A COUNTY LIBRARY

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LIBRARY
Montana State University
BOZEMAN

A COUNTY LIBRARY FOR GALLATIN COUNTY

to be located in Bozeman, Montana

by

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Foreword

The intent of this thesis study is to research and develop a building program for the main branch of the Gallatin County Federation of Libraries. This federation does not exist, but is only hypothetical in this study. An extension service will operate a bookmobile from the main branch, and this will be considered in the design solution. The smaller branch libraries are considered in this study, but will not be part of the architectural design problem.

This study and the design solution is for a hypothetical building, and should not be understood to reflect the opinions of the Bozeman Library Board of Trustees, nor Bozeman or Gallatin County officials.

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NEED



CONDITIONS CREATING THE NEED FOR A COUNTY LIBRARY

Introduction

"The new building ... presents a handsome appearance."

"The main floor of the library is practically one large room, but is so arranged that partitions may be placed in position if needed. The room is well lighted on all sides."

"In the basement is a large lecture hall that will seat about 100 people. The librarian's private office is also in the basement." (45:7)

The preceding excerpts are from a 1904 edition of The Avant Courier, a weekly publication which was the local newspaper of Bozeman. The remarks describe the recently constructed Bozeman Free Public Library at 35 North Bozeman Avenue.

Additions and Alterations

Although the existing city library building is now 64 years old, it has not been significantly remodeled during that time. The most extensive alterations were major repair of the roof in 1927, and a mezzanine added to the north wing a few years later. Other changes include a different furniture location, a reduced ceiling height at the first floor level, and the addition of a small implement storage shed to the exterior. Also important was the conversion from incandescent to fluorescent lighting fixtures.

The Public Library Today

The library building is essentially the same as it was in 1904. But the quotations taken from the Avant Courier are no longer fitting descriptions of it. This is because the physical facilities have become antiquated. It may also be attributed to our changing values of architecture.

Minimum Standards

The American Library Association recommends that public libraries which serve communities comparable in size to Bozeman maintain collections of from 2.75 to 3.00 volumes per capita served. (29:10) However, specifically where in this range a particular library belongs depends on such factors as its degree of isolation from larger libraries and on the average level of education within the community.

Bozeman is fortunate to have the Montana State University Library located here, because its collection of periodicals, technical and reference books are much is much greater than the city could hope to provide. Last year the library had 1,381 adult town patrons. So it is obvious that the local public is aware of this free service, and that they use it frequently. The public library should then maintain a well diversified and up-to-date collection of fiction and non-fiction. The university library should continue its role of supplementing technical and reference material.

Statistics for the fiscal year ending June 30, 1966, make it apparent that the local library here has too few volumes. While the circulation per capita is the highest in Montana,

the collection in volumes per capita is far below the state average. See Table 1 for library statistics on several systems throughout the state. The high circulation rate can be traced to the fact that the local citizen has attended school an average of 12.4 years, again the highest in Montana. (2:12)

LIBRARY SYSTEM	POP. TAXED**	per capita EXP.	per capita VOLS.	per capita CIR.
*Billings	52,851	$2.73	1.6	7.0
*Butte Public	46,454	2.19	1.8	3.2
*Great Falls Federation of Libraries	81,071	2.84	1.8	5.5
Hardin & County	10,007	1.14	1.9	3.2
*Havre Public	10,740	1.89	1.9	5.5
*Missoula Public & County	44,663	1.76	1.9	4.4
*Bozeman	13,361	2.18	1.3	8.5
Gallatin County excl. Bozeman	4,457	0.60	1.5	1.4
State Totals	587,654	2.13	1.9	5.6

Table 1. Public Library Statistics. (26:2-9)
*Communities with nearby college libraries.
**1960 Census.

The available statistics and A.L.A. recommendations indicate that 2.0 volumes per capita would be the minimum this li-

brary should have. However, Miss. Hileman has stated that she would like to have twice as many volumes as she now has. This works out to a figure of 2.6 volumes per capita. Because of already overcrowded conditions, it would be impossible to house the total volumes either figure represents in the present building.

Physical Facilities

Range aisles with widths considerably under recommended standards are a derivative of the previously mentioned overcrowded conditions. For example, the widths between the adult, non-fiction stacks are only 20 inches. This is hardly enough room for two people to pass without plenty of body contact. The minimum recommended width for such aisles is 30 inches. (3:1153)

The only stairs from the basement are not wide enough either. Actual width of these stairs is only 34 inches as compared to the minimum standard of 60 inches. (3:1153) The same minimum applies to the stairs leading to the mezzanine, where the width ranges from 14½ inches to a maximum of 30 inches.

The only reading area deficient in size is in the children's library downstairs. According to Miss. Hileman, the children frequently bring their books up to the adult reading tables, because their space is so limited. The integration of these age groups in reading areas is not desirable.

It has been traditional for the library to show Saturday afternoon movies for the children. As many as 80 to 100

children often attend these movies. A separate area is needed for this function since they are now shown in the children's stack and reading area. If a child wants a particular book now during a movie, he either waits until the show is over, or the librarian finds it for him with the aid of a flashlight. There is also a need for lecture and meeting space as was included in the original design. A multi-purpose room could serve all these functions.

A small, private office for business and clerical work is recommended by the A.L.A., but does not exist in the present library. The mezzanine serves as an office, but it also houses the special collection of old books and newspapers, and a reading table. This provides excellent control of the special material, but also sacrifices the office privacy.

Illumination

Nearly every area in the library is inadequately lighted at night. During the day, natural light in addition to artificial light brings several areas up to recommended levels of illumination. See Table 2 for tabulation of these levels.

Area	Footcandles Minimum Recommended	Night Level	Day Level
Adult reading tables	70	35-50	40-80
Lending desk	70	5-35	50
Adult fiction stacks	30	3-30	4-35
Adult non-fiction	30	6-20	5-300
Adult card files	70	25	70
References	30	15	2-30
Magazine rack	30	15	25-30
Mezzanine reading table	70	150	150
Numbering counter	70	(not used)	7-130
Cataloging desk	70	35	70
Stairs to cataloging	20	1	25-100
Stairs to basement	20	1-13	3
Book repair & binding	70	25-50	25-50
Children reading tables	70	37-100	25-100
Children stacks	30	2-100	25-100

Table 2. Recommended Illumination Levels for Libraries (11: 385) and Existing Levels in the Bozeman Public Library as Measured by This Writer.

Building Code Provisions

Building codes are relatively recent measures designed to protect the public. These codes were unheard of when this library was initially constructed. Since they are not retroactive, the codes could not apply to it. If the building were built today, it would be in violation of a city ordinance and several codes.

A public library according to the Bozeman City Zoning Ordinance requires one off-street parking space for each 30 square feet of floor area. The number of parking spaces based on this criteria is 70. This number seems quite high and could probably be substantially reduced by proposing a variance to the city zoning board. However, the reduced figure would still be many more off-street spaces than are now available. The existing parking lot is difficult to maneuver a car in, and has only 2 spaces reserved only for library use.

If the existing library was subject to present building codes, it would not adhere to the following provisions: Exit doors may have no more than 100 square inches of glazing per opening (48:416); lighted exit signs are to be at every exit doorway (48:421); stairways serving an occupant load of 50 or less must be at least 36 inches wide (48:414); stairways serving an occupant load of less than 50 must be 30 inches wide as a minimum (48:414); changes in elevation of less than 12 inches along any exit serving a tributary load of 10 or more occupants, such as the riser inside the main entrance, shall be made by means of a ramp (48:409).

Architectural Character of the Building

As it was common in the era of the Carnegie and Hearst gifts for libraries, this building was probably designed at least partly as a monument to the donor. See photographs for evidence of this in the tympanum, where the name "Carnegie Library" is carved in stone.

The four Tuscan columns which flank the entrance are characteristic of eclectic architecture. This building is no

exception to the typically unimaginative and drab eclectic style.

If we hold true the philosophy that the architecture of a building should express that which occurs within the building, then this "borrowed style" does not express a library. Within the shell of the library is an ever-changing organism, which through its resources, will enrich the lives of all who use it. The power a library evokes is such that even the sight of it should stimulate one's mind.

The existing library building is aesthetically inadequate today for two reasons. First, it fails to stimulate the mind as it should. Secondly, it does not have the inviting design necessary to draw people inside of it.

Site Location

When the present library site was selected 65 years ago, it was near the nucleus of the residential community. (30) But that is not true today, and will be less so in the future, due to suburbanization.

There are many factors which will influence the selection of a new site, and these will be researched in depth later. One thing is definite at this stage though, a downtown location is not near enough to the present residential neighborhoods or the schools. Also, increasing congestion of the city makes accessibility a problem.

Consensus of Opinion

The Library Board of Trustees considered the feasibility of a new public library just a couple of years ago. According to the City Manager, Mr. Oscar Cutting, who is also an ex officio member of the board, these men decided that a new library was not warranted at the time. The existing building they declared was of firm structure, and if necessary could be added onto. (39)

During my conversation with Mr. Cutting, he also mentioned that before proposing such a project to the people, politicians must know the public sentiment toward any tax increases. (39) I wonder if the board really did know?

Future Library Service to Bozeman

Regardless of what path the local decision-makers have or have not plotted for library service in Bozeman, I have answered the questions in my own mind on the need and practicality for better local library service. It can best be achieved by the establishment of a county federation of libraries, with a central library in Bozeman. Also, small branches will be necessary in other communities throughout the county.

The scope of my thesis will not include these branch libraries, but they must be considered in the total design concept.



1. Existing library and environment.



2. Existing library at night.



3. Off-street parking facilities.



4. Main entrance.



5. Children's entrance.

M. S. U. BOOKSTORE, INC.



6. Display area.



7. Adult reading and stack area.



8. Lending desk.



9. Children coat storage and exit.



10. Stairs to mezzanine.

M. S. U. BOOKSTORE, INC.
M. S. U. BOOKSTORE, INC.



11. Book numbering and pocket pasting work area.



12. Old newspapers on mezzanine.



13. Saturday afternoon movies.



14. Newspaper and miscellaneous storage room in basement.

M. S. U. BOOKSTORE, INC.

LOCAL CONDITIONS

Introduction

"At first you can't believe it when you cross the Bozeman Pass and see below you, the Gallatin Valley, for no painting can ever show it as it is: the frost blues and silken yellows of the foothills, the reds watered down by deceiving distance, the purples that have distant church music in them, the greens you can smell for sweet mown grass ... all worked into one breathlessness and swept across the horizon. At dawn there is a golden rim around it. At sundown, nothing contains its endlessness save the rims of the Madison mountains, where the sun balances like a juggler's plate of gold." (28:2)

Probably anyone who has experienced the Gallatin Valley has reacted much in this way to the magnificence of it. Even the Indians that inhabited Montana before the white man arrived, called it the "Valley of Flowers" due to the rainbow of wild flowers which grew along the foothills and on the fertile valley floor. (7:9)

This is only part of Gallatin County. The remainder of it is a panhandle south of Gallatin Canyon. In the center, and running the length of this strip of land is a narrow, winding highway, which parallels a spirited, equally winding mountain river. Flanking these ribbons of asphalt and water on either side are mountain ranges. When in this part of Gallatin County, one feels the tremendous power of a river, and might easily be overwhelmed by the imposing mountains that channel his mobility.

Geography

Gallatin County is located in Southwestern Montana. It has a total area of 2,540 square miles, of which only 23 square miles are water. (13:42) The land covered by this sprawling county exceeds the areas of either Rhode Island or Delaware. (8:421)

Bozeman, the only urban place in Gallatin County, is centrally located within the county at 45° 40' latitude and 111° 03' longitude. (13:21) The area of the city is approximately 7.5 square miles. Its altitude is 4,795 feet above sea level. (31:146)

Topography

The southernmost boundary of Gallatin County is the Continental Divide. U.S. Route 191 crosses the Divide at Targhee Pass (elevation 7,078 feet) and continues east into West Yellowstone. From West Yellowstone it heads north for 92 miles toward Bozeman, paralleling the Gallatin River most of the way. (31:146)

Some 50 miles north of West Yellowstone, the river and U.S. 191 pass by Gallatin Gateway. Five miles further north, they both pass by Bozeman Hot Springs, where the highway turns eastward. Seven miles from Bozeman Hot Springs, U.S. 191 joins U.S. 10 at Bozeman. When Interstate 90 is completed, it will be the primary east-west highway between Billings (140 east of Bozeman) and Butte (95 miles west of Bozeman). I-90 now connects Bozeman with three communities

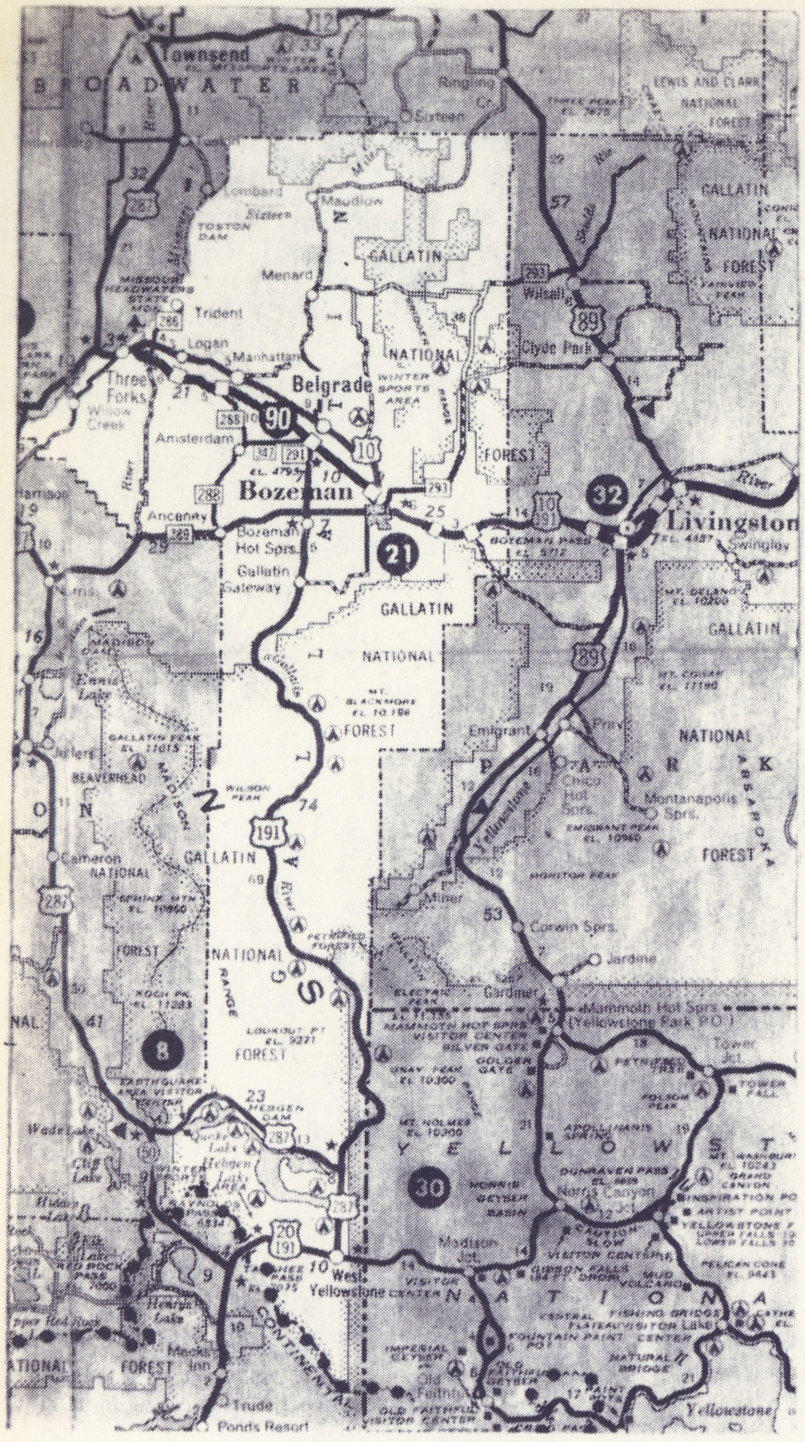

Figure 1. Map of Gallatin County. (32)

northwest of it, Belgrade is 10 miles away, Manhattan is 20, and Three Forks is 34. At Manhattan, I-90 parallels U.S. 10 and the Gallatin River. North of Three Forks the Gallatin joins the Madison and Jefferson Rivers to form the Missouri River. The Jefferson and Missouri Rivers are the northwest boundary of Gallatin County. (32)

U.S. 10 to the east of Bozeman will be replaced by I-90 when that highway is completed in the mid-1970's. Bozeman presently has one interchange north of the city for access to I-90, and another is planned east of the city. The freeway will connect Bozeman to Livingston via Bozeman Pass (elevation 6,002 feet), as U.S. 10 now does. (32)

History

The Gallatin, Madison, and Missouri Rivers are located in what is now Gallatin County, and had a profound influence on the history of this area. The great valleys formed by these rivers provided the Blackfeet, Crow, Bannack, Nez Perce, Flathead, and Snake Indians an easy access east to the hunting grounds of the Yellowstone, and west to the trapping grounds of the Snake River plains. (7:4)

The fact that no tribe ever made the Gallatin Valley its permanent home can be attributed to the heavy migration of Indians through this area, and the deep winter snows. The Indians knew the valley as the "common hunting ground." (18:1)

In July of 1805, explorers Lewis and Clark arrived at the forks where the Gallatin, Madison, and Jefferson Rivers

meet to form the Missouri. The explorers then rested their expedition at the forks, and named the rivers before departing to follow the Jefferson westward. The Jefferson River was named in honor of Thomas Jefferson, who was then President of the United States. The Madison was named for James Madison, then Secretary of State. The Gallatin River was named for Albert Gallatin, who was also in Jefferson's cabinet, as Secretary of the Treasury. The county name was later derived from the Gallatin River. (7:1)

A brief chronology of events and dates important to Gallatin County and local library service follows:

DATE	EVENT
1803	Louisiana Purchase included this area. (18:3)
1806	William Clark and his party camped three miles east of Bozeman. (18:2)
1863	First house built in Gallatin Valley. (7:19)
1864	Montana Territory established May 26th. Bozeman located and named for founder John Bozeman. (18:3)
1865	Gallatin County organized. (7:6) School taught in Gallatin County for first time, in the back room of a Bozeman log store. (7:28)
1867	John Bozeman killed by Blackfeet Indians about 10 miles east of Livingston. (7:13) Fort Ellis established . (7:21) Bozeman chosen as County Seat in a Christmas Day election. (7:7)
1869	First newspaper in territory. (7:34) First county school building. (7:29)
1872	The Young Men's Library Association organized the first library in Gallatin County. It was located above the Roecher & Alward store. (45:7)
1874	Bozeman incorporated. (7:53)
1883	Bozeman organized as a city. (7:53) Belgrade established. (7:54)

DATE	EVENT
1884	Manhattan established. (7:55)
1885	The Young Men's Christian Association met to found a library and reading room. The Y.M.C.A. donated $32.75 and trustees of the now defunct Y. M.L.A. transferred $84.90 to the new library. This was the beginning of the Bozeman Free Public Library movement. (45:7)
1886	The library located in the Monroe Building at Main and Tracy. It cost the library 50 cents to move its property. The library was maintained by voluntary subscriptions. During the year it spent $400 on books and current literature. An average of 75 volumes were always checked-out. (45:7)
1887	Circulation was still good, but operating revenue declined due to fewer subscriptions sold. Only $120 was spent on books. (45:7)
1888	Income declined so much, that the books were moved to Judge Luce's office in the Mendenhall Building, to reduce overhead. (45:7)
1889	The Mendenhall Building burned, as did many books. The assets of the library then totaled $3.05 and 250 books. The remaining books were placed in the Cooper Building as the space was offered rent free. After shelves were built from donated lumber, the library re-opened. Subscriptions were again solicited. (45:7)
1890	At a moving expense of $1.50, the books were transferred again — to quarters in the newly constructed city hall. (45:7)
1891	The people of Bozeman approved a tax of one-half mil to help support the library. The city assumed control of the library. (45:7)
1903	The city accepted a Carnegie Gift of $15,000 for the construction of a new library building. The people approved another tax increase of one-half mil to maintain the service. (45:7)
1904	The new building was completed at the cost of $14,250. (45:7)
1907	West Yellowstone first settled. (7:57)
1913	Present town of Three Forks established. (7:53-54)

DATE	TOTAL VOLUMES	TOTAL CIRCULATION
1893	2,373	(not available)
1895	2,877	(not available)
1897	3,824	(not available)
1899	4,992	(not available)
1901	6,179	(not available)
1903	7,155	*30,000
1905-1949	(not available)	(not available)
1951	18,801	36,762
1953	*12,000	47,117
1955	13,641	63,461
1957	14,283	75,083
1959	14,589	76,680
1961	14,294	100,879
1963	14,823	115,937
1965	16,441	115,710
1967	17,220	113,314

Table 3. Total Volumes and Circulation by Year at the Bozeman Public Library, For Odd Years 1893-1903 (45:7) and 1951-1967 (22). Asterisk (*) designates an estimate.

Population Characteristics

Before any community facility such as a county library service is expanded, the characteristics of the people the facility serves must be determined. Past and present data found in the analysis will be the basis for future projections. This evaluation is necessary to logically determine what public needs the Gallatin County Library is to serve.

Location of People

Not only is Bozeman near the geographic center of the county, but the county population is also gathered in or closely about Bozeman.

According to the 1960 U.S. Census, more than half of the county population lived in Bozeman, i.e., was urban. This was a ratio of rural to urban populations, and the per cent of urbanization in Gallatin County exceeded the urban average for the state. A much higher percentage of the county population are now urban than in 1900, when slightly more than one of every three county residents lived in Bozeman. Urban population as a per cent of the total population is shown on Figure 2 for Montana and Gallatin County, for the 1900-1960 period.

There is such a concentration of people living in the Bozeman area, that 74.9% of the county population is within a 15 mile radius of the city. (21:7) When the radius is increased to 25 miles, 84.9% of the county residents are included. (21:7) Figure 3 indicates these radii.

To facilitate the recording of census statistics, the U.S. Bureau of Census has divided rural area into Census County Divisions (CCD's). CCD boundaries are usually permanent features, such as highways, mountains, rivers, or power lines. (21:4) The CCD's for Gallatin County are indicated on Figure 3. The corresponding populations are given in Table 4.

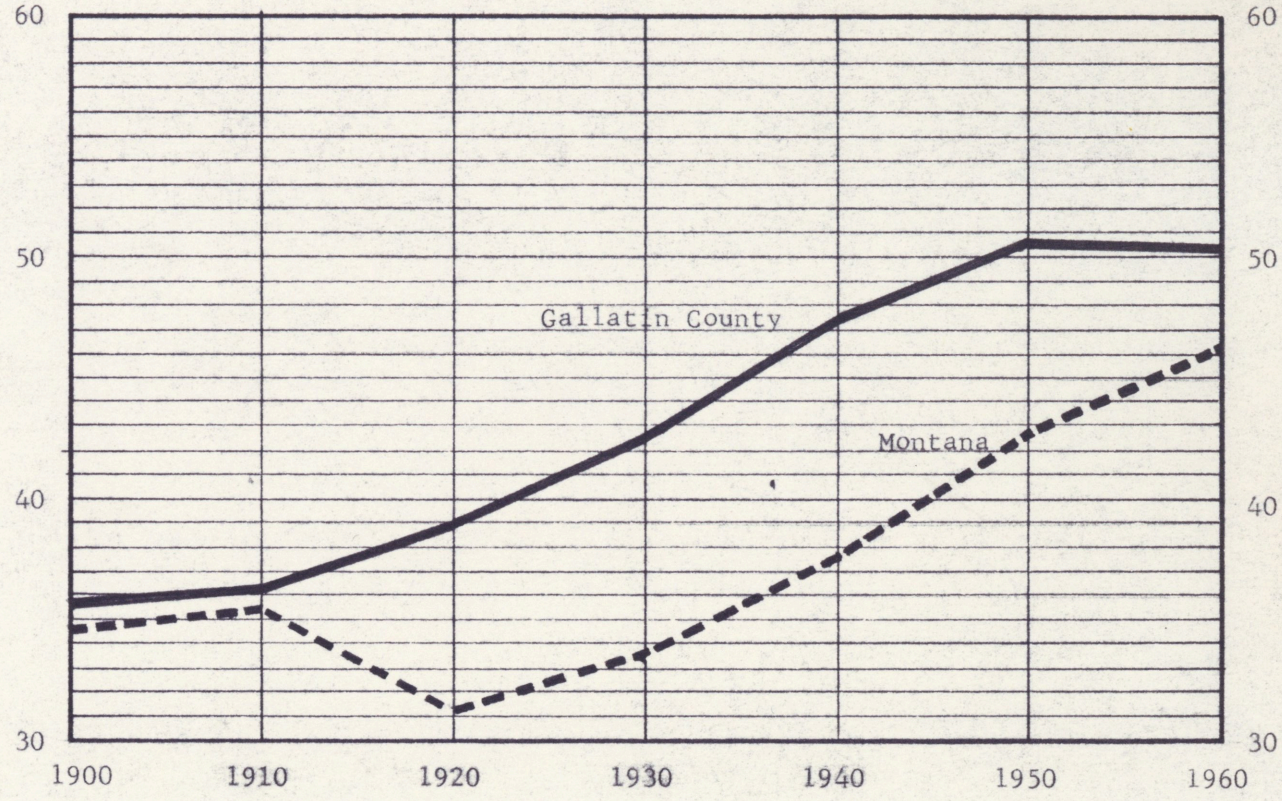

Figure 2. Urban Population as a Per Cent of the Total Population for Montana and Gallatin County. (21:156)

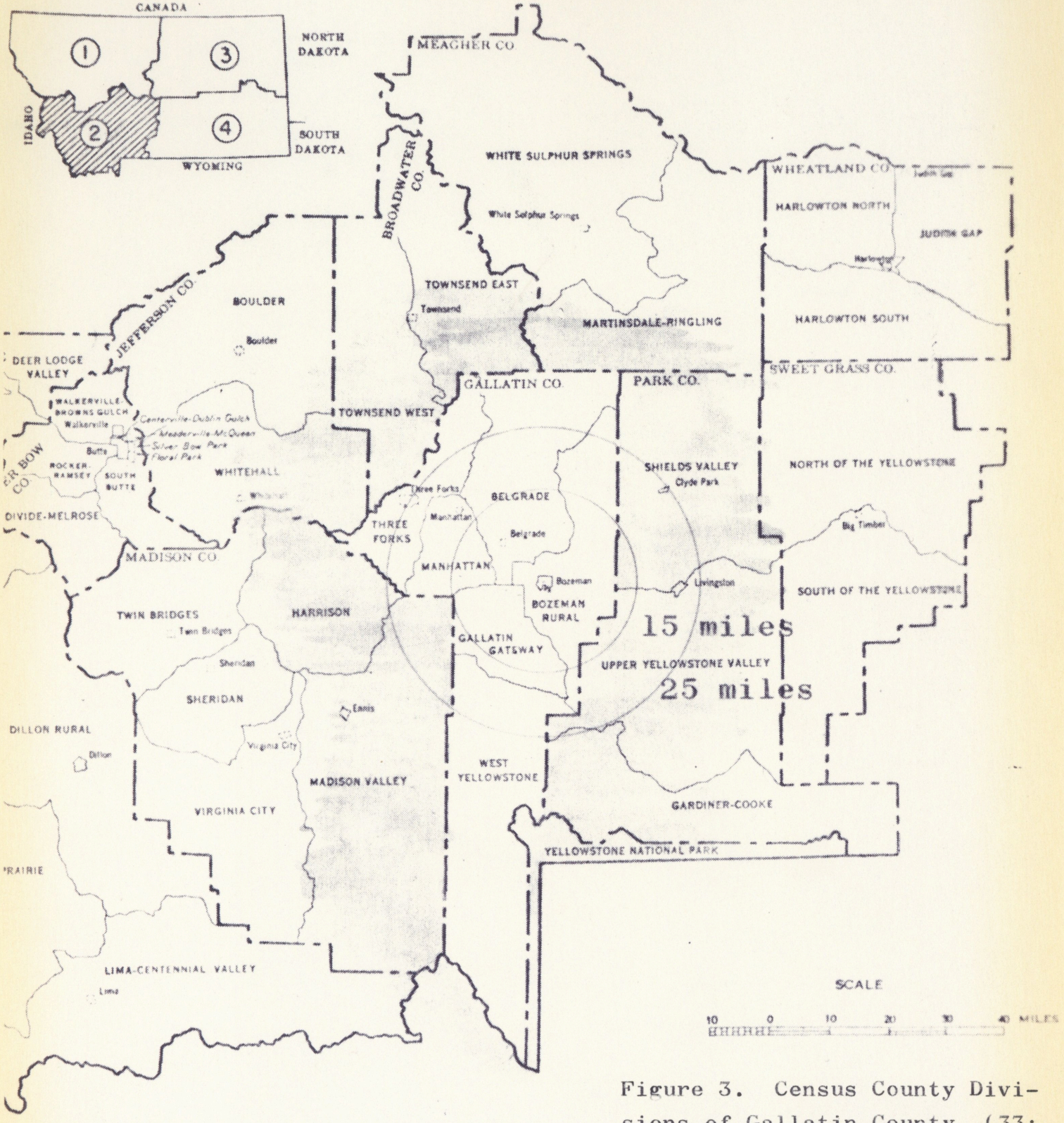

Figure 3. Census County Divisions of Gallatin County. (33: 28-5)

STATISTICAL AREA	1960 POPULATION
Belgrade Division	2,446
Belgrade Town	1,057
Bozeman Division	13,361
Bozeman Rural Division	4,087
Gallatin Gateway Division	1,019
Manhattan Division	2,575
Manhattan Town	889
Three Forks Division	1,958
Three Forks Town	1,161
West Yellowstone Division	599
Gallatin County TOTAL	26,045

Table 4. 1960 Population of Gallatin County by Census County Divisions. (33)

It is obvious from the preceding information, that the county library should be located in or near Bozeman, since patron accessibility is very important.

Number of People

As Table 5 indicates, Gallatin County is growing at a population rate faster than the state. Since during the 1950-1960 period, there was a permanent resident out-migration of 409, an increase in Montana State University enrollment was necessary to offset this. The gain of 1,057 additional students gave the county a net gain of 648 permanent residents. (21:160)

YEAR	GALLATIN COUNTY	DECADE % CHANGE	MONTANA	DECADE % CHANGE
1900	9,553	+52.9	243,329	+70.3
1910	14,079	+47.7	376,053	+54.5
1920	15,864	+12.7	548,889	+46.0
1930	16,124	+1.6	537,606	-2.1
1940	18,269	+13.3	559,456	+4.1
1950	21,902	+19.9	591,024	+5.6
1960	26,045	+18.9	674,767	+14.2
1970	*34,506	*+32.0		
1975	*39,724			
1980	*44,487	*+26.0		
1985	*49,359			

Table 5. Comparative Population Growths of Montana and Gallatin County. (21:156) Asterisk (*) indicates a projection. (36)

	GRADES							
SCHOOLS	1st	2nd	3rd	4th	5th	6th	7th	8th
Rural	63	65	56	46	47	40	36	30
Urban	527	506	486	462	594	565	554	520

Table 6. 1967 Gallatin County School Enrollment. (25)

Contributing to the rising population is a high birth to death ratio. During the same 1950-1960 time period, the county registered 5,887 births, as compared to only 1,966 deaths. (21:160) The county ratio is 2.97 : 1.0, while the state ratio is 2.76 : 1.0.

Since community growth is primarily dependent on employment opportunities, there is no reason to doubt the accuracy of the population projections for Gallatin County shown in Table 5. This is because university enrollment should continue to increase, cause in-migration, and thus create new jobs to serve the additional students.

Economic

Regardless of how promising population trends may be for a community, that community must have a sound economic base to insure its stability and provide a foundation for it to grow on. Gallatin County has such a foundation, due to its diversification in non-cyclicle fields.

Industry

Because Gallatin Valley has some of the most fertile soil in the state, quite naturally agriculture is a major industry. Total cash receipts from farm marketings, excluding Federal subsidies, were $11.6 million for 1959. (21:44) The two principal commodities marketed in 1959 were cattle and wheat. This industry will provide a growing income for the county, but is subject to swift and violent fluctuations. They can be caused by bad weather, or weakness in wholesale farm prices. (21:48)

Gallatin County mills produced only about 1.4% of the state lumber production in 1956. Despite the large national forests in the county, forest industries are but a small part

of the county economy. Future expansion possibilities for the industry are not likely to be substantial. (14:224)

The transportation industry is expanding rapidly in the county, particularly the airline sector. For several years Northwest Orient Airlines has provided Gallatin Field with a major east-west trunkline. Only moderate growth was realized until last year though. The addition of Frontier Airlines last fall boosted passenger traffic considerably. The airlines estimate that 30,000 passengers will be served in 1972.

DATE	TOTAL PASSENGERS	DATE	TOTAL PASSENGERS
1959	5,750	1964	6,060
1960	5,420	1965	9,848
1961	2,560	1966	10,629
1962	2,270	1967	17,687
1963	4,850	1968 (est.)	21,500

Table 7. Number of Inbound plus Outbound Passengers at Gallatin Field, 1959-1968. (27:1)

A bond issue to lengthen the runways at Gallatin Field was approved by the voters in January, 1968. When the runways are lengthened, they will be long enough to land commercial jet aircraft. This should open up a vast wealth of tourist trade, and rapid travel from an otherwise remote area.

However, remoteness has proved to be an asset to Bozeman in one respect. Livingston (population 8,229) and Townsend (population 1,528) are the only communities with populations of more than 1,500 in a 50 mile radius of Bozeman. This has helped make Bozeman a retail trade center for an area of 24,465 square miles and 65,000 people. (2)

The money brought into Bozeman by the university should prove to be a stabilizing influence on the economies of Bozeman and Gallatin County.

	TOTAL	RURAL	RURAL-FARM	URBAN
Montana	$5,403	$4,832	$4,289	$5,918
Gallatin County	5,360	4,853	4,023	5,887

Table 8. 1959 Median Family Income for Montana and Gallatin County. (21:61)

The median family income for Gallatin County compares favorably with the state average as Table 8 indicates. The influence of agriculture on the county economy is evident from the fact that the rural median family income in the county exceeds the state average for rural families.

Social

The average adult over 25 years old in Gallatin County has completed 12.4 school years, the highest in Montana. The

average for the entire state is 11.6 years of school. (21: 28-84) The median age in Gallatin County is 24.6 years, as compared to the Montana median of 27.6 years. (21:21)

Cultural Facilities

University theatre.
Summer theatre.
Public and university libraries.
Two newspapers.
Museum.
Summer band shell.

Recreational

Six city parks in Bozeman.
Two golf courses.
Public swimming pool.
Hunting, fishing, and hiking facilities.
East entrance to Yellowstone National Park.
Gallatin National Forest.
Headwaters of the Missouri River.
Skiing facilities.
Ice skating rinks.
Several picnic areas and playgrounds.
Eight movie theatres.
Four radio stations.
Five cable television channels, and one direct.

Month	Temperature (°F)				Precipitation Total in Inches		(Days) Growing Season
	Daily Means		Extremes				
	Max.	Min.	Highest	Lowest	Mean	Snowfall	
Jan.	29.4	10.2	57	-36	0.92	11.5	
Feb.	34.1	14.4	63	-43	0.77	10.9	
March	40.9	20.2	70	-27	1.43	15.6	
April	54.4	31.0	80	-10	1.61	5.2	
May	63.4	38.8	89	16	2.36	1.3	
June	70.0	44.5	92	26	2.91	0.4	
July	81.5	51.4	100	32	1.17	trace	
Aug.	79.8	49.4	96	31	1.26	0	
Sept.	68.9	41.2	95	12	1.66	1.0	
Oct.	57.4	33.1	80	-10	1.51	3.2	
Nov.	42.0	22.6	67	-16	1.11	9.4	
Dec.	33.9	14.6	62	-35	0.93	11.7	
Year	54.6	31.0	100	-43	17.64	70.2	115

Table 9. Gallatin County Means and Extremes for Period 1925-1954. (13:21)

SITE CONDITIONS



M. S. ROSENTHAL BOOKSTORE, INC.

Location

The site selected for the proposed county library is located in downtown Bozeman. It is bounded on three sides by West Babcock Street, South Willson Avenue, and Main Street. The site is now occupied by a music store, funeral home, an upstairs hotel, and miscellaneous shops. Adjacent to the west side of the site is a private parking lot and motel.

Orientation

Library specialists Galvin and Van Buren recommend that library entrances face north or east, in that order of preference. (5:49) This permits maximum fenestration on the entrance side with minimum direct sun glare to the inside. However, for severe climates such as in Bozeman, the east orientation is most desirable for two reasons. First, the probability of moisture or ice accumulation on the steps and sidewalks of this side is less, since the sun shines directly here and not on the north. The second advantage is aesthetic. The play of sunlight on the east side will provide a more interesting entrance than the always shaded north. The shape and location of this site lend themselves well to an east orientation.

Topography

The land slopes gently upward from the north to the south, and is nearly level in the east-west direction. Due to its downtown location, there is little vegetation or other natural features on the site, other than a lone deciduous tree on the west side of the existing building.

Soil Analysis

Since the Oxford Hotel building has occupied most of this site for more than 70 years (30), there are no known records of the soil conditions beneath it. The adjacent motel and service station were built on fill, because until recently this area was quite low. However, at the proposed site it is more important to know what conditions exist below the depth of the adjacent fill, for the Oxford has a basement.

The nearest and most recent soil investigation was made two blocks north of the site, for the Bozeman Deaconess Hospital in 1967. Several drill hole borings were made for the hospital, but only the results of the drill hole nearest the proposed library site will be considered as the condition at the library site. The field and laboratory results for that drill hole are as follows: silty clay 4.0 to 5.5 feet below the surface; sandy gravel 8.0 to 24.2 feet below the surface; and the groundwater table 11 feet below the surface. (24:3,4)

The testing laboratory also recommended that footings be at

least 18 inches into the gravel stratum, and that the soil bearing capacity used for this depth should be 8,000 pounds per square foot. If however, the footing penetrates the gravel stratum an additional 18 inches, the bearing capacity should then be 10,000 pounds per square foot. (24:3)

Utilities

The downtown location of this site means that availability of utilities will be no problem. All utilities service the downtown area and are convenient to the site. The power lines which cross above the Oxford Hotel and bisect the site would be buried, as they are very unsightly.

Adjacent Environment

Buildings

The site is located on the fringe of the Bozeman Central Business District (CBD) and is surrounded by a variety of environments. Only one block away, to the east along Main Street, is the focus of the CBD. West along Main and Babcock are several schools and churches. On Main in this direction are the county offices and courthouse, and generally small business establishments. North on Willson from Main Street is a car dealership. The hospital and primarily lower middle class housing are located further north on Willson. In a direction south from the site are more churches, a few commercial buildings, and lower to middle class residences. Years ago South Willson was the grand

street of Bozeman. It still has many of the magnificent homes of that era along it and is lined by mature deciduous trees.

Views

Views to the south include the scenic South Willson Avenue interrupted only by the congested municipal parking lot. To the west along Babcock, large trees and the landscaped school yard can be seen beyond the adjacent private parking lot. If one looks north through the narrow space framed by the Baxter Hotel and stores east of it, he can catch a glimpse of the distant Bridger Mountains. Foothills of the Bridgers are also visible far beyond Main Street to the east.

Zoning Requirements

The site is now zoned by the city as CB (Central Business). This zone precludes libraries as permitted uses. (43) However, since the present library is in a CB zone, the City-County Board of Zoning Appeals would probably grant a variance to allow the proposed library to be built in the same zone. The only zoning restrictions would be a setback of 15 feet along Babcock, and one off-street parking space for each 30 square feet of floor area. (43)

The latter restriction seemed to be in error, so I consulted Mr. Don Barrick, the City Building Inspector, and Mr. Harold Korslund, President of the City-County Planning Board, to determine its validity. They both agreed that it

was an unreasonable requirement for a library. When the problem was presented to Bozeman City Manager, Oscar Cutting, he stated that a change in that requirement would be proposed at the next meeting of the Planning Board. In the meantime, to realistically determine what the off-street parking requirement should be, I wrote to the Building Inspectors of Billings, Great Falls, and Missoula. Their replies indicated that the requirements in those cities for conditions similar to the proposed county library were one off-street parking space per 300 (34), 120 (37), and 250 (35) square feet of floor area respectively. A conservative estimate for what the local code should be is then one space per 250 square feet of floor area.

According to code, the off-street parking spaces may be located up to 1,000 feet from the activity to be served. (43) The free municipal parking lot south of the site with 55 stalls, and the metered municipal lot at the corner of West Mendenhall and North Willson with 40 stalls, are well within 1,000 feet of the site. They provide spaces for 23,750 square feet of floor area. The use of a municipal parking lot is consistent with A.L.A. recommendations. (29:4)

Since the metered lot is used so infrequently now that its revenue does not even pay the interest on the loan,(41) it is my recommendation that the lot south of the site also be metered, for that lot is usually full. This should help balance the use of the two lots, and thereby provide parking spaces nearer the site. Three improvements could be made to the Babcock lot to increase its efficiency. The steepness of the approaches could be reduced by cutting the lot to a level even with the sidewalk between it and Willson. Also, this would facilitate entrance changes to speed

traffic flow along Babcock. The lot is badly in need of paving, too.

Traffic Patterns

The most recent comprehensive study of Bozeman vehicular traffic was done in 1957. The survey indicated that the busiest corner in the city was at Babcock and Willson. The volume of traffic at this corner during the peak hours 4:30 -5:30 p.m., exceeded even that of Main Street by 20 vehicles. See Figure 6 for traffic flow diagram. Of course, the traffic throughout the city has increased considerably since 1957, but the ratios of traffic at one corner to another have probably remained nearly constant.

If the city heeds the recommendations of the planners it has hired, then by 1985 Babcock will assume even more importance as a primary arterial street. Both Babcock and Mendenhall will be three-lanes of one-way traffic that bypasses the CBD. It is also proposed that Willson south of Main Street serve as a community arterial, and between Babcock and Mendenhall function as a one-way cross street. (17: 30) See Figures 7 through 10 for proposed street system.

Pedestrian traffic is not extremely heavy at the site, but is constant well into the evening. This is due to its location near two theatres. The site is also well located with respect to student traffic, as it is between most of the schools and the business center of Bozeman.

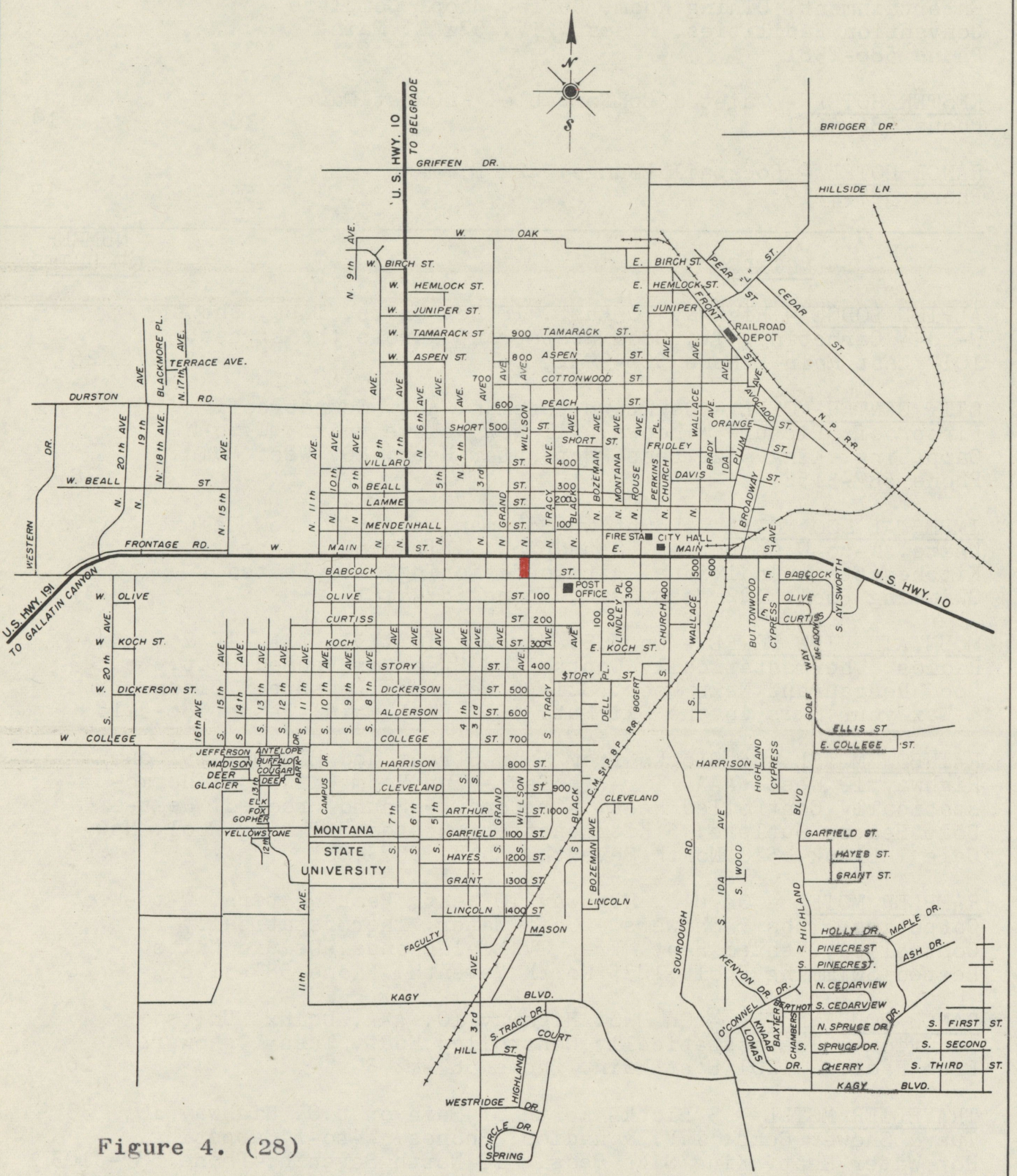
MAP OF
BOZEMAN
MONTANA
N
S
U.S. HWY. 10 TO BELGRADE
GRIFFEN DR.
BRIDGER DR.
HILLSIDE LN
W. OAK
E. BIRCH ST.
E. HEMLOCK ST.
E. JUNIPER
W. BIRCH ST.
W. HEMLOCK ST.
W. JUNIPER ST.
W. TAMARACK ST
W. ASPEN ST.
900 TAMARACK ST.
800 ASPEN ST.
700 COTTONWOOD ST.
600 PEACH ST.
500 SHORT ST.
400 SHORT ST.
300 BEALL ST.
200 LAMME ST.
100 MENDENHALL ST.
MAIN ST.
E. MAIN ST.
FIRE STA
CITY HALL
POST OFFICE
BABCOCK ST.
OLIVE ST. 100
CURTISS ST. 200
KOCH ST. 300
STORY ST. 400
DICKERSON ST. 500
ALDERSON ST. 600
COLLEGE ST. 700
HARRISON 800 ST.
CLEVELAND ST. 900
ARTHUR ST. 1000
GARFIELD 1100 ST.
HAYES 1200 ST.
GRANT 1300 ST.
LINCOLN 1400 ST.
MASON
KAGY BLVD.
FACULTY
MONTANA STATE UNIVERSITY
RAILROAD DEPOT
N. P. RR.
C.M.St.P.&P. RR.
U.S. HWY 191 TO GALLATIN CANYON
U.S. HWY. 10
FRONTAGE RD.
DURSTON RD.
TERRACE AVE.
W. BEALL ST.
WESTERN DR.
BLACKMORE PL.
N. 17th AVE.
N. 15th AVE.
N. 11th AVE.
20th AVE
19th AVE
18th AVE
16th AVE
15th AVE
14th AVE
13th AVE
12th AVE
11th AVE
10th AVE
9th AVE
8th AVE
7th AVE
6th AVE
5th AVE
4th AVE
3rd AVE
2nd AVE
N. 9th AVE
W. 20th AVE
W. KOCH ST.
W. DICKERSON ST.
W. COLLEGE
S. 20th AVE
S. 15th AVE
S. 14th AVE
S. 13th AVE
S. 12th AVE
S. 11th AVE
S. 10th AVE
S. 9th AVE
S. 8th AVE
S. 7th AVE
S. 6th AVE
S. 5th AVE
S. 4th AVE
S. 3rd AVE
S. 2nd AVE
S. 11th AVE
S. 13th AVE
JEFFERSON
MADISON
DEER
GLACIER
ANTELOPE
BUFFALO
COUGAR
DEER
ELK
FOX
GOPHER
YELLOWSTONE
PARK
CAMPUS DR.
BLACK AVE
BOZEMAN
WILLSON
GRAND
TRACY
CHURCH
WALLACE
LINDLEY PL.
DELL
BOGERT
CLEVELAND
LINCOLN
S. WILLSON AVE
S. GRAND AVE
S. TRACY
S. CHURCH
S. WALLACE
S. BLACK AVE
S. BOZEMAN
S. 3rd
S. TRACY DR
COURT
HILL ST.
WESTRIDGE
HIGHLAND DR.
CIRCLE DR.
SPRING
SOURDOUGH RD.
S. IDA AVE
S. WOOD
S. HIGHLAND
KENYON DR.
O'CONNELL
BERTHOT
BAXTER
KNARR
LOMAS
CHAMBERS
DR.
HOLLY DR.
MAPLE DR.
ASH DR.
N. PINECREST
S. PINECREST
N. CEDARVIEW
S. CEDARVIEW
N. SPRUCE DR.
S. SPRUCE DR.
CHERRY DR.
KAGY BLVD.
S. FIRST ST.
S. SECOND
S. THIRD ST.
HARRISON
HIGHLAND
CYPRESS
BLVD
GOLF
ELLIS ST
E. COLLEGE ST.
GARFIELD ST.
HAYES ST.
GRANT ST.
BUTTONWOOD
E. CYPRESS
E. BABCOCK
E. OLIVE
E. CURTISS
S. AYLSWORTH
McADOW WAY
PEAR
"L" ST.
CEDAR ST.
FRONT ST.
AVOCADO ST.
ORANGE ST.
PLUM
IDA
BRADY
WALLACE AVE
FRIDLEY PL.
DAVIS
PERKINS
HOUSE
MONTANA
BROADWAY ST.

Figure 4. (28)



Figure 5.

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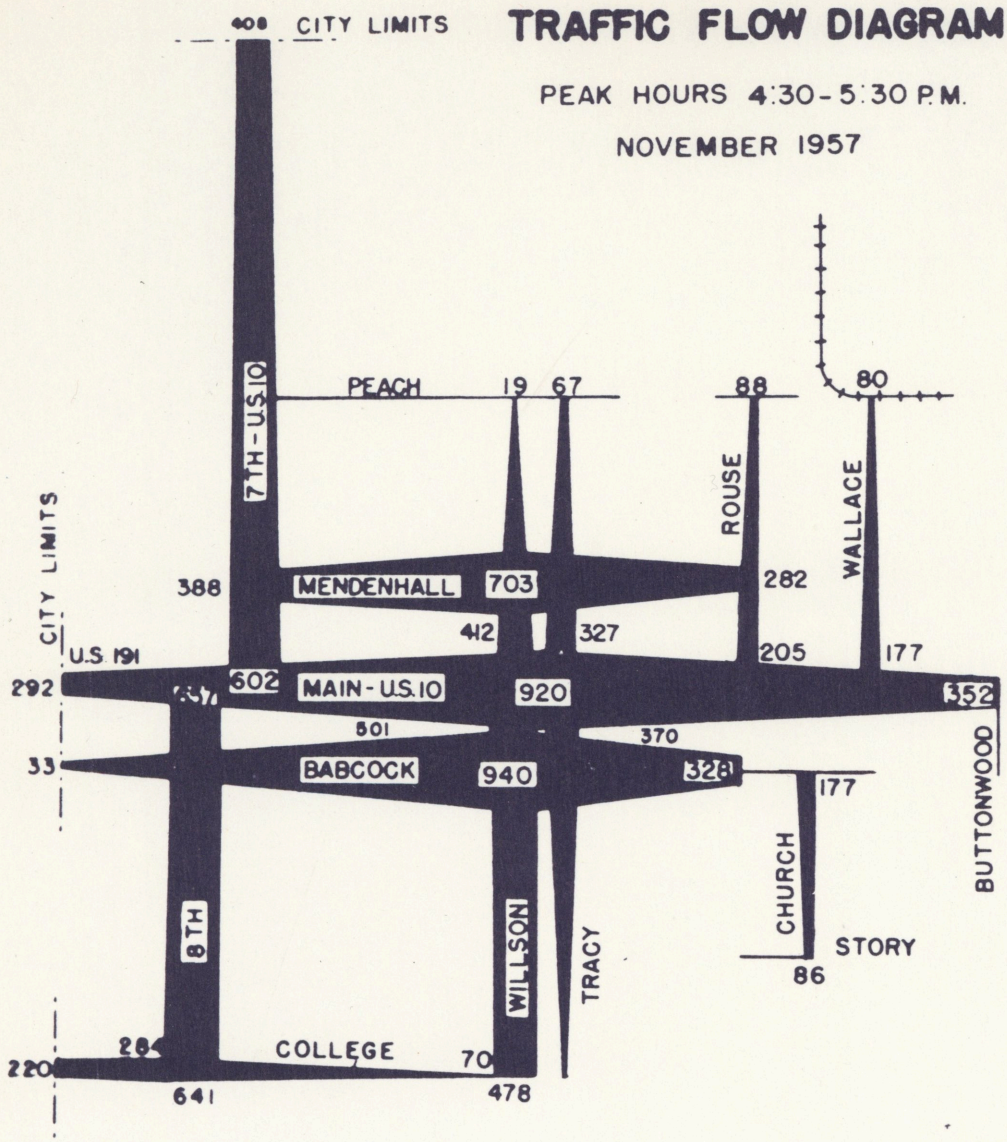


Figure 6. (18:82)

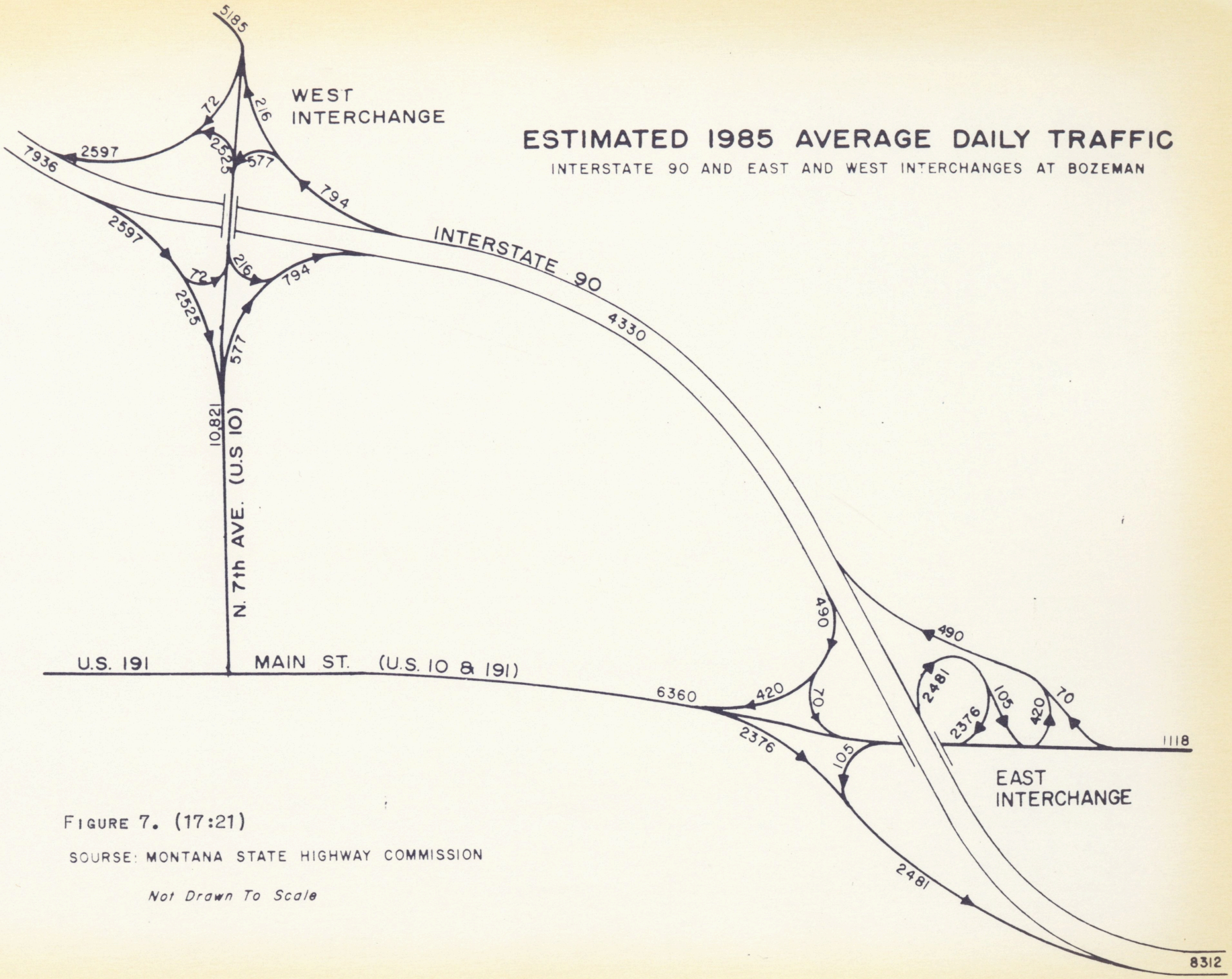


FIGURE 7. (17:21)

SOURSE: MONTANA STATE HIGHWAY COMMISSION

Not Drawn To Scale

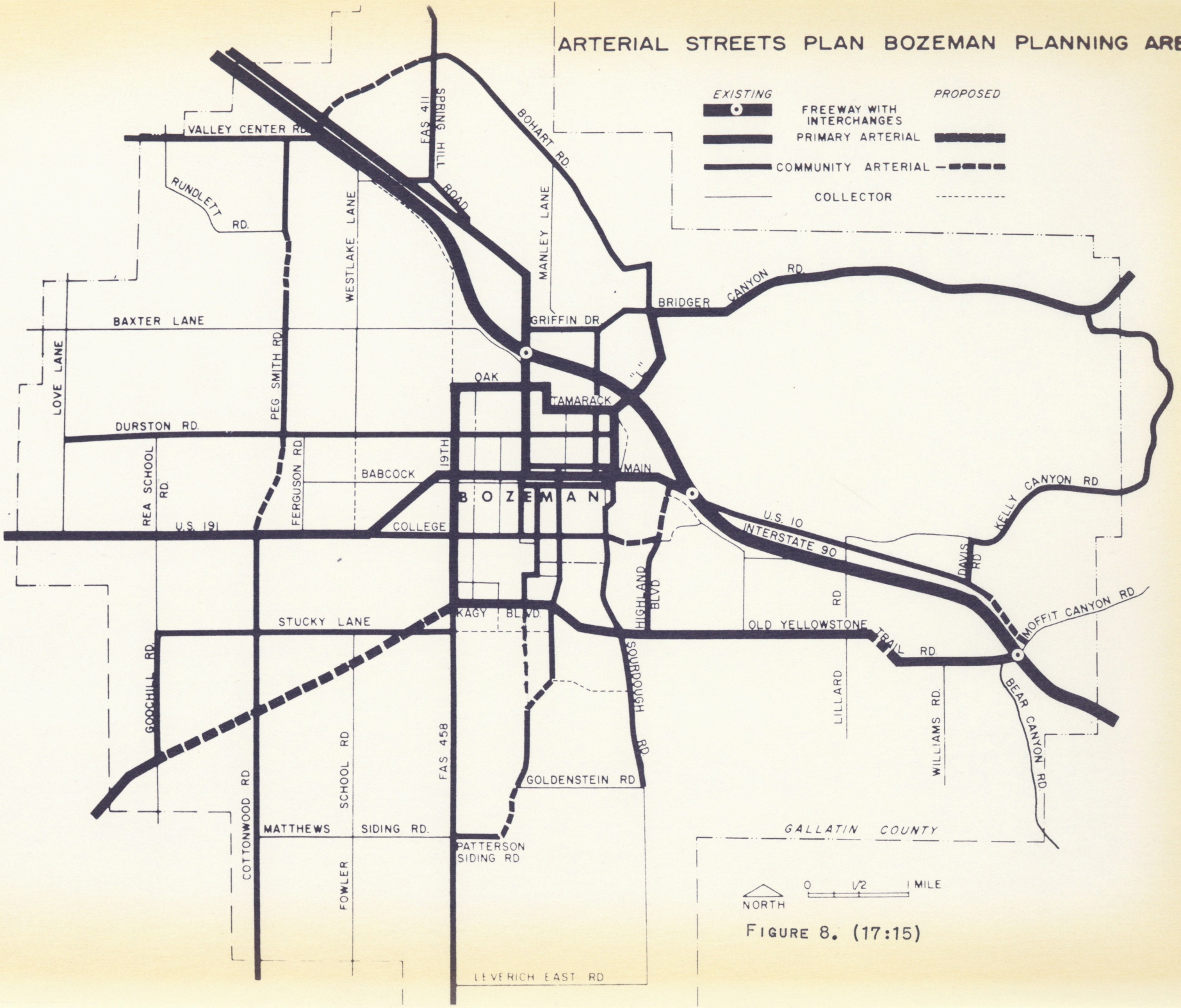


FIGURE 8. (17:15)

