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STATE OF MONTANA  
ENVIRONMENTAL QUALITY COUNCIL  
DEPARTMENT OF HIGHWAYS

HELENA, MONTANA 59601

H. J. ANDERSON  
DIRECTOR OF HIGHWAYS

January 31, 1975

IN REPLY REFER TO:

36-SCK  
M 1206(1)  
Bozeman Couplet

Executive Director  
Environmental Quality Council  
Capital Station  
Helena, Montana 59601

Gentlemen:

Enclosed for your information are two (?) copies of the Agency Impact Determination for the above subject project, as approved by the Federal Highway Administration.

Very truly yours,

H. J. ANDERSON  
DIRECTOR OF HIGHWAYS

BY: *Stephen C. Kologi*  
Stephen C. Kologi, P.E.  
Chief-Preconstruction Bureau

36-SCK:AGZ:DVS:sk

Enclosure

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STATE OF MONTANA  
DEPARTMENT OF HIGHWAYS

H. J. ANDERSON  
DIRECTOR OF HIGHWAYS

January 28, 1975

IN REPLY REFER TO

36-SCK  
M 1206(1)  
Bozeman Couplet  
REF: 08-30.22-B1

U. S. Department of Transportation  
Federal Highways Administration  
Helena, Montana 59601

Reply Requested by:  
February 4, 1975

Gentlemen:

This Agency Impact Determination is being submitted for your concurrence that an Environmental Impact Statement of a Negative Declaration is not required for this nonmajor action.

1. DESCRIPTION OF THE PROPOSED HIGHWAY IMPROVEMENT AND ITS SURROUNDINGS

A. Location and Description of the Project

This project is located in Bozeman, Montana. Work to be completed will consist of installing a one-way couplet on Babcock Street and Mendenhall Street. The couplet will start at Rouse Avenue and follow Mendenhall westerly to 11th Avenue. The other portion of the couplet will start at 8th Avenue and follow Babcock Street easterly to Rouse Avenue. The two portions of the couplet will both have two lanes of travel.

Two intersections will be signalized. The intersections are North 7th Avenue with Mendenhall Street and Babcock with South Willson Avenue. North 7th Avenue with Mendenhall Street will have a full-actuated controller with pedestrian push buttons and pedestrian heads. Babcock Street with South Willson Avenue will have a fixed time controller with pedestrian push buttons and pedestrian heads. Service and all wiring will be installed underground.

B. Purpose of the Project

This project was included in the Bozeman TOPICS Report. City Officials, The Chamber of Commerce and the Downtown Parking Commission have all requested that this project be built as soon as possible in order to eliminate congestion on Main Street.

Presently, Mendenhall Street is carrying an Average Daily Traffic Volume (ADT) of approximately 3900, Main Street has an ADT of 17,000, and Babcock Street has an ADT of 4400. After the couplet is operational, Mendenhall Street will have an ADT of approximately 7300, Main Street will have an ADT of 11,000, and Babcock

(Cont'd)

H. J. ANDERSON  
DIRECTOR OF HIGHWAYS  
JAY C. LONDE  
SECRETARY

U.S. Department of Transportation  
M 1206(1)  
Bozeman Couplet

Street will have an ADT of 8400. The present traffic congestion on Main Street will be reduced significantly by the installation of the couplet.

Experience has indicated that properly designated and controlled one-way streets will improve the operation of vehicular and pedestrian traffic by:

Increasing Capacity. Because delays due to turning movements are minimized and because full use can be made of streets which are an odd number of lanes in width, the capacity of a street under one-way operation may increase from 20 to 50 percent, with the greatest advantage occurring on narrow streets.

Increasing Safety. The safety of moving traffic is increased by one-way operation because pairs of one-way streets essentially provide a "divided highway". Pedestrian crossings are more orderly and safe. Vehicular grouping and speed control can be more easily maintained. Better gap frequency is present for vehicles or pedestrians crossing or entering from such cross streets, driveways, pedestrian crossings, etc., as may exist between signals. The inherent smoothness and orderliness of mid-block and intersection operation tends to reduce driver impatience and, therefore, the probability of accident-producing behavior. The required field of vision on approach to intersections is reduced because drivers on one-way streets need to observe fewer movements than those drivers on two-way streets.

Improving Operation. One-way movement will improve traffic operation because travel time to a destination usually is reduced because of the improved signal progression and the reduction in congestion. Turning vehicles are not hindered by opposing traffic. A predominant turning movement may be permitted from more than one lane more easily than with two-way operation. Some vehicular movement from adjacent heavily traveled two-way streets may be attracted to one-way streets.

Traffic signal timing arrangements are simplified. Conversion to one-way operation frequently makes available multiple-lane efficiency between intersections, allowing the traffic stream more readily to pass around stalled vehicles, street repairs, vehicles being maneuvered at parking spaces, etc. Driving may be simplified by the elimination or reduction in the multiplicity of two-way street controls such as turn prohibitions, parking bans, complex signal phasing, reversing lanes, etc. The movement of public transit vehicles will usually be expedited.

Improving Economic Conditions. The facilitation of traffic movement and increased traffic safety is generally recognized as being of broad economic benefit to adjacent land users and to the general public. One-way operation of traffic may be economically advantageous because substantial improvements in capacity and ease of movement may be accomplished quickly and with a minimum of physical changes. A greater flexibility in meeting changing traffic patterns is possible with one-way measures than with physical changes. Expenditures are usually nominal. One-way operation may postpone or eliminate the need for parking prohibitions.

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The traffic signals at each of the two intersections have met warrants under Warrant No. 1, Minimum Vehicle Volume.

2. PROBABLE ENVIRONMENTAL IMPACT

This couplet and signal project is located in mainly a commercial area. Therefore, we can foresee no significant environmental impact. As pointed out earlier, there are many advantages to a couplet system, thus, making the roadway safer for motorists and pedestrians.

The power used by the signals at the two intersections will be approximately 2800 kilo-watt hours per month. This is approximately 4 times the amount of power used by the average home per month.

All work will be completed within the existing right-of-way.

3. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

We can foresee no significant adverse environmental effects which will be caused by this project.

4. ALTERNATIVES

The "No Build" alternate was considered, but it was decided that the congestion downtown would still exist unless the couplet was installed.

5. RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The traffic pattern should not be changed during the construction phase of the work, as all of the work can be completed on the edge of the roadway.

No natural or man made features of the surrounding land will be changed.

As stated earlier, there are many advantages of a one-way couplet system, increased safety, less congestion, and improved business.

Because this is an urban area, wildlife will not be affected and no water or air pollution problems are foreseen.

6. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There will be no significant effect upon the natural and cultural resources of the area.

7. REGIONAL AND COMMUNITY GROWTH

Land use will remain essentially the same, i.e., a commercial area. The businesses in this area will no doubt increase in numbers whether this project is built or not.

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8. CONSