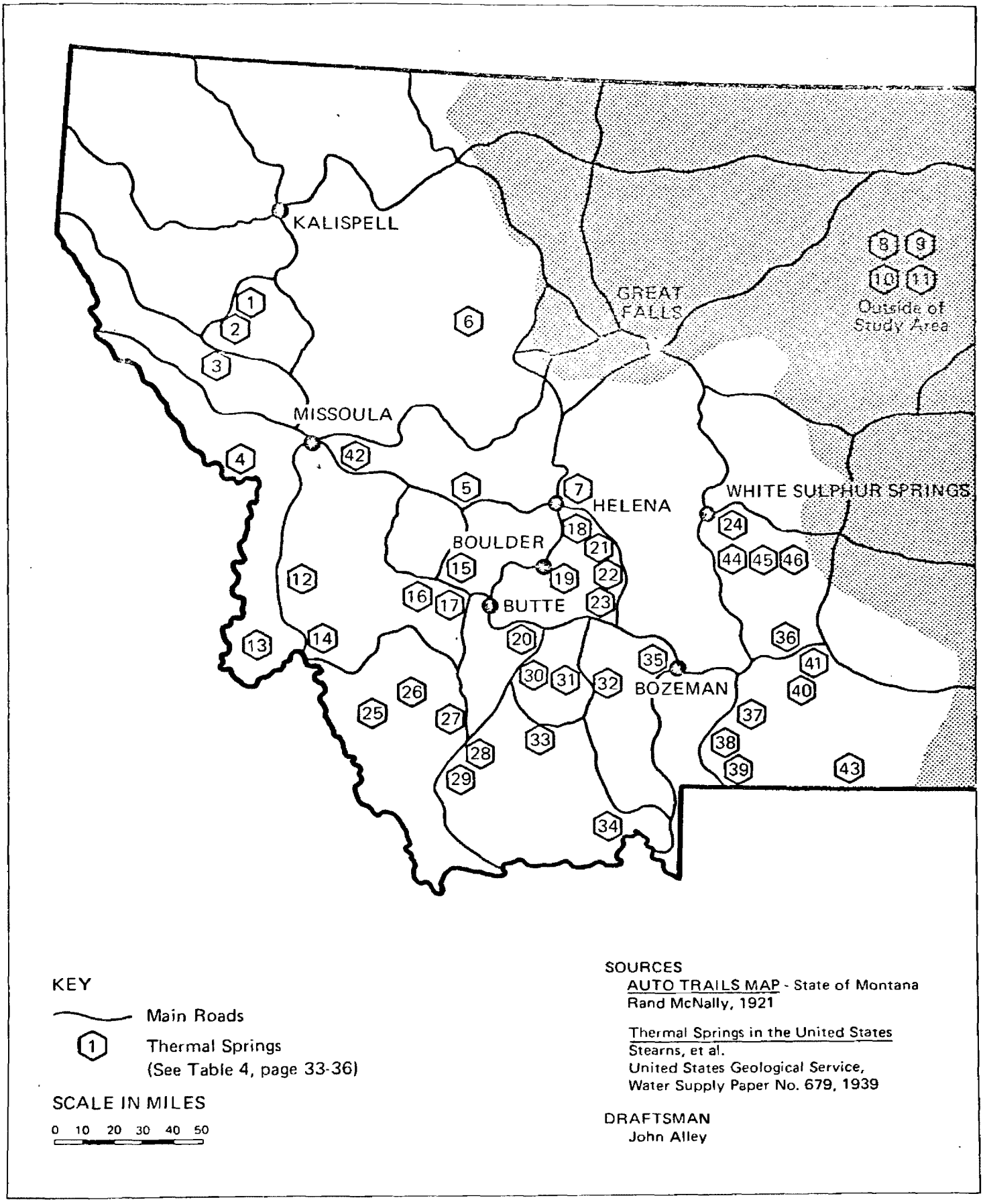

Figure 5. MAJOR ROADS AND THERMAL SPRINGS IN WESTERN MONTANA ABOUT 1928

TABLE 4

MONTANA THERMAL SPRINGS -- 1928

	County	Proximity To Main Highway (In Miles)	Access Via Train	Hot or Warm**	Primary Use
1. Camas	Sanders	.5	No	Hot	Therapy
2. (No name)	Sanders	2.0	No	Hot	Irrigation
3. Quinn's H.S.*	Sanders	.1	No	Hot	Bathe
4. Lolo H.S.	Missoula	30.0	No	Hot	Swim
5. (No Name)	Powell	...	No	Warm	Irrigation
6. Sun River H.S.	Lewis & Clark	35.0	No	Hot	Swim
7. Broadwater	Lewis & Clark	.1	Yes	Hot	Spa
8. Big Warm Spring	Blaine	.1	No	Warm	Irrigation
9. Little Warm Spring	Phillips	.1	No	Warm	Irrigation
10. Warm Springs	Fergus	2.0	No	Warm	Irrigation

SOURCE: Gerald A. Waring, Thermal Springs of the United States and Other Countries of the World, Revised by R. Blankenship and Ray Bentall. Geologic Survey, Professional Paper No. 392, 1964, pgs. 31-32.

* H.S. - Hot Spring(s) >70°F.
** Warm Spring <70°F.

TABLE 4 - Continued

		County	Proximity To Main Highway (In Miles)	Access Via Train	Hot or Warm**	Primary Use
11.	Dunphy Creek	Fergus	2.0	No	Warm	Irrigation
12.	Sleeping Child H.S.	Ravalli	15.0	No	Hot	Swim
13.	Gallogly H.S.	Ravalli	.5	No	Hot	Swim
14.	Medicine H.S.	Ravalli	4.0	No	Hot	Swim
15.	Warm Springs	Deer Lodge	.5	Yes	Hot	Hospital Therapy
16.	Anaconda	Deer Lodge	.5	No	Hot	Irrigation
17.	Gregson	Silver Bow	3.0	Yes	Hot	Resort
18.	Alhambra	Jefferson	.5	Yes	Hot	Resort
19.	Boulder	Jefferson	6.0	No	Hot	Resort
20.	Pipestone	Jefferson	4.0	Yes	Hot	Resort
21.	Bedford	Broadwater	...	No	Warm	Irrigation
22.	Warner	Broadwater	...	No	Warm	Irrigation
23.	Plunkett	Broadwater	...	No	Warm	Irrigation
24.	White Sulphur	Meagher	0	No	Hot	Therapy

TABLE 4 - Continued

	County	Proximity To Main Highway (In Miles)	Access via Train	Hot or Warm**	Primary Use
25. (No Name)	Beaverhead	...	No	Hot	Irrigation
26. Elkhorn	Beaverhead	6.0	No	Hot	Swim
27. New Biltmore	Beaverhead	.5	No	Hot	Swim
28. Lovell	Beaverhead	4.0	No	Warm	Irrigation
29. Ryan Canyon	Beaverhead	4.0	No	Warm	Irrigation
30. Barkell	Madison	.1	No	Hot	Swim
31. Potosi	Madison	11.0	No	Hot	Swim
32. Norris	Madison	.1	No	Hot	Swim
33. Puller's (New Biltmore)	Madison	.5	No	Hot	Swim
34. (No Name)	Madison	...	No	Warm	Irrigation
35. Bozeman H.S.	Gallatin	1.0	No	Hot	Swim
36. Hunter's H.S.	Park	2.0	Yes	Hot	Resort
37. Chico	Park	12.0	Yes	Hot	Swim

TABLE 4 - Continued

	County	Proximity To Main Highway (In Miles)	Access Via Train	Hot or Warm**	Primary Use
38. Corwin	Park	.1	Yes	Hot	Therapy
39. Bear Creek	Park	...	No	Warm	Irrigation
40. Anderson's	Sweet Grass	...	No	Warm	Irrigation
41. McLeod	Sweet Grass	12.0	No	Hot	Swim
42. Bearmouth	Granite	.1	Yes	Hot	Swim
43. (No Name)	Big Horn	...	No	Warm	Irrigation
44. Valseth	Meagher	...	No	Hot	Irrigation
45. Galt	Meagher	...	No	Warm	Irrigation
46. (No Name)	Meagher	...	No	Warm	Irrigation

both successful hospitals specializing in the therapeutic value of hot spring water. Bearmouth, a popular swimming place, also was on a railroad main line near Missoula.

Dominant TSRs in 1928

Interviews with nearly all TSR owner/managers in 1971 indicated a previous heyday coincident with prohibition and automobile development. By 1928, the earlier resorts appear to have been peaking in terms of development and use. Unfortunately, no written records are available to provide statistical information on TSR use during this period. TSRs seem to have been used by local sportsman and families, who used the resort facilities for swimming tournaments and conventions and stayed for days and even weeks at a time.

The TSR appears to have been a social and cultural "watering place" for Montanans to rest, bathe, swim, and be entertained.

A discussion of three popular TSRs follows: Broadwater, Hunters, and White Sulphur Springs. These resorts appear to be representative of the hopes and problems facing TSR owners at this period.

The Broadwater Natatorium

The Broadwater TSR has been described as a pleasure and health resort fit for a prince and unrivaled in its many attractions.[15]

The Broadwater Hotel, built in 1889, was only three years old when Colonel Charles A. Broadwater died. Broadwater has

been depicted as "a sharp financier", being president of both the Montana National Bank and the Montana Central Branch of the Great Northern Railway.[16] His vision included the value of railroad travel to recreation in Montana.

> He could not only predict the economic future of Helena with considerable accuracy, but in many cases, could cause it. One of his greatest disappointments was his failure to bring the Great Northern main line to Helena . . . although he succeeded in establishing four short lines in Montana . . . it had been the best hope for the future success of his hotel and natatorium.[17] (Emphasis mine.)

The hotel was situated a few miles from Helena's Central Business District and State Capitol building.

Families traveled to Helena by auto or train from all Western Montana communities primarily to attend the legislature and conduct other business. While husbands conducted worldly matters in town, wives and children rode out to the spa and played.[18]

Eventually, the TSR could be reached by both the Great Northern Railroad and the Northern Pacific Railroad as well as by two lines of electric cars.[19] Although trains did not bring as many tourists as Broadwater had hoped, they aided in its promotion and were responsible for a significant portion of its revenue.

The hotel slowly and steadly declined in popularity during the twenties and thirties and during this period was operated by seven different parties. Only the Broadwater Hotel Company owned it longer than ten years (1920-1939).[21]

After 1920, the hotel took on an entirely new function from a luxury hotel and health spa atmosphere to that of a place for dancing and gambling.[22]

In 1935, a major earthquake caused millions of dollars in damages to Helena, changed the course of the hot springs waters, and caused a fire which collapsed the huge natatorium. In 1941, ... with impending war and a statewide crack-down in gaming activities, the hotel discharged its employees and closed.[23]

White Sulphur Springs

Hopes built on the future success of the resort at White Sulphur Springs were short lived. Almost from the beginning, the property was embroiled in litigation between several individuals and holding companies.[24]

From 1912 until the mid 1930's several schemes and ventures were tried following acquisition of the springs by A. F. Conrad.[25] Minor improvements were made to the springs, the grounds were beautified, a second pool was constructed and mineral waters were bottled and shipped all over the country on the Northern Pacific.[26]

In 1928, White Sulphur Springs still was relatively isolated, and this probably increased its decline in popularity. Minor improvements to the graded roads had not shortened the substantial distance to major population centers. A full day's ride by automobile was required from Helena (75 miles),

Great Falls (99 miles), Livingston (73 miles), and Bozeman (98 miles).[27] Better and closer facilities were available elsewhere to the public.

Litigation and tax problems were eventually to close operation of the TSR as a resort in the mid 1930's.[28]

Hunter's Hot Springs

Hunter's Hot Springs remained advantageously located on the route of the Northern Pacific Railroad. Trains which brought sportsmen, vacationers, patients and even their physicians to the resort were met four times daily.

The springs were over 100 automobile miles from Billings, a relatively pleasant trip by railroad. As described in a newspaper publication:

> These springs are about twenty miles east of Livingston, and two miles from Springdale on the NP and beautifully situated among the foothills of the Crazy Mountains, an outlier of the Rockies, with the Yellowstone River in plain view. They are now (1902) owned by James A. Murray, a wellknown mine owner of Butte--from which point and Helena they are quickly reached, and at slight expense--and are managed by McCormick and Perry. Within the last two or three years, the accommodations have been greatly improved. The traveler will not find here the luxurious appointments of Saratoga or the Hot Springs of Arkansas, but he will find water that is better, most wholesome, the utmost cleanliness, satisfactory modern convenience, courtesy and attention, attendants, a resident physician, a glorious climate--4,000 feet above sea level--and very moderate prices. The spring's hotels are open the year round and during the season there is fine trout fishing in the Yellowstone River and tributary creeks.[29]

The Dakota Hotel was built in 1909 and the TSR taken over by new management. The TSR was possibly at the height of its

popularity during the following two decades. Outdoor diversions included two tennis courts, a golf links, and saddle horses. The solarium, 60 feet in radius and near the baths, provided a lounge by day and a gathering place for pleasure, recreation and entertainment in the evening.[30]

Bathing facilities, all enclosed, included both large and small swimming pools, bathing tubs and dressing rooms. Along with attendants and lifeguards, the TSR maintained a resident physicial until 1927 when he went to Corwin Springs in 1927. Mrs. Mary Arndt McDonald recalled:

> The resort was a bustling place, with crowds that overflowed the water in the pool, with tennis tournaments, and groups attending conventions.[31]

The TSR remained popular until the Depression years, 1930 through 1935. In 1932, a fire destroyed the hotel and swimming pool at Hunter's Hot Springs. The resort never again regained its popularity or status as a resort.

> Destruction of the hotel draws the curtain upon Hunters Hot Springs as a Montana resort, after a history of more than half a century.[32]

Summary

The mobility of Montanans changed rapidly in the first two decades of this century. Railroad and automobile development encouraged road and highway improvements which brought customers out into the country and to the TSRs.

The TSRs thriving at this time were located near railroad main lines.

By 1928, the TSRs appear to have been peaking in terms of developments and use. Relatively easy railroad access and a variety of activities encouraged family's use of the TSR and visits lasting a week or longer.

During and after the depression years, the TSRs fell into a period of decline and closure.

FOOTNOTES

CHAPTER 3

1. Harvey S. Firestone, Man on the Move: The Story of Transportation (Toronto: Longman's Canada, Ltd. 1967), p. 174.

2. Poyntz Tyler (Ed.) American Highways Today, (New York: Wilson Company, 1957), The Reference Shelf, Vol. 29, No. 1, p. 16.

3. Franklin M. Reck, A Car Traveling People, (Detroit: 1955), Automobile Manufacturers Association, quoted in Tyler, op. cit., pp. 28-37.

4. Tyler, op. cit., p. 31.

5. Firestone, op. cit., p. 170

6. Charles Luna, The UTU Handbook of Transportation in America, (New York: Popular Library, 1971), p. 9; Oscar O. Winther, The Transportation Frontier: Trans-Mississippi West 1865 - 1870, (New York: Holt, Rinehard, and Wilson, 1964); and Harvey S. Firestone, op. cit., p. 178. A "good roads movement" was gaining strong political support from newly formed organizations as the American Automobile Association, The National Grange, The National Association of Rural Letter Carriers, and the Travelers Protective Association of America.

7. Charles Luna, op. cit., p. 9.

8. Ibid.

9. Ibid. For a discussion of the Federal Aid Road Act refer to Juna, p. 9. See also Tyler, op. cit., p. 15, and Firestone, op. cit.

10. Steve K. Kologi, Preconstruction Bureau, Montana Highway Department, Personal Communication.

11. Tyler, Ibid., p. 13.

12. Steve K, Kologi, Preconstruction Bureau, Montana Highway Department, Personal Communication.

13. Rand-McNally, "Auto Trail Map of Montana", 1921.

14. Elkhorn was developed about 1934 and the Diamond Bar Inn at Jackson was developed about 1950.

15. Ibid., p. 3, Warren J. Brier, Missoulian - Sentinel, August 16, 1964, N.P.

16. Nedra Bayne, "The Broadwater, Relic of Elegance", in Montana: The Magazine of Western History, XIX, No. 3, (Summer, 1969), p. 3.

17. Ibid. p. 4.

18. Slater T. Smith, retired manufacturer's representative, personal communication, June 14, 1977.

19. Bayne, op. cit., p. 5.

20. Ibid. p. 3.

21. Ibid. p. 5.

22. Ibid. p. 7.

23. Brier, Ibid.

24. Kalispell Times, June 18, 1931, N.P.

25. Ibid.

26. W. E. Rowe, Meagher County Business Directory, (White Sulphur Springs: S. I. Winscott, 1898), and Robert A. Bailey, Mayor, White Sulphur Springs, personal interview, August, 1971.

27. Leslie R. Hayes, 800 Holmes Avenue, Butte, Montana. Former Star Route operator for the U.S. Post Office Department, personal interview. Mr. Hayes discussed a three-day business trip from Miles City to Dillon, Montana, in about 1926. The old route from Miles City to Reedpoint crossed the Yellowstone River several times and took over 16 hours to cover the present 194 road miles. Heavy snows prevented them from reaching their ultimate destination, Wisdom, Montana.

28. Kalispell Times, op. cit.

29. Olin D. Wheeler, Wonderland 1902, Northern Pacific Railroad Publication, 1904, p. 63.

30. Alice Kent, Billings Gazette, May 11, 1963, also see John Whithorn, Montana in the Good Old Days, brochure, N.P.

31. Kalispell Times, op. cit.

32. Glacier County Chief, June 10, 1935, N.P.

CHAPTER IV

TRAVEL AND SPATIAL RELATIONSHIP TO TSRs (1975)

> The travel sector . . . has grown substantially over the last few years. As national income and leisure time rise, it is likely that this sector will experience even greater gains, particularly in light of the spectacular natural attractions found in Montana.
>
> Judith H. Carlson[1]

The period from 1930 to 1975 was a relatively sluggish time in Montana's economic history despite an increasingly stable and diversified economy.[2] Compared with most other states, Montana's economy grew at a very slow pace primarily because employment in agriculture and mining sharply declined during the period.[3]

Industries which gained employment in other states (lumber, petroleum, and tourism) grew slowly in Montana to fill the gap.[4] Major manufacturing never was able to gain a firm foothold in the state.[5] The same economic stagnation (caused by the depression and World War II) was compounded for TSRs by a change in the mode of travel from trains to cars and buses.[6]

Modes of Travel and TSR Decline

The development of tourism in Montana may have caused a paradoxical decline in the popularity of TSRs.

The changing methods of travel used to reach TSRs suggests both a decline in the popularity of passenger train travel and a decline in the popularity of TSRs.

During the 1930's, passenger trains made up to 16 trips daily past Gregson Hot Springs.[7] By 1955, passenger service had not only been discontinued to Gregson from lack of public interest, but to all Montana TSRs as well.[8]

The United States Department of Transportation has explained declining popularity of train travel in the following way:

> Train ridership went into a steep decline after World War II because the railroads allowed service to deteriorate. Coaches were filthy, service non-existent, and the trains habitually late. Dwindling revenues led to further service cutback and a vicious circle began.[9]

A lack of public interest still haunted the railroads in 1978. According to a Harris poll conducted in February, 1978, travelers preferred to take trips of 100 miles or more by automobile, plane, or bus, in that order.[10]

As railway passenger service was declining, automobile usage was increasing. Many persons continued to travel in Montana, but their destination was other than to TSRs.

Table 5 compares the number of vehicles registered in Montana from 1929 to 1975. From a low of 112,700 in the depression year of 1933, the number of registrations climbed to over 196,000 only to drop to 160,633 by the end of World War II (1945).

The number of vehicles has increased substantially every 10 years since that time.

It seems that rail-based tourism has been replaced with tourism by automobile in Montana.

TABLE 5

VEHICLES REGISTERED IN MONTANA
1929-1975
(Private and Public Vehicles)

	Automobiles	Trucks	Total
1929	115,771	26,295	142,066
1933	83,342	29,318	112,700
1935	114,901	37,872	152,773
1940	144,129	51,886	196,015
1945	110,042	50,591	160,633
1950	182,491	82,401	264,892
1955	231,926	104,168	336,094
1960	260,838	117,689	413,075
1965	296,722	141,625	478,896
1970	320,476	172,793	493,269
1975	385,038	239,441	624,479

SOURCE: Montana State Highway Commission, Montana Highway History, (Helena, Montana State Highway Commission, 1960) pgs. 76-77. Registrations after 1959 are from State Highway Commission, Planning Survey Division, Helena, Montana.

NOTE: Includes private, federal, state, county, city and other publicly owned vehicles. Figures do not include trailers, motor cycles or special mobile equipment.

Routes of Travel and TSR Location

In 1975, Montana TSRs seemed isolated outside an advanced transportational network. TSRs were located "off the beaten path," away from major roadways.

Three railroads crossed the state in 1975, and four others served the western part of Montana (Figure 6). Railroads no longer offered passenger services to individual TSRs. TSRs located practically on the main line had been closed (Hunters, Pipestone, Broadwater, and Corwin).

An interstate highway system connecting primary and secondary state highways gave the traveler a choice of going nearly anywhere he wished on a good road (Figure 7). TSRs were located relatively distant from the interstate system and major Montana highways.

Changing Patterns of Travel

Beginning in the 1920's, a mushrooming of tourism-related development had been felt throughout the nation and, more slowly, in Montana.

> Something had to be done to accommodate the flood of motor campers, and at first towns set aside camping areas. Then a few enterprising farmers began to build cabins, and before long tourist courts blossomed out. In 1922, according to the American Automobile Association, there were some 600 tourist courts. By 1940, we had in this country 13,521 courts and camps doing an annual business of $37 million. Along with courts and camps, tourist homes came into existence to serve the traveler.[11]

At the same time as tourism was growing, TSR owners were experiencing a perplexing decline in the popularity of their resorts.

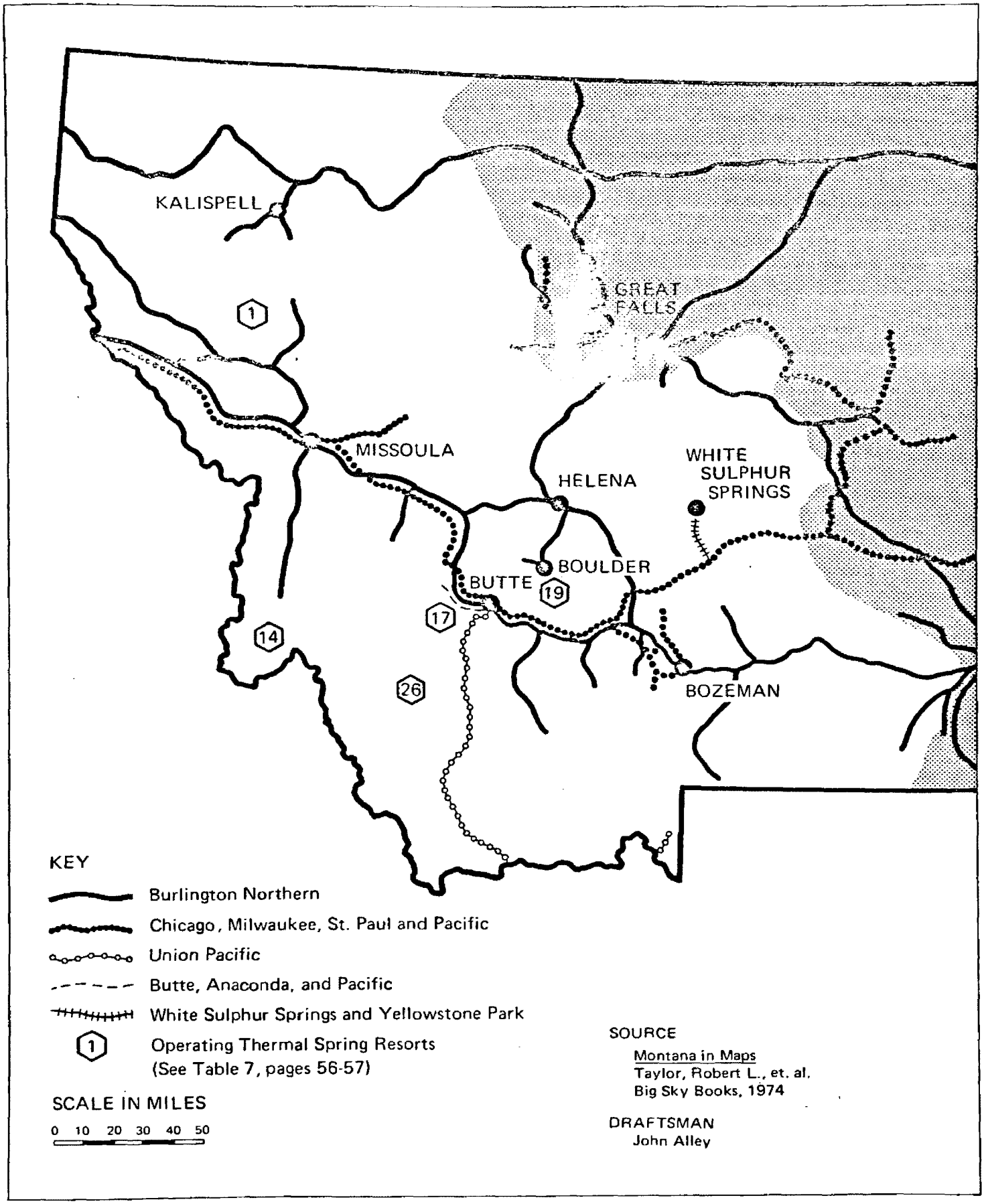

Figure 6. MAJOR RAILROADS AND OPERATING TSRs 1975.

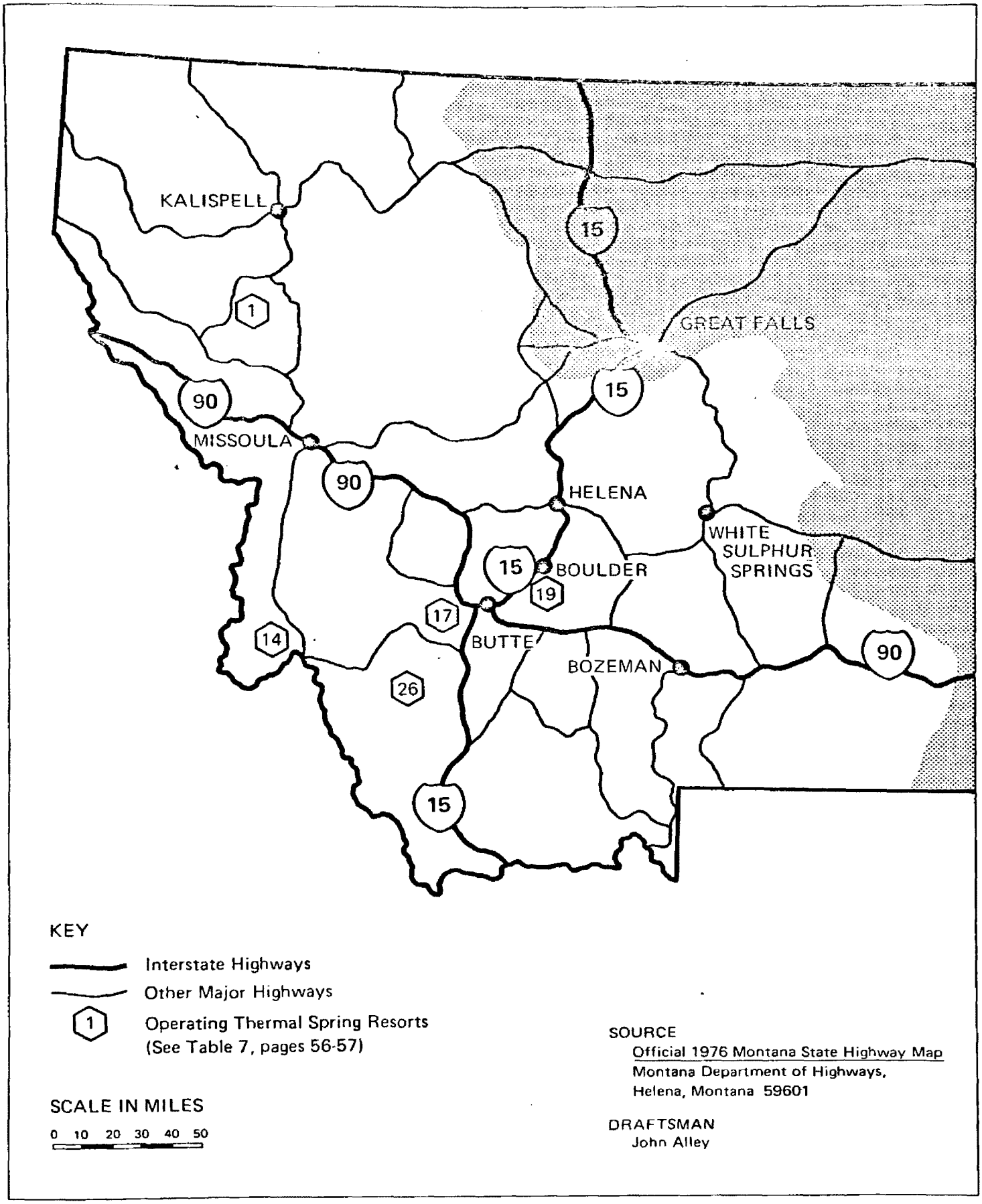

Figure 7. MAJOR HIGHWAYS AND OPERATING TSRs OF WESTERN MONTANA (1975).

In the late 1920's and 1930's, public interest in the TSRs declined when second- and third-generation owners could not promote successfully the therapeutic aspects of the spring.[12] Some resorts and hotels (Hunter's, Gregson, Broadwater, Boulder and Alhambra) were converted into dance halls, gambling casinos, and even brothels.[13] Some remote resorts (Hunter's, Sleeping Child, Lolo) deteriorated quickly and became unpopular because their facilities were obsolete. TSRs located near centers of population were unexplainably popular for a time and then fell into disuse.

In general, Montana's tourism dropped off rapidly from 1941 to 1946 in keeping with the national war-time policy of restricted construction, use of materials, and travel.[14]

The degree of declining use of Montana's highways near TSRs during and after World War II is shown in Table 6. This table suggests TSR patrons may not have visited the springs frequently during the war years.[15]

Beginning in 1946, postwar prosperity gave an enormous boost to western tourism. By automobile, airplane, train, and camper, the affluent tourists came to Montana in ever increasing numbers.[16] They came mainly for outdoor recreation -- hunting, skiing and snowmobiling. Along the state's main highways, cities and towns sprouted new motels, restaurants, and gas stations to serve the tourists.[17] As tourist courts competed for trade, the modern motel came into existence, often with restaurants and swimming pools, the rooms air-conditioned and containing radios and television sets.[18]

TABLE 6

VEHICLE COUNTS NEAR TSRs
(Average 24-hour Traffic)

	1941	1942	1943	1944	1945	1951	1965	1975
Medicine H.S.	209	146	127	129	127	224	435	860
Gregson H.S.	2900	2630	1810	1679	1798	2843	3627	5528
Boulder Hot Springs	652	485	272	288	299	566	1019	1727
Pipestone H.S.	1105	815	580	560	555	1229	1682	2915
White Sulphur Springs	238	175	122	123	143	509	918	1147
Hunter's H.S.	642	421	345	354	463	1071	1992	3265
Bearmouth H.S.	1069	748	453	502	570	-	-	3665

Source: James W. Hahn, Chief
Montana Highway Department
Planning and Research Bureau
1977

As roads improved and as middle class families acquired dependable cars, roadside 'motels', camping spots, and restaurants began to challenge the old downtown hotels and railroad resorts.[19]

The condition of TSR facilities at this time helps support the allegation that the spread of tourism brought a decline to the TSR after World War II:

> Our new habit of taking tours had its effect on older institutions. Hotels suffered. Resorts that used to book vacationers for two weeks or a whole summer, found themselves transient hotels, entergaining guests at night. Many went out of business altogether. Certain railroads serving vacation spots lost 80 per cent of their business to the automobile.[20]

Montana TSRs in 1971, while varied, were generally old and did not seem to provide much more than could be found at a typical Howard Johnson's or Holiday Inn. In contrast, most urban area motels seemed better situated near heavily traveled routes. A motel's location near service areas made it better situated to handle one-night occupancy by the traveling public. Conversely, most TSRs seemed to offer little that could not be found elsewhere.

The automobile was used widely by the traveling public for business and recreation. The flexibility afforded the public in pursuit of outdoor recreational activities seemed to have impacted adversely most TSRs. The maximum development of patron mobility coincided with a general decline in TSR popularity. This decline is explained by the fact that the automobile made patrons independent of resorts.

Declining TSR Census

Rowe listed fifteen hot springs which he felt would draw tourists to Montana in 1926.[21] However, by the late 1950's, only 8 of 23 commercially developed Montana hot springs were used as TSRs.[22] The lowest number of TSRs was reached in 1971 when only Camas Hot Springs, operated under the auspices of the Federal Government, could be considered a fully operative spa.[23] Six other resorts (Lolo, Medicine, Boulder, Jackson, Elkhorn, and Chico) were all the TSRs that remained open to the public.

In 1975, the popularity of TSRs may have been increasing as shown in Table 7. In addition to the seven operative TSRs from 1971 (above), Fairmont Hot Springs was a fully operative spa at the site of the former Gregson Hot Springs. Other commercially developed hot springs included Camp Aqua, Sleeping Child, White Sulphur, New Biltmore, Norris, Bozeman and McLeod. Privately-owned hot springs included Gallogly, Alhambra and Warm Springs. The latter was the site for a state mental hospital. Gallogly and Alhambra were privately owned and closed to the public.

The remainder of privately owned springs were warm rather than hot and were used for irrigation or stock watering.

TABLE 7

MONTANA THERMAL SPRINGS -- 1978

		OPEN	CLOSED	PRIVATE
1.	Camas H.S.	X**		
2.	Camp Aqua	X		
3.	Quinn's		X	
4.	Lolo H.S.	X*		
5.	Unnamed (Bearmouth)			X
6.	Sun River H.S.			X
7.	Broadwater		X	
8.	Big Warm Spring			X
9.	Little Warm Spring			X
10.	Warm Springs			X
11.	Dunphy Creek			X
12.	Sleeping Child H.S.	X		
13.	Gallogly H.S.			X
14.	Medicine H.S.	X*		
15.	Warm Springs			X
16.	Anaconda			X
17.	Gregson (Fairmont)	X**		

NOTE: The numbering system follows Stearns, et al., Thermal Springs in the United States," USGS Water Supply Paper 679B, 1939, pgs. 151-155.

* TSR - Thermal Spring Resort
** - Spa
*** All thermal springs in Western Montana are shown in Figure 5 of this thesis, page 32.

TABLE 7 - Continued

MONTANA THERMAL SPRINGS -- 1978

	OPEN	CLOSED	PRIVATE
18. Alhambra			X
19. Boulder	X*		
20. Pipestone		X	
21. Bedford			X
22. Warner			X
23. Plunkett			X
24. White Sulphur	X		
25. Diamond Bar Inn (Jackson)		X	
26. Elkhorn	X*		
27. New Biltmore	X		
28. Lovell			X
29. Ryan Canyon			X
30. Barkell		X	
31. Potosi		X	
32. Norris	X		
33. Puller's			X
34. Unnamed			X
35. Bozeman H.S.	X		
36. Hunter's H.S.		X	
37. Chico	X*		
38. Corwin		X	
39. Bear Creek			X
40. Anderson's		X	
41. McLeod	X		
42. Bearmouth			X
43. Unnamed			X
44. Valseth			X
45. Galt			X
46. Unnamed			X

Summary

Tourism developed as an important industry in Montana at a time when agriculture and mining sharply declined.

The development of tourism in Montana may have caused a paradoxical decline in the popularity of TSRs. The changing method of travel from train to automobile or bus suggests both a decline in the popularity of passenger train travel and a decline in the popularity of TSRs.

As passenger train service decreased in popularity, travel by automobile increased. By 1978, Montana TSRs seemed isolated outside an advanced transportational network.

TSRs were first hurt economically by the repeal of Prohibition and then by the Depression. TSRs suffered during 1941 to 1946 from the national war time policy of restricted road construction and travel.

In the decades after World War II, the condition of TSR facilities helps support the allegation that the spread of tourism brought a decline to TSR popularity. Motels, restaurants and gas stations located conveniently to towns and highways had an adverse effect on older, out-of-the-way resorts.

The number of TSRs in Montana steadily declined until only seven remained open to the public in 1971: Camas, Lolo, Medicine, Fairmont, Boulder, Elkhorn, and Chico.

Two seasons have developed for the TSR: Summer season and Fall hunting season.

The use of the TSR by 1975 appears to be primarily for swimming and weekend recreation.

FOOTNOTES

CHAPTER 4

1. Judith H. Carlson, (ed.), Economic Conditions in Montana: A Report to the Governor, Old West Regional Commission, (Helena: N.P., 1976), p. 8.

2. Michael P. Malone and Robert B. Roeder, Montana: A History of Two Centuries, (Seattle: U. of Washington Press, 1976), p. 241.

3. Ibid.

4. Ibid.

5. Ibid., p. 264.

6. Ibid., p. 241.

7. Butte Chamber of Commerce, Butte: The Wonder City of the West, (Butte: McKee Printing, 1912), N.P. Also, Wallie Lesage, Butte, Montana, personal interview, December 1977.

8. Hugh Quinn, a Butte, Anaconda and Pacific Railroad supervisor, personal interview, March 12, 1978. The B.A.&P Railroad was incorporated in 1892 and operated passenger trains for many years between Butte and Anaconda. But with vanishing traffic as a result of the automobile and bus, passenger service was discontinued in April, 1955.

9. Robert Lewis, "Trains: We Love Them, But We Won't Ride Them," Montana Standard, June 3, 1978, p. 1.

10. Ibid. The poll stated that 56 percent chose cars, 28 percent planes, 8 percent buses, 6 percent trains, 2 percent weren't sure.

11. Poyntz Tyler, (ed.), American Highways Today, (New York: Wilson Company, 1957), The Reference Shelf, Vol. 29, No. 1, p. 39.

12. Robert E. Lewis, Thermal Springs in Colorado, University of Colorado, Masters Thesis, 1966, p. 4.

13. Personal Interviews, Tom Smith, 1971.

14. State of Montana Department of Highways: Montana Highway History: 1943 to 1959, Vol. II, Planning Survey Division (Helena: N.P., 1960), p. 3.

15. An opposite opinion was expressed in separate interviews with Mae Marchesseau Brown and Laura Judge, Polaris, Montana. They felt that tight money of the early 1930's and gas rationing of the early 1940's caused people to stay longer at Elkhorn Hot Springs rather than travel about the country side. (July, 1971).

16. Malone, op. cit., p. 261.

17. Ibid.

18. Poyntz Tyler, op. cit., 39.

19. Malone, op. cit., p. 261.

20. Tyler, op. cit.

21. J. P. Rowe, "Montana Provides Play Opportunities," Missoulian, June 6, 1926, N.P. Rowe named Alhambra, Boulder, Broadwater, Camas, Elkhorn, Gregson, Hunter's, Lolo, Medicine, Nimrod, Pipestone, Quinn's, Sleeping Child, Silver Star, and Warm Springs.

22. Montana Chamber of Commerce. "Hot Springs and Resorts in Montana", (brochure) c. 1950.

23. Mr. Joseph Orr, personal interview, Manager, Camas Hot Springs, September, 1971.

CHAPTER V

CONCLUSION

Modes of transportation and their changes are investigated as a key variable in the decline of TSRs in Western Montana. Field work, undertaken during the Summers of 1971, 1972, 1975 and 1977 confirms sparse historical data about TSRs. This field work focuses on interviewing owners and managers of most Western Montana TSRs. Information in this paper concerning transportation routes and spatial relationship to TSRs are presented in three time periods: 1889, 1928 and 1975.

Routes of Travel

The earliest wagon roads followed Indian and buffalo trails into and through the region. Post roads evolved from wagon traces and became the basis of the Seven Percent Highway System legislated by the Federal Government in 1916.

Better roads were lobbied by farmers, bicyclists, automobile organizations and the railroads. In 1921, the Montana State Highway Commission was created to maintain and improve major rural roadways within the state. Considerable improvements were made in road design and structure. However, the locations of Montana's major highways have not changed significantly since 1889.

Evolution of TSRs

Through 1889

TSR location in Montana was determined by proximity to a hot spring. The first developed TSRs were successful because of nearness to railroad main lines. In 1889, the successful railroad resorts included Alhambra, Boulder, Broadwater and Hunter's Hot Springs.

The major use of the TSRs seems to have been for therapeutic relief of arthritic conditions. Recreational or leisure activities appear to have been preferably modest to provide a restful atmosphere for patrons.

Through 1928

The mobility of Montanans changed rapidly in the first three decades of this century. Railroad and automobile development encouraged road and highway improvements which brought customers out into the country and to the TSRs.

By 1928, the TSRs seem to have been peaking in terms of development and use. Relatively easy railroad and automobile access encouraged family use of the TSR. Long visits lasting a week or longer were common. The TSR was used by sportsmen and recreationists for swimming tournaments and conventions.

Through 1975

During and after the depression years, the TSR fell into a period of decline and closure. TSRs also suffered during

1941-1946 from the national war time policy of restricted road construction and travel.

In the decades after World War II, the spread of tourism brought a paradoxical decline to TSR popularity. Motels, restaurants and gas stations located conveniently to towns and highways thrived on the same tourism which was causing an adverse effect on older, out-of-the-way resorts. TSRs remained popular for short visits with the primary attraction being its swimming pool. TSRs became little more than rustic motels, as they offered little that could not be found elsewhere.

Findings

The location of Montana's rural highways relative to TSRs has not changed significantly since 1889.

Modes of transportation have changed from tourism by passenger train to tourism by automobile and bus.

Tourism by automobile has caused the development of convenient roadside motels, trailer courts, restaurants and recreation with which the older railroad resorts could not compete.

Use of the TSR evolved from a place for healing and rest (1889), into a place for gaity, excitement and recreation 1928), and into a kind of rustic motel with a nice swimming pool (1975).

The Prospect

The outlook for TSRs as they existed in 1971 was not encouraging. Older TSRs had been closed and existing TSRs were in an unkept condition.

That outlook in 1978 has begun to change. Once-popular resorts which seemed beyond the help of a simple face-lifting have been revived. TSRs in Montana seemed better staffed, remodeled and more attuned to modern recreational trends in 1978 than in recent decades. Either new modes of operation had been initiated, or older successful modes revised which seemed to maximize use of the mineral water, the scenic location and contemporary recreational needs.

Several places (Gregson, Alhambra and Gallogly Hot Springs) offered a good example of what could be accomplished in the future. At each TSR the quality of thermal springs water was beneficial, but secondary to the success of the present operation. The primary relationship between these places and the hot mineral water was in the chance location of a thermal spring at that particular site. In every instance, the site could have been used as well if a cold water spring had been there. Present successes were founded upon access and the seasonal recreational services provided to clientele.

The potential relationship between thermal springs and the future is probably best illustrated by the resort-recreational complex at Fairmont (Gregson), Montana. The

recreational scope of the Fairmont project and extensive investment may well be the key to what is required in regional recreational development for the future.

To promote longer stays and encourage a wider range of clients, Fairmont Hot Springs offers a broad range of recreational activities to guests and visitors. Activities include horseback riding, hunting, hiking and fishing trips, an 18-hole golf course, a small zoo and live evening entertainment. Public appreciation to this kind of facility is shown by the fact that it is booked two years ahead for state and regional conventions.

Another direction for hot springs development may be toward use as rest homes, sanitariums, or hospitals. Focal points for clusters of homes or office buildings also may become a reality in the near future. Fairmont and Elkhorn have home sites available to the public in 1978.

Gallogly Hot Springs is a good example of how scenic mountain locations can be used for multi-purpose recreation but on a much smaller scale than the Fairmont project. Gallogly is used as a boys' camp; as a site for summer homes; and as a jump-off point for skiers in Winter. Gallogly (and Sleeping Child) also may be indicative of an emerging trend to convert hot springs bathing facilities into private clubs catering to out-of-state people.

This potential is probably not high, and motivation by management seems low at this time. Fairmont Hot Springs may or may not be setting the trend by heavy financing, good

promotional campaigns, and strong management. Most TSRs need exceptional effort to be lifted from their present low status of second-rate campgrounds or swimming pools to the status of Resort, Spa or Recreation Complex. Water-based outdoor recreation continues to have a high demand in Montana. But, changing transportation technology, leisure time use, and societal desires may continue to have an adverse impact on Montana's TSRs. Conversely, unknown elements of future changes may reverse such adverse impacts. Costs of travel may become excessive; a new variety of sports activities may encourage the recreating public to stay longer at TSRs; appreciation for the hot, natural, mineral water may encourage greater public use of the TSRs.

It is hoped that efforts to improve, promote and maintain the TSRs are forthcoming so that this form of leisure activity will not disappear.

APPENDICES

APPENDIX I

THE PATTERNS OF LOCATION

The purpose of Appendix I is to provide the interested reader with a brief description of 1) the physical setting, and 2) the geological character of thermal springs found in Western Montana.

A much clearer and broader view can be obtained by referring to texts and papers referenced in the Footnotes following Appendix I.

Physical and Geographic Setting

Montana's portion of the Northern Rocky Mountain Province was shown in Chapter I to be the focal point for this study. Consisting of the mountainous area of Western Montana, this part of the Rocky Mountain Province is a region of high mountains and plateaus and of intermountain valleys.[1]

West of Montana, the mountain mass of Central Idaho consists of a maze of peaks with little discernible scheme of arrangement. But the mountain forms of Western Montana are in striking contrast with those of Central Idaho. The northern group of Western Montana mountains extending into Canada presents a linear arrangement of its elements so that

several parallel ranges are recognized. The block-faulted ranges such as the Swan, Mission, and Flathead Ranges create nearly parallel valleys and natural east-west boundaries in the region.[2]

The block-faulted mountains creating the nearly parallel ranges in Montana resulted from compressive forces probably eminating from the southwest and vertical deformation of large segments of the earth's surface. Major earth movements identified as overthrust faults were created along slipping planes as much as 75 miles long and 8 miles wide.[3]

Although the study area is underlain by a variety of rocks with complicated structure, three rather uniform batholiths are present. The Idaho, Boulder, and Phillipsburg batholiths are masses of intrusive granite which may be the reason for the numerous hot springs found within the region.[4]

The Mineral, Bitterroot, and Centennial Ranges make up the western boundary of Montana. Dissecting the region is the Continental Divide which causes western water to flow via the Columbia Basin to the Pacific Ocean, while eastern waters flow to the Gulf of Mexico via the Missouri and Mississippi Rivers. To the north, the rivers flow from portions of the Teton Ranges and Mount Glacier via the Belly and St. Mary Rivers into Hudson Bay.[5]

The easternmost mountain range along the Rocky Mountain front is the Lewis Range. This high barrier forming part of the

Continental Divide is deeply dissected by streams and carved by great valley glaciers. Southeast of this range are two low outliers of the Rockies called the Big and Little Belt Ranges. Although somewhat broken up, the Little Belt Range continues south as the Castle and Crazy Mountains, which, with the Absaroka range, form the last barrier to the Great Plains.

Extending southward from the Flathead Lake area is a long valley known as the Rocky Mountain Trench.[6] This geologic feature contains a relatively flat floor underlain by alluvial deposits allowing easy transportation and highly developed agriculture. Not surprisingly, river valleys are the most habitable feature on the natural landscape.

Main lines of social intercourse also are drawn along the lineal topographic constraints. Major highways parallel rivers and valleys connecting the major cities, and railroads follow lines of least resistance from north to south and east to west over low passes in the mountains.

The Clark Fork Valley, extending from Missoula to the Deer Lodge Valley, affords easy communication between many places in Central Montana and is on the route of major east-west movement of transportation. In the remaining central and southern portions of the state, most towns also are interconnected by valleys.

Some towns in Western Montana, such as Virginia City, Butte, and Helena, were not located in fertile valleys but evolved from activities associated with earlier mining camps. Such towns developed from proximity to igneous

intrusive minerals which yielded gold, silver, copper, and other precious metals.[7]

The siting of thermal spring resorts also has been dependent upon geologic accidents of known origin. Hot springs are so consistently associated with natural geologic features that Waring noted, "The most notable feature of the distribution of thermal springs is their close association with the main belts and areas of volcanoes of present or geologically recent activity."[8]

Location of successful thermal spring resorts has had little, if anything, to do with close proximity to populated areas or towns. In Western Montana, most of the thermal springs and all of the thermal spring resorts lie within the region of recent volcanoes and are associated with faults and igneous intrusions.

Location and Character of Thermal Springs

Hot springs are vents in the earth's crust from which hot water issues. Temperature is the key to a differentiation between hot, warm and non-thermal springs. In Europe, a spring is thermal if its temperature is 70°F. or above. In the United States, a spring is generally considered to be thermal if its temperature is 15°F. above the mean annual temperature of the air at that location.[9]

In the Northern Rockies, a standard has been set by common usage.[10] In this paper and as set by common usage, the fixed value of 70°F. will be the temperature demarcation between thermal and non-thermal springs.