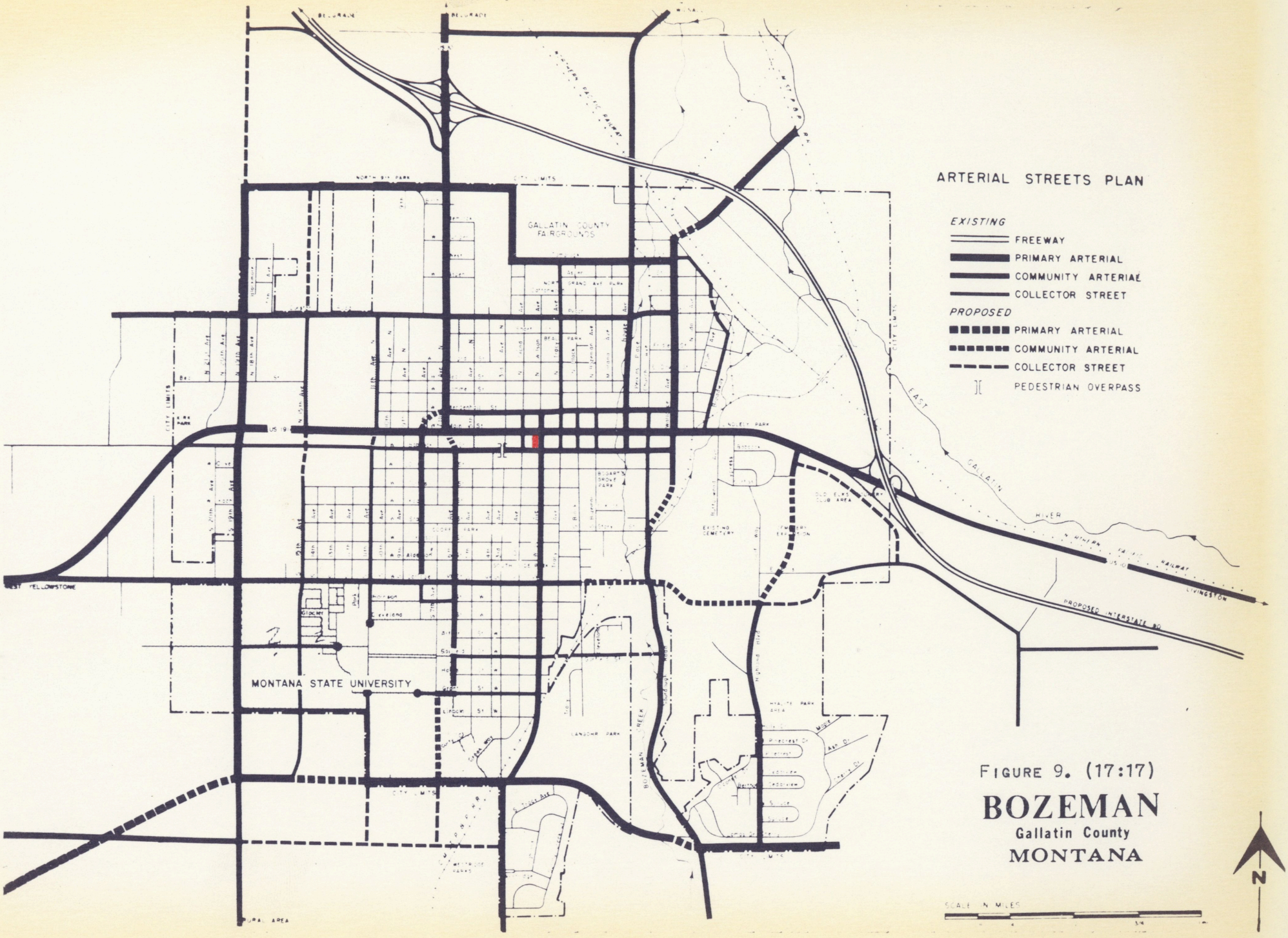


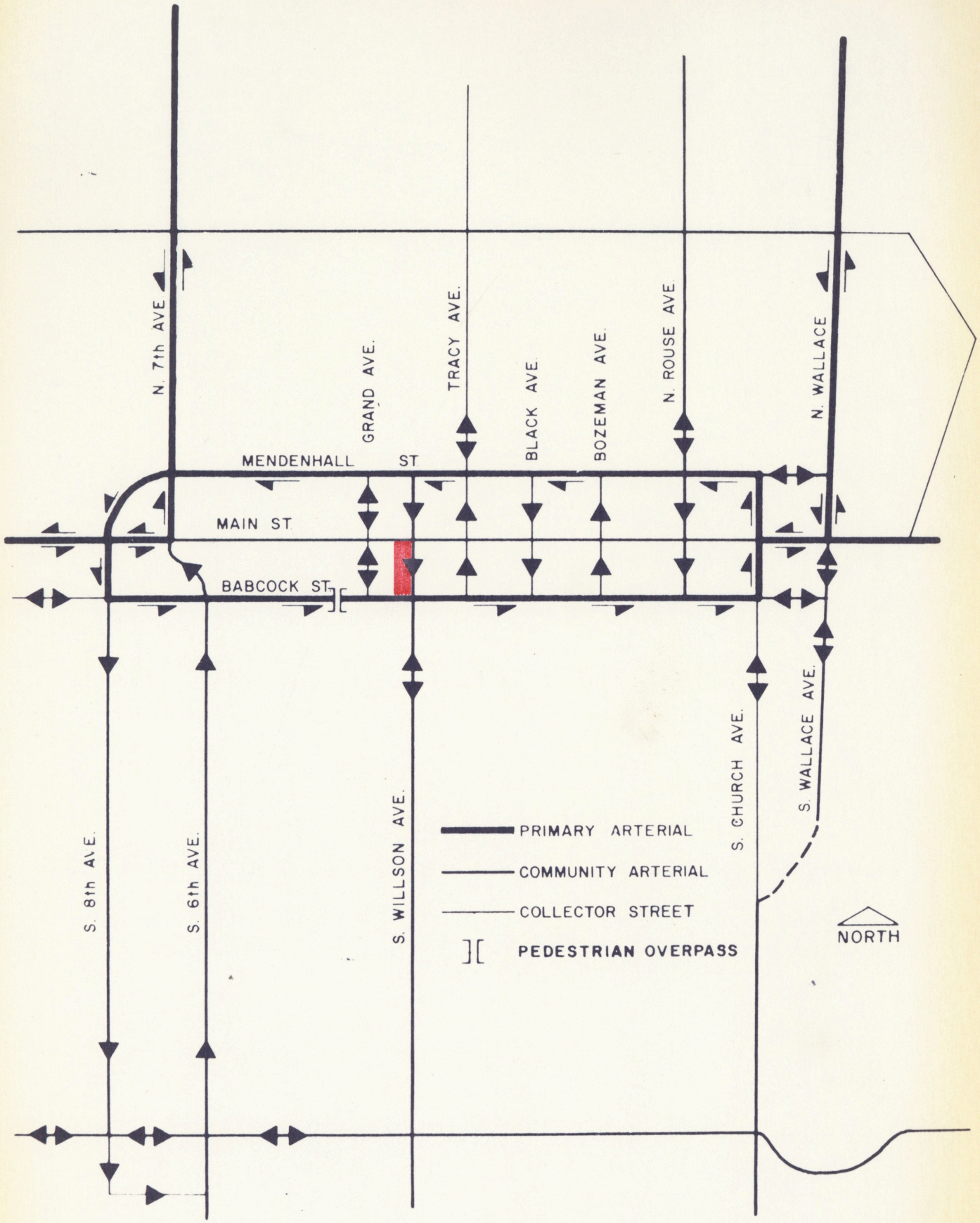
FIGURE 9. (17:17)

BOZEMAN

Gallatin County

MONTANA

Figure 10. **ONE WAY COUPLETS** (17:26)



A public library should be located in the hub of public activity and where pedestrian traffic is concentrated. It will then be an "ever-present invitation" which is constantly before the public, "and the success of the library as measured by the number of its users will be augmented." (5:48) The site is currently well situated for vehicular and pedestrian traffic, according to the previously mentioned criteria. If the city plans for the future are followed, traffic passing the site should increase substantially, and thereby enhance the location.

Despite the hodge-podge of city streets that exist now, the site is only two traffic lights and less than two miles from the north interchange of the freeway. Accessibility to the site should be even less difficult for county residents if the city plan is effectuated.



1. North side of proposed site.



2. Northwest corner of site.



3. Southeast corner of site.



4. South side of site.



5. Existing alley on site.

M. S. U. BOOKSTORE, INC.



6. View north along South Willson from corner of Babcock and Willson.



7. View southeast from corner of Babcock and Willson.



8. View south along South Willson.



9. Municipal parking lot south of site.



10. Private parking lot adjacent to west side of site.

M. S. U. BOOKSTORE, INC.

FUNCTION

Introduction

The three levels "established by librarians to connect specific readers with the appropriate materials at a given moment in time" are supply, guidance, and stimulation. (4:18) These correspond to the successive steps in the reading experience. First, the person is motivated to read, then he determines what to read, and finally he obtains the appropriate material. The library that merely supplies the material "enters the process of communication when it is almost consummated." (4:18) Similarly, the library that not only supplies but also that guides the reader in the selection of his material enters the process earlier but still one level late. However, the library that attempts to stimulate the reader, in addition to reading guidance and supply, functions throughout the entire process prior to the actual reading. (4:18) More simply stated: the function of a library is to make available the most knowledge, to the most people, at the least cost. Since cost is not a major consideration in this project, I will limit the function to making available the most knowledge to the most people.

The library should serve the county as a cultural and educational center. (5:14) Therefore, in addition to books, periodicals, and newspapers, provisions will be made for movies, lectures, meetings, visual exhibitions, and audio material such as records. A bookmobile service would operate from this library, because such far-flung reaches within the county as West Yellowstone, Gallatin Gateway, and Maudlow would otherwise not have local library service. The

bookmobile would also take requested material not locally available to branch libraries in Belgrade, Three Forks, and Manhattan. These communities presently have small local libraries which could be integrated into the county library system if they so choose. In Montana, when several small libraries unit under a single administration, as would be the case in Gallatin County, the system is known as a federation. (16:5)

Most libraries are inherently good fallout shelters, so I will incorporate as much shelter space as possible into this building. This is not the normal function of a library, but it is the responsibility of county officials to provide adequate shelter space for county residents.

Types of People to be Served

The Bozeman Public Library does not categorize its patrons in any way other than age group and city resident status. An analysis of library users in 1967 by age group follows:

CATEGORY	AGE	BOOK CARDS
Juvenile	younger than 12 years	2,499
Adult	12 years and older	3,527
	TOTAL	6,026

Table 10. Bozeman Public Library Book Cards as of December, 1967. (42)

Juvenile book cards as a per cent of the total has declined in recent years according to Miss. Hileman. This may be attributed to improved school libraries.

Further analysis of the people to be served by the federation is warranted in this study. Since information is not locally available, an analysis of public library systems of similar sizes in Maryland will be used to approximate the factors that influence library use.

Housewives	Students	Employed Adults	Retired
21.0	43.7	25.4	2.2

Table 11. Percentage of Library Users. (44:373)

The survey indicates that patron use varies considerably with the size of the library collection. It was found that while the use of the library by 12 to 16 year olds decreased as the size of the library increased, the use of the library by 17 to 21 year olds tended to increase slightly as size increased. (44:375)

Number of People to be Served

COLLECTION SIZE IN VOLUMES	TOTAL NO. OF USERS IN MARYLAND SURVEY
Bookmobiles	898
10,000 - 25,000	4,421
25,001 - 50,000	5,958
50,001 - 100,000	6,859

Table 12. Number of Users as a Function of Library Size. (44:375)

Table 12 indicates that an increase in the number of users (card holders) could be expected if the Gallatin Federation were formed and its collection size in Bozeman expanded. As previously mentioned in this study, nearly 75% of the county population lives within 15 miles of Bozeman. This proportion is not apt to change significantly by 1985. Due to this proximity, for the purposes of this study, it will be assumed that 75% or 37,500 of the projected 1985 county population will be served by the main library. These statistics are important to the design of the new library building because the A.L.A. recommends that space requirements be based on 10 to 20 year projections of the population to be served. (29:7)

The A.L.A. also recommends a collection size of 2.5 to 2.75 volumes per capita for libraries serving 35,000 to 100,000 people. Using 2.5 volumes per capita as criteria for this library, the building should then be designed for a collection size of 93,750 volumes.

If the number of library users increases proportionally with the collection size, as in the Maryland survey, approximately 9,350 users can be expected by 1985. The number of bookmobile users the Gallatin County Federation can expect will probably approximate that of the Maryland survey, or about 900.

Library Use as a Function of Size

Percentage of Users Who Are Using The Library For:	SIZE OF COLLECTION IN VOLUMES			
	Bookmobiles	10,000-25,000	25,001 50,000	50,001 100,000
General reading	58.7	37.9	32.9	31.3
Personal reading	75.5	55.9	48.2	46.2
Job purposes	3.5	5.2	6.1	6.7
School purposes	27.7	35.8	42.7	43.5
Library catalogs	1.0	14.5	17.3	21.0
Reference books	10.1	18.7	21.1	23.5

Table 13. Library Use Analysis as a Function of Size. (44: 375-378)

Functional Requirements

The most important single factor in the design of a library building is flexibility. This includes flexibility of operation, control, supervision, and of space allocation. (5: 17) Each staff member in a library of this size will be required to perform many tasks. Unless the areas where these tasks are located are conveniently arranged with respect to one another, much staff time will be wasted, and it may result in poorer service. Optimum flexibility of space can be achieved if a minimum of fixed walls are used throughout the building. Also, modules in the stack areas should be in multiples of three feet, since shelving is usually manufactured in three-feet-long sections. (5:83)

Functions and Interrelationships Inside the Building (5)

Lobby and Main Entrance: These circulation areas will handle the largest volume of traffic, and should be situated so that traffic can move to and from various areas as directly as possible without crossing through or disturbing quiet zones; and the lobby should contain a public telephone, exhibit or display area, and casual chairs.

Lending Desk: This area will be the control and service center of the library; it should be near to and visible from the main entrance; it should afford visual control of the open stacks and reading areas; and it must include a charging machine, card file, and telephone.

Processing Department: This area will order, receive, and catalog books; it should be near freight delivery, easily accessible to card catalogs and stacks, and closely related to the librarian's office; and it should be adjacent to and allow visual control of the lending desk.

Exhibit Storage and Preparation: This area should be adjacent to the lobby.

Librarian's Office: This area will be for general office work; it should be near the lending desk; and it will contain a desk, chair, and typewriter table.

Workroom: Book repair and pocket pasting will be done in this area; it should be adjacent to the processing department; and it must contain shelving and counter space.

Staff Quarters: This area will consist of a lounge, kitchen, and staff cloak room; it should be convenient to the librarian's office; and should contain food preparation facilities, casual chairs, table, and straight chairs.

Extension Service: This area will include a bookmobile garage, office space for the extension service librarian, and minimum stacks; and it should be near the processing department.

Reference Desk: It should be easily seen and accessible to the public; and it should be near and visible to the lending desk.

Reference Book Collection: This area should be near the reference desk.

Phamphlet Files: This material should be stored at the reference desk in filing cabinets.

Stacks: "The most efficient and economical shelving device for book stacks is a series of standard double-faced floor cases, 9 or 12 feet long, 18 inches deep, set at right angles to the rear wall of the reading room with a 3½ foot aisle between cases, i.e., the cases on 5 foot centers." (29:11)

Young Adult Area: This area should be apparent and easily accessible from the main entrance; it should also be near the adult area; and it will include stacks, tables, and chairs.

Adult Area: This area should be similar to the young adult area and include a small, quiet, secluded reading area away from the young adult and children's areas.

Children's Area: This area should be adjacent to the main entrance if on the ground floor; if it is located in the basement or on the first floor, it should have a stair near the main entrance; depending on its location, this area may or may not need a separate lending desk; and it will include stacks, tables, and chairs.

Newspaper and Periodical Areas: These areas should be open to the general public and easily accessible from the main entrance; they should be visually controlled from the lending desk; the periodical area should include indexes and both areas should have storage and display racks, tables, and chairs.

Card Catalogs: These should be visible from the main entrance; should be centrally located with respect to the general reading and reference areas; and it is important that they also be convenient to the lending desk, reference desk, and processing department.

Old Newspaper and Rare Book Vault: It requires accessibility only from the reference desk.

Restrooms: These will serve the reading areas, staff, and meeting rooms; they should be easily accessible and afford visual control of the entrances from the lending or reference desk; and they should be located or acoustically treated so that they do not disturb the quiet zones.

Audio Facilities: The record or tape listening facilities may be in a separate area or room if properly supervised; they should be easily accessible from adult and young adult areas; and they will contain tables, chairs, and plug-in headsets.

Meeting Room: This facility for meetings, movies, and lectures may be reasonably distant from the main entrance; it is desirable for this area to have an additional entrance that can be used after the rest of the library is closed; and it should be near the restrooms, chair storage, and audio-visual equipment storage areas.

Public Cloakroom(s): Facilities for coat and boot storage should be centrally located with respect to all reading areas and the meeting room; ideally, the cloakroom(s) should be adjacent to the main entrance.

Typing Room: This will be a small, acoustically-treated room which will house a coin operated typewriter, table, and chair for public use; and this room should be visible from the lending desk, but located away from the quiet zones.

Mechanical Room: This room should be in the basement and as near the center of the building as possible; and it will house heating, ventilation, and air-conditioning equipment.

Janitor Storage: This room will be in the basement and contain maintenance supplies.

Functions and Interrelationships Outside the Building

Automobile Parking: Sufficient parking is available in the municipal lots north and south of the site; and for this writer's recommendations, see the Site Conditions section.

Bicycle Parking: Bicycle racks will be provided near the main entrance.

Bookmobile Service: The bookmobile van may be 30 feet in length and require a turning radius of 35 feet; (15:612) and an inside loading dock of approximately 2 feet in height will be necessary to load and unload the bookmobile.

Book Depository: A book drop should be provided on the building exterior which would make it possible for books to be returned when the library is closed, or eliminate the need of going inside when it is open; if possible, the deposited books should land in a staff work area.

Factors Influencing Specific Area Location

Natural Light

It is important that the entrance display a play of sunlight upon it, for the functional and aesthetic reasons mentioned in Site Conditions. Windows will be located on the north and east sides of the building to entice passers-by to enter the library. When they see the patrons within the library selecting books and reading them, I hope interest and patronage will increase. Reading and desk work is best done near the windows, if the sunlight is controlled. (5:19)

Noise

Noise from street traffic and other outside sources can be controlled by the use of acoustic insulation and arrangement of interior areas to form buffer zones. (5:19,22)

Floor Levels (29:7)

Site Limitations

If the selected site is large enough, nearly all book stock, all reading areas, public service areas,and processing space will be on the main floor. However, if the site is not sufficiently large enough to allow this, an open mezzanine of bookstacks is the next best spatial arrangement. If the site is still not large enough to permit the remaining elements to be placed on the same floor, the Children's Department should be the first element to be located on another level.

Secondary Elements

The following elements should not occupy the main floor space if such space is a premium:

1. a meeting room
2. a staff room
3. public toilet rooms
4. storage stacks

Vertical Transportation

When storage stacks or open shelves are placed at levels other than the main level, vertical transportation for books must be provided either in the form of elevators or book lifts.

PROGRAM

Function	square feet Existing Area (46)	Required Area (29) (42)
Children stacks	(560)	1,000
Children reading		1,000
Young adult stacks	none	2,600
Young adult reading	none	1,400
Adult stacks	(1,900)	4,500
Adult reading		1,400
Periodicals	100	300
Indexes and catalogs	5	100
Newspapers	25	50
Record racks	10	25
Audio listening area	none	30
Reference stacks	35	200
Reference reading	none	300
Reference desk	none	50
Lending desk	100	200
Librarian's desk	none	100
Processing workroom	300	200
Cataloging workroom	150	350
Shipping and receiving	none	75
Staff lounge	none	150
Kitchen	none	75
Toilets (public and staff)	125	200
Rare books vault	none	100
Meeting room	none	1,000
Audio-visual equipment storage	220	50
Chair storage	50	50
Entrance	75	150
Lobby	none	200

Function	square feet Existing Area (46)	Required Area (29) (42)
Display	50	300
Exhibit preparation and storage	none	200
Extension Service:		
librarian's office	none	80
stacks	none	200
bookmobile garage	none	750
Mechanical	210	430
Miscellaneous storage	600	250
Janitor storage	15	50
Circulation (stairs, corridors, etc.)	470	1,885
TOTAL	5,000	20,000

Table 14. Areas in the Bozeman Public Library and Estimated Areas for the Proposed County Library.

ECONOMICS

Appropriation of Funds

Local Funds

To provide the local funds the county must hold an election to vote on one or more general obligation bonds. Ten per cent of the taxpayers must first sign a petition in order to hold this election. If the bond issue is approved, property tax would be levied to retire the bond within 20 years. (39)

Federal Funds

The Library Services and Construction Act of 1964, as ammended in 1966, makes available federal funds which could cover from a minimum of 33 per cent to a maximum of 66 per cent of the total construction cost of this library. Total construction cost is considered to include the architect's fee, land acquisition, and initial equipment costs (excluding books). However, since this money is funded through the state government, the state requires that the library be at least county-wide, in order to qualify for the federal funds. Since this is to be a county library, it would qualify for federal funds, thereby reducing the direct local money necessary to finance the project.

Site

Acquisition

The county can acquire property in one of two ways. First, county representatives may negotiate with the landowner. If a price can be determined that is acceptable to both parties, the purchase will then be made. However, if the landowner wants more than the county is willing to pay, the county may exercise the right of eminent domain. This power permits a government to acquire a necessary parcel of land without paying an exorbitant price. But this right is limited by state law to obtaining property for specific purposes, such as hospitals, civic centers, and museums. Unfortunately, a discussion with Mr. Mac Anderson, Gallatin County Attorney, disclosed that he would not support the right of eminent domain for the purpose of a library. Since it is not specifically in the law, he mentioned that it would require state legislative action to include a library in the county's right of eminent domain. His alternative for site acquisition if a price cannot be agreed upon by both parties is to either pay the high price or find another site, since wide use of the car makes site location unimportant. (38)

I take issue with this for two reasons. First, since a museum is included in the county scope of eminent domain, then a library should also be included. Second, his statement to the effect that site location is unimportant reflects gross ignorance to the recommendations of experienced library consultants such as Galvin and Van Buren, and the foremost authority on libraries in this country, the American Library Association.

Cost

For the purpose of this paper, I will assume the chosen site can be obtained for the fair market value of the property and buildings that are now upon it. That price is estimated to be $90,000. (40)

Demolition

Before construction can begin on the site, the existing structures must be razed. The cost for demolition ranges from $0.60 to $1.00 per square foot of building. (10:Sec. 14, p. 17) This closely approximates a total of $20,000, which will be assumed to be the total cost of demolition, including salvage.

Construction Costs

A good preliminary cost estimate of the library can be determined by using the calculator method as found in the 1965 Marshall Valuation Service.

For the purposes of this method, construction types are segregated into four classes, depending upon the structural systems employed, the quality of finish materials, and the type of mechanical systems used. Since there is no budget for this project, the solution proposed spring quarter will probably be class "A" or "B" construction. See the following table for the explanation of classes, and the approximate cost of each.

Class A (average library)

Exterior walls: face brick, metal and glass, limestone, and architectural concrete.

Interior finish: plaster, terrazzo, and vinyl tile.

Mechanical: high level lighting, adequate plumbing, and warm and cool air (zoned).

Cost: $24.54 per square foot of floor area.
$2.05 per cubic foot of volume.

Class A-B (library mezzanine)

Exterior walls: in library cost.

Interior finish: few partitions, plaster soffit, and vinyl-asbestos floor tile.

Mechanical: high level lighting, heating in library cost.

Cost: $7.91 per square foot of floor area.

Class C-D (library basement)

Exterior walls: finished interior and good waterproofing.

Interior finish: few partitions, acoustic tile, and vinyl-asbestos floor tile.

Mechanical: high level lighting, adequate plumbing, and warm and cool air (zoned).

Cost: $8.83 per square foot of floor area.
$0.74 per cubic foot of volume.

Table 15. Construction Class Description and Cost. (10:Sec.15, p.17)

The costs indicated on the preceding table include the architect's fee, contractor's cost, overhead, and profit. The following table outlines the structural systems of each class.

Class A: fireproofed structural steel frame with concrete or masonry floors and roofs.
Class B: reinforced concrete frames and concrete or masonry floors and roofs.
Class C: masonry or reinforced concrete exterior walls, and wood or steel roof and floor structures or slab on grade.
Class D: wood or steel frame and roof structures.

Table 16. Construction Class Structural Systems. (10:Sec.15, p.21)

The expected life of a building varies directly with the class and quality of construction. The following table illustrates that fact with statistics that estimate average building life that can be expected for libraries in each construction class.

Quality of Construction	Class of Construction			
	A	B	C	D
Good and Excellent	60	60	55	50
Average	55	55	50	45
Low-cost	50	50	45	40

Table 17. Expected Building Lives in Years for Each Class. (10:Sec.15, p.17)

Cost Multipliers

Effecting the estimated cost for each class of construction are various multipliers. These multipliers take into consideration such variables as the current cost of construction, regional differences in construction cost, and perimeter-floor area multipliers.

Since the costs given in Table 15 are calculated infrequently, multipliers are published monthly to bring those costs up-to-date. The following table lists the multipliers for each class of construction, as of February, 1968.

Class of Construction			
A	B	C	D
0.99	0.98	0.97	0.99

Table 18. Current Cost Multipliers for Bozeman, Montana. (10:Sec.99, p.3)

Not only must the basic construction costs from Table 15 be modified for current cost of construction, but they must also be modified for a particular city or region. Since Bozeman is not assigned local multipliers, the state-wide average will be used to reflect local conditions. See Table 19 for these multipliers.

Class of Construction			
A	B	C	D
0.99	0.98	0.97	0.99

Table 19. Local Multipliers for Bozeman, Montana. (10:Sec.99, p.6)

The final cost multiplier which will be considered in this cost estimate is the floor area-perimeter multiplier. The values in the following table are important because they indicate the effect of exterior wall length and number of corners on the total construction cost. At this programming stage, it appears that a perimeter of 700 lineal feet for the proposed building is a good estimate, especially since the perimeter of the site minus the required setback is only 724 lineal feet.