Hot springs have been described as being remarkably uniform in temperature, flow, and mineral content.[11] In some parts of the world, the character of some springs is known to have remained the same for centuries.[12] Recent studies by the Montana Bureau of Mines have shed little light on the question of whether chemicals or water temperature of thermal springs have changed in Montana.[13] Records have not been kept consistently or acquired in Montana and cannot be depended upon for accuracy.[14]

The character of thermal springs is represented by presenting the problem in two phases: the sources of the water and the sources of the heat.

Water sources are thought to be meteoric or juvenile. The former are waters derived from the atmosphere which have percolated downward into the earth. The latter are produced directly from magma at great depth.[15]

Water percolating into the earth assumes the temperature of the enclosing rocks. A geologic principle has developed that the increase in temperature is on the order of 1° Celsius for every 100 meters of depth below the land surface.[16]

In Montana, the following rough scale has been observed:

> Water rising from a depth of 1,000 feet should be about 12 to 15 degrees warmer than the annual mean; and from 2,000 feet, 25 to 30 degrees warmer. Water from 1,000 foot Artesian wells in eastern Montana is from 60 to 70 degrees, and 'bottom-hole' temperatures in 8,000 to 9,000 foot oil wells in eastern Montana are from 180 to 205.[17]

Juvenile waters are produced directly from the subsurface magma. The magmatic water rises in the form of steam along with other volcanic gases through clefts in the rock, is condensed by the groundwater, and becomes mingled with it.[18]

The proportion of juvenile waters in thermal springs may not be very large. But in Montana, the major heat source originates logically from association with magmatic plutons and other intrusives. That observation is confirmed by a comparison of hot spring sites associated with known areas of recent igneous and volcanic activity.

Several location maps of igneous and volcanic rocks in Western Montana are available.[19] The approximate sites of the several hot springs and warm springs are numbered for identification and listed in Stearns, et al.[20]

Masses of intrusive materials are located in Western Montana.[21] No less than twelve hot springs rise in the mountains and valleys associated with these intrusives.

In the Bitterroot and Flathead Valleys, the rift conditions and igneous intrusives should be favorable for thermal springs, but only Lolo, Sleeping Child, Gallogly, and Medicine Hot Springs are found in the southern section, and Camas Hot Springs in the northern section.[22]

The principal hot springs of the region are found in the mountains associated with fractured granite or schist.[23] Several warm springs do issue from folded and faulted Paleozoic strata and others from Cretaceous beds. A very few warm springs rise in valleys bordered by Tertiary or Quaternary lava.[24]

Several old hot springs are located in the Yellowstone Valley between Big Timber and Gardiner, Montana. Along with the springs near Hot Springs and Dillon, they appear to be associated with Cretaceous and Tertiary volcanics.[25] Most of the remaining springs in Western Montana rise from deep within the earth and are meteoric waters associated with zones of faulting.

SUMMARY

The Setting

The parallel mountain ranges of Western Montana form the physical setting in which nearly all Montana's thermal springs are found.

The block-faulted mountains creating the nearly parallel ranges resulted from compressive forces probably eminating from the southwest and vertical deformation of large segments of the earth's surface.

The area is underlain by a variety of rocks having complicated structure. Three rather large batholiths may help point toward a reason for the numerous hot springs found in the region.

Main lines of social intercourse are drawn along the lineal topographic constraints. Major highways parallel rivers and valleys connecting the major cities. Railroads follow lines of least resistance over low passes in the mountains.

Some towns in Western Montana were not located in fertile valleys but were developed from proximity to igneous intrusive minerals yielding precious minerals. The siting of thermal spring resorts also has been dependent upon geologic accidents of known origin. Location of successful thermal spring resorts has had little to do with close proximity to population centers.

Character

Hot springs seem generally to be uniform in temperature, flow and mineral content. Common usage has set hot springs temperatures at 70^{o}F. or above, warm springs below 70^{o}F.

Character of thermal springs is determined by the source of the water and the source of the heat.

FOOTNOTES

APPENDIX I

1. Charles B. Hunt, Physiography of the United States. (New York: McGraw-Hill), p. 264.

2. Norah D. Stearns, Harold T. Stearns, and Gerald A. Waring, Thermal Springs in the United States. United States Geological Survey, Water Supply Paper 679, 1939, p. 10.

3. Eugene S. Perry, Montana in the Geologic Past. Montana Bureau of Mines and Geology, Bulletin 26, 1962, p. 39-41. See also M.P. Billings, "Physiographic Relations of the Lewis Overthrust in Northern Monrana." American Journal of Science, 235, pp. 260-272.

4. Robert E. Lewis, Thermal Springs in Colorado. University of Colorado, Masters Thesis. 1966, p. 12.

5. Hammond Incorporated, World Atlas. (Doubleday & Co., New York) No date, p. 97.

6. Raphael Freund, The World Rift System, Geological Survey Canada, Paper 66-14, 1965, pp. 330-344.

7. Ibid., p. 56. Perry notes, "Similar and associated mines within a local area are commonly grouped together into 'mining districts' . . . . A list of all the metal mining districts in Montana contains more than 100 names . . . . more or less individuals in themselves."

8. Gerald L. Waring, Thermal Springs of the U.S. and Other Countries. Geological Survey Professional Paper 492 (Revised by Glankenship and Bentall) 1965, p. 10.

9. Waring, p. 4. See also Emons, Thiel, Stauffer, and Allison, Geology Principles and Processes. (New York: McGraw-Hill), 1955, p. 129.

10. Lewis, p. 7.

11. Waring, p. 3.

12. Waring, Ibid.

13. Sid Gross, interview, Director, Bureau of Mines and Geology, Montana Institute of Science & Technology, Butte, Montana, March, 1972.

14. Ibid. See also Stearns, et al., Thermal Springs of the United States. U.S. Geological Survey Water Supply Paper 679, 1937, p. 60. The difficulty in obtaining useful data related to resorts was stated in Charles A. Stansfield, A Geographic Analysis of Selected British and American Resort Towns. University of Pittsburgh, 1965, and in George F. Deasy, p. 290.

15. Charles F. Park, and Roy A. Mac Diarmid, Ore Deposits. (W. H. Freeman & Co., San Francisco, 1970), p. 16-37. See also Norah Stearns, p. 66.

16. James Gilluly and others Principles of Geology. (W. H. Freeman & Company., San Francisco) 1968, p. 484.

17. Perry, p.38.

18. Park.

19. Oscar E. Meinzer, Outline of Ground-Water Hydrology. U.S. Geological Survey, Water Supply Paper 494, 1923, p.42. Also, Robert E. Lewis, p. 3, and Donald E. White, "Thermal Waters of Volcanic Origin." Geological Society American Bulletin 68, No. 12, Part I, 1957, pp. 67-69, cited in Norah Stearns, pp. 67-69.

20. Stearns, p.67.

21. W. H. Weed, Geology and Ore Deposits of the Butte District, Montana. U.S. Geological Survey Professional Paper 74, 1912.

22. Stearns.

23. Waring, p. 10.

24. Perry, p. 10.

25. Ibid.

APPENDIX II

QUESTIONNAIRES AND TABLES

The author visited each hot spring in Western Montana during 1971 and 1972 and returned to selected TSRs in 1975 and 1977. TSR owners or operators were interviewed using Questionnaire A. Questionnaire B was used in 1977 to confirm the accuracy of previous information.

Tables 1 through 5 summarize selected data from the questionnaires.

QUESTIONNAIRE A

RECREATION POTENTIAL FOR MONTANA'S HOT SPRINGS

1. Who is the present owner?
2. Is owner also the manager?
3. How long have you run the springs?
4. Total acreage?
5. Land leased or owned?
6. Do you keep a guest book?
7. Do you keep records of age, sex, occupation of the customers?
8. Do you belong to a commercial association or organization of resort hotels, hot springs, etc.?
9. What national forest is the springs located in or near?
10. Is there a camping area?
11. Is there an area to picnic?
12. Are there facilities, besides rooms and bathing, for winter sports at or near the hot springs?
    Is this of benefit to you during the winter?
13. What is your best season? Spring
    Summer
    Fall
    Winter
14. Check the following activities promoted:
    a. horses
    b. picnicking

c. swimming

d. therapeutics

e. dances

f. camping

g. fishing

h. hunting

i. other

15. What towns are located nearest the hot springs?

16. From what towns do you obtain the majority of your customers?

17. In your opinion, how long do most people come to stay?

a. less than one day

b. 1 day

c. 5 to 7 days

d. over 1 week

18. Do the people staying for a week or more come from a different (town) than the week-enders?

19. Do you feel that the pool provides most of the income of the operation?

20. Do you have a liquor license? Since what date?

21. What types of building (as to function) do you have?

	Numbers	Condition
a. Pool (covered?)		
b. Lodge (or hotel)		
c. Office (separate)		
d. Private residence		
e. Cabins (or motel units)		

Numbers Condition

f. Cafe (or restaurant)

g. Outbuildings (sheds, barns, etc.)