Average Perimeter in Lineal Feet for a Building with 20,000 sq. ft. of Floor Area							
500	600	700	800	1,000	1,200	1,400	1,600
.897	.908	.918	.928	.948	.969	.990	1.011

Table 20. Floor-Area Perimeter Multipliers. (10: Sec.15, p.19)

Additions to Basic Cost

The design temperature for heating in Bozeman is -30°F. (9: 149) Since the design temperature used to determine heat loss for mechanical requirements in Table 15 was more than

$-30^{o}F$, an additional $0.90 per square foot of floor area must be added to the basic construction cost, and modified with previously mentioned values. (10:Sec. 15, p.12)

Site Improvement

The cost of improving the site includes such items as excavation, fill, paving, and landscaping. Since these are design elements, they are not yet established. Therefore, it is impossible to accurately determine their cost. A value of $10,000 should be generous enough to cover all site improvement costs, so this amount will be used in the preliminary cost estimate which follows.

site cost	=	$90,000
demolition cost	=	$20,000
site improvement cost	=	$10,000
class "A" construction cost/sq. ft.	=	24.54
design temperature addition/sq. ft.	=	0.90
current cost multiplier	=	0.99
local multiplier	=	1.04
floor area-perimeter multiplier	=	0.918

site cost	= $ 90,000
demolition	= $ 20,000
building cost	= $432,000
site improvement	= $ 10,000
TOTAL COST	= $552,000

The total building cost could be significantly reduced by either going to class "C" construction, or the introduction of a mezzanine and/or basement.

Local Taxation

The taxable valuation of Gallatin County was $10,011,105 for the 1965-1966 fiscal year. The city of Bozeman currently accesses taxpayers a 3.20 mil levy for the purpose of maintaining library service. The tax levy for library service is 3.00 mils in Belgrade, 2.00 mils in Manhattan, and 1.50 mils in Three Forks. (26:2,3)

Montana statues limit community taxation for library operations to 3.50 mils. However, if the general obligation bond is approved by the voters, a tax in excess of the 3.50 mil limit could be levied if it is needed to retire the bond. (39)

Operational Costs

The data used to estimate the yearly operational costs for the Gallatin County Library Federation was taken from a 1963 survey of a Pacific coast city library system. The system had a central library with three branches, and served a total population of 83,245. This writer estimates operational costs for the Gallatin County Federation in the following table.

	System Expenditure	
	Gallatin County	Pacific Coast
Professional staff salary	$ 51,000	$130,600
Clerical staff salary	52,000	156,500
Collection	22,000	65,600
Maintenance and other expenses	18,000	66,900
Expenses not charged to library budget (pension and social security)	15,000	31,500
TOTAL	$158,000	$451,100

Table 21. Estimated Operational Expenditure for the Gallatin County Library System in 1970, based on Data from 1963 Survey of a Pacific Coast Library System. (1:8-9)

The total of $158,000 shown in Table 21 is 5.2 times the total amount of $30,785 which was expended by all libraries within the county during the 1965-1966 fiscal year. (26:2,3)

Although the estimated operational expenditures for 1970 are many times the 1965-1966 expenditures, it must be remembered that the cost represents widely expanded library service. Service will be extended to those county residents who before were enaccessible to it. Those residents that previously had access to service, will in 1970, be provided with a much better service.

System Type	Location	Population Served	Yearly Per Capita Operational Cost
city	Pacific coast	83,245	$5.41
county	Southeast	163,401	$3.27
city-county	Midwest	407,000	$2.54
two counties	North Atlantic	300,000	$4.08
county	Gallatin County	34,500 (1970)	$4.59 (1970)

Table 22. Operational Costs of Library Systems that Vary in Size. (26:8-15)

If the per capita cost for the Gallatin County system seems to be high in comparison to others in Table 22, it must be realized that it is a considerably smaller system. If the county population continues to grow at projected rates, it is possible that by 1985 the per capita cost could be as little as $4.00 per year.

AESTHETICS

Introduction

Since the aesthetics of a building should be an expression of its nature, the aesthetics of this building cannot be resolved until the nature of a library is determined. A library by nature stores and distributes knowledge. As a vast storehouse of knowledge, the building must evoke a feeling of dignity and knowing. Also, to promote the distribution of this knowledge, the library must be warm, friendly, (29:1) and inviting. (5:17)

In addition to aesthetic cinsiderations, this designer must also visualize his project as part of a total environment. For not only will the environment influence the library, but the library will also influence the environment.

Aesthetic Expression

The designer's media for aesthetic expression includes the proportions of the space he molds.

> "We put thirty spokes together and call it a wheel;
> But it is on the space where there is nothing that
> the usefulness of the wheel depends.
> We turn clay to make a vessel;
> But it is on the space where there is nothing that
> the usefulness of the vessel depends.
> We pierce doors and windows to make a house;
> And it is on these spaces where there is nothing that
> the usefulness of the house depends.
> Therefore just as we take advantage of what is, we
> should recognize the usefulness of what is not."
> (6:8)

Also important are the shapes or forms of the physical facility he creates, how he admits natural light, and the color and texture of the material he builds with.

At this stage it is impossible to say precisely how the aesthetic objectives of this project will be achieved. It is likely however, that the most important tools for aesthetic expression of the building exterior will be shape or form in conjunction with color and texture of the materials used. Within the confines of the building though, all of the suggested media of aesthetic expression will probably be manipulated to achieve the desired effects.

The Library as Part of the Environment

To merely neglect the surrounding environment is an easy way to design. But the result of this is often conflicting elements within the environment. The successful designer must recognize his building as an integral part of a total environment, and design it as such. This is not to say that innovation should be discouraged, but that there must be harmony between elements.

A particular problem of the proposed site is that it borders two distinctively different environments. While the north side of the site is entirely commercial, the south side is more residential than commercial. To design the library with respect to only one of these environments would do an injustice to the other. Therefore, the library should

be, and quite naturally can be, transitional in character. That is, it will be a transition from the business district to the small commercial and residential district.

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APPENDIX

Correspondence.

MONTANA STATE LIBRARY
930 EAST LYNDALE AVENUE HELENA, MONTANA 59601 RUTH O. LONGWORTH, LIBRARIAN

January 17, 1968

Mr. David Anderson
27 Glacier Court
Bozeman, Montana 59715

Dear Mr. Anderson,

I am delighted to know that you have chosen to do a new public library for Bozeman as your thesis. Under separate cover we will send you the material you requested and other material that we have that I am sure will prove useful. Our architects who have been involved in library buildings over the past three years have found the Joseph Wheeler pamphlet on the small public library immensely valuable and probably the best in the field for specific information. The American Library Association is working on something currently on costs but this item is in a rather inflationary state and I'm not sure that whatever we send you will be currently valuable.

We will certainly want a copy of your program when completed and will hope to hear from you.

Most sincerely,

Ruth O. Longworth

Mrs. Ruth O. Longworth,
Librarian

ROL:aac

P.S. We will send any books we think are useful directly to you and ask that you return them to us when you are finished with them.

DEPARTMENT OF BUILDING & SAFETY
CITY OF BILLINGS, MONTANA

P. O. BOX 1178 PHONE 259-2430

BUILDING INSPECTOR
GENE FRATES
PLUMBING INSPECTOR
BEN JOHNSON
ELECTRICAL INSPECTOR
ELDON L. SHIRLEY
SAFETY INSPECTOR
ROBERT N. DAVIS

January 29, 1968

T. E. DUKE
DIRECTOR OF BUILDING
AND SAFETY

Dave Anderson
27 Glacier Court
Bozeman, Montana

Dear Mr. Anderson:

Your problem is a typical one with architects. However, I believe that your ordinance should read: One (1) parking space for each 300 sq. feet rather than 30 sq. feet. This must have been a typographical error when printed. Two hundred or three hundred sq. feet per car is more reasonable, this would give you 15 to 20 spaces for a 4500 sq. foot building.

You must remember that most codes do not require the ideal conditions, but require only the minimum and the architect generally provides a little better than the minimum.

I am always pleased to help students and if I can be of further help, don't hesitate to ask.

Sincerely,

CITY BUILDING DEPARTMENT

T. E. Duke

T. E. Duke, Director of Building and Safety

TED/mm

City of Missoula
MISSOULA, MONTANA, 59801

BUILDING INSPECTOR
800 WEST BROADWAY
TELEPHONE 543-8271

January 30, 1968

Mr. Dave Anderson
27 Glacier Court
Bozeman, Montana
59715

Dear Mr. Anderson:

Next to our library in Missoula we have a public parking area, so have no other parking space for the library except on street parking.

We do not have an ordinance to cover libraries, but are in the process of drawing one up on off street parking for buildings of this type. We will most likely use the restriction which is fairly standard which is one (1) space for each two hundred and fifty (250) square feet gross floor area.

I trust this information will be of help to you.

Sincerely,

Joe R. Durham

Joe R. Durham
City Building Inspector

JRD/jg

MISSOULIAN



Visit MONTANA the BIG SKY Country

DON E. SWINGLEY
INSPECTOR OF BUILDINGS

JEANNE M. WHEELER
ASSISTANT

WALTER DAVIDSON
CHIEF PLUMBING INSPECTOR

OTIS PYATT
CHIEF ELECTRICAL INSPECTOR

DEPARTMENT OF BUILDINGS
CITY OF GREAT FALLS
CIVIC CENTER BLDG.
GREAT FALLS, MONTANA

February 1, 1968

Mr. Dave Anderson
27 Glacier Court
Bozeman, Montana 59715

Dear Mr. Anderson:

Enclosed find a copy of the off-street Parking Ordinance of the City of Great Falls. This Ordinance was not in effect at the time of the start of construction of our new Library.

If such occupancy was to be started at this time the off-street parking requirements would be based on our area #2 for Public assemblage areas without fixed seats.

We do not include in our floor area, corridors, closets and furnace rooms. This thus reduces considerably the number of stalls needed.

Sincerely,

Don E. Swingley
Inspector of Buildings

TRIBUNE PRINTING COMPANY, GREAT FALLS, MONTANA

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GREAT FALLS, MONTANA:

Section 1. That Title IV, Chapter 9, Official Code of the City of Great Falls, Ordinance No. 1284), be amended to include the following Off-Street Parking requirements, the same to be codified as 4-9-30:

"4-9-30: OFF-STREET PARKING REQUIREMENTS.

(A) Parking spaces shall be provided and satisfactorily surfaced and maintained by the owner of the property for each building erected. Where an existing structure is enlarged or remodeled to such an extent that it increases the occupant load of the building by twenty-five per cent (25%), this occupant load shall be determined by the appropriate chapter of the Building Code, the structure shall also meet the requirements for parking spaces as provided herein.

The number of parking stalls shall be determined for each occupancy by the following table and by the density zone in which it lies. The city is, therefore, divided into three (3) density zones as set forth on an official map of the City of Great Falls, on file and of record in the Office of the City Clerk.

LAND USE	AREA NO. 1	AREA NO. 2	AREA NO. 3
RESIDENTIAL			
"A" USE	///////	1 for 1 Res. Unit	2 for 1 Res. Unit
"B" USE	//////	1 for 1 Res. Unit	1 for 1 Res. Unit
"C" USE	1 for 1 Res. Unit	1 for 1 Res. Unit	1 for 1 Res. Unit
PUBLIC ASSEMBLAGE-with fixed seating	1 stall for each 10 fixed seats	1 stall for each 7 fixed seats	1 stall for each 5 fixed seats
PUBLIC ASSEMBLAGE-without fixed seats	1 stall for every 120 sq. ft. of assemblage area	1 stall for every 90 sq. ft. of assemblage area	1 stall for every 50 sq. ft. of assemblage area
MOTELS	1 stall for each guest unit	1 stall for each guest unit & 1 for each employee	1 stall for each guest unit & 1 stall for each employee
HOTELS	1 stall for 6 guest units	1 stall for every 3 guest units	1 stall for each guest unit
RESTAURANTS, NIGHT CLUBS, TAVERNS & OTHER EATING ESTABLISHMENTS	1 stall for each 10 seats	1 stall for every 5 seats	1 stall for every 2.5 seats
HOSPITALS		1 stall for each bed, plus 1 for each Doctor	1 stall for each bed, plus 1 stall for each employee
SANITARIUM AND NURSING HOMES		1/2 stall for each bed	1 stall for each 2 beds, plus 1 stall for each employee

MONTANA STATE UNIVERSITY LIBRARIES
stks 720.6.M76An23
A county library for Gallatin County to
CA
3 1762 00154414 5