22. Is the main building more than one story high?

23. Would you call this hot springs a resort, spa, plunge, other? Why?

24. Has the hot springs always been used for the same purpose? Yes _____

No _____

25. Over the years was there a greater emphasis upon:

	1900	1920	1940	1970
a. swimming				
b. therapeutics				
c. family fun				
d. longer stays				
e. weekend trips				
f. "an escape to nature"				
g. other				

26. Over the years who has mainly used the springs

	1900	1920	1940	1970
a. local people				
b. businessmen				
c. wealthy people				
d. teenagers				
e. family				
f. working people				
g. others				

27. How many employees do you have?

Does this vary seasonally? How?

Do you have medical personnel, lifeguards, cooks, others?

28. Are there fresh water springs in the vicinity?

29. Are the main hot springs covered? How?

30. What size pool(s) do you have?

Indoor or outdoor?

31. Do you have a shallow end for children?

32. Is there a separate wading pool?

33. What is the temperature of the hot springs?

of the plunge?

of the baths?

34. Do you know the discharge per minute?

35. Do you use chlorine or any other additives?

36. How often do you change the water in the pool?

37. Do you have lockers for pool users?

38. Does the pool contain

a. diving board

b. stairs

c. ladders

d. floats to separate deep & shallow ends

e. tile bottom

f. a covering

39. Do you have changing rooms for the pool?

40. Do you have showers?)
) condition
toilets?)

41. When was the entire pool last painted?

42. Is there someone who would know about the history of your particular hot springs?

43. When were the first buildings erected?

    Have there been many owners or managers

    Have there been different pools or other facilities?

44. In your opinion, what is the best asset of this hot springs?

    a. general location

    b. quality (properties) of the water

    c. nearby recreational facilities

    d. condition of the grounds and buildings

    e. easy accessibility from the nearest large town

    f. other(s)

45. What is the main drawback of this hot spring?

    a. distance from town

    b. general location

    c. road condition

    d. condition of the buildings

    e. Montana seasons

    f. other

46. Do you have much trouble with vandalism?

47. Does the future look good for hot springs?

QUESTIONNAIRE B

1. The present owner/manager is....

2. A guest book is kept. Yes ___ No ___

3. Records of age, sex, occupation of guests are kept?

Yes ___ No ___

4. Records of town where guests come from are kept?

Yes ___ No ___

5. Majority of guests come from the following areas:

_____

_____

_____

6. Local people generally support the springs and spend a lot of time here.

Yes ___ No ___

7. Most people come to enjoy the water.

Yes ___ No ___

8. Over the years most guests have stayed for:

	1899	1928	1977
a) less than a day			
b) one day			
c) 5-7 days			
d) over one week			
e) other			

9. Over the years there was a greater emphasis by guests upon:

	1899	1928	1977
a) bathing			
b) swimming			
c) therapeutics			
d) longer stays			
e) shorter stays			
f) weekend trips			
g) family fun			
h) "an escape to nature"			
i) fishing or hunting			
j) a long rest from work			
k) other			

10. Over the years the springs were mainly used by:

	1889	1928	1977
a) local people			
b) out-of-staters			
c) sick people			
d) wealthy vacationers			
e) laboring people on vacation			
f) families			
g) individuals			
h) teenagers			
i) over-night campers			
j) active recreationists			
k) people resting			
l) other			

11. What is the best asset of this hot springs?

	1889	1928	1977
a) general location			
b) quality (properties) of water			
c) nearby recreation facilities			
d) condition of the grounds & bldgs			
e) easy access from nearest town			
f) other(s)			

12. What is the main drawback of this hot spring?

	1889	1928	1977
a) distance from big town			
b) general location			
c) distance from main highway			
d) condition of buildings			
e) Montana seasons			
f) other(s)			

TABLE 1

LAND OWNERSHIP -- 1971

	Years Owned	Property Size (Acres)	Owned or Leased	Corp. Private or Leased	Type of Use**
Boulder	13	1540	Owned	Corp.	R
Bozeman	17	30	Owned	Private	C - P
Camas	30	120	Owned	Corp.	S
Camp Aqua	18	10	Owned	Private	B
Chico	11	10	Owned	Private	R
Elkhorn	11	10	Leased	Leased	R
Hunter's	11	160	Owned	Leased	P
Jackson	0	1	Owned	Private	R
Lolo	14	383	Owned	Corp.	R
McLeod	8	3	Owned	Private	C - P
Medicine	2	153	Owned	Corp.	R
New Biltmore	25		Owned	Private	R
Sleeping Child	11	40	Owned	Corp.	R
Silver Star	24	170	Owned	Corp.	P
White Sulphur	9	1	Owned	Private	M

**Resort, Spa, Plunge, Campground, Motel, Bathhouse

TABLE 2

RECREATION ACTIVITIES AT SELECTED HOT SPRINGS -- 1971

	Swimming	Boating	Fishing	Hunting	Skiing	Snowmobiles	Nature Walks	Picnics	Camping	Horses
Boulder	X		X	X			X			
Bozeman	X							X	X	
Camas	X									
Camp Aqua										
Chico	X		X					X		X
Elkhorn	X		X	X	X		X		X	
Hunter's	X								X	
Jackson	X		X	X						
Lolo	X		X			X	X	X	X	
McLeod	X		X	X		X				
Medicine	X		X				X	X	X	
New Biltmore	X			X	X			X	X	
Sleeping Child	X			X	X		X	X		
Silver Star	X		X	X						
White Sulphur Springs	X									

TABLE 3

ESTIMATED AVERAGE LENGTH OF PATRONS' VISIT TO SELECTED HOT SPRINGS IN 1971

	Less Than One Day	One Day	5-7 Days	Over-One Week
Boulder	X			
Bozeman		X		
Camas			X	
Camp Aqua	X			
Chico		X		
Elkhorn		X		
Hunter's	X			
Jackson				X
Lolo		X		
McLeod			X	
Medicine				X
New Biltmore	X			
Sleeping Child	X			
Silver Star	X			
White Sulphur Springs		X		

TABLE 4

SEASONS OPEN AND
ADDRESSES OF RESPONSIBLE INDIVIDUALS
AT TSRs IN 1978

	ADDRESSES	DATES OPEN
Boulder	Mr. John Frye, Mgr. Diamond S. Ranchotel Box 147 Boulder, Montana 59633	Year around
Camas	Mr. Joseph Orr, Mgr. Camas Hot Springs Hot Springs, Montana 59845	Year around
Chico	John Sterhan, Owner Chico Hot Springs Pray, Montana 59065	Year around
Elkhorn	Mr. Warren Henschel Elkhorn Hot Springs Polaris, Montana 59746	Year around
Fairmont	Mr. Leroy M. Mayes, Vice President and General Manager Fairmont Hot Springs Gregson, Montana 59701	Year around
Lolo	Manager Hot Springs Hotel Lolo, Montana 59847	Year around
Medicine	Mr. George C. Case, Mgr. Medicine Hot Springs Conner, Montana 49827	Memorial Day Through Labor Day

TABLE 5

OTHER MISCELLANEOUS FEATURES
AVAILABLE AT TSRs IN 1978

	Camping Area	Picnic Area	Near Winter Sports	Near National Forest	Fresh Water Springs	Have Liquor License	Have Cafe
Boulder	Yes	No	No	Yes	Yes	Yes	Yes
Camas	Yes	No	No	Yes	Yes	No	No
Chico	Yes	Yes	No	Yes	Yes	Yes	Yes
Elkhorn	Yes	Yes	Yes	Yes	Yes	No	Yes
Fairmont	Yes	Yes	No	Yes	Yes	Yes	Yes
Lolo	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Medicine	Yes	Yes	No	Yes	Yes	No	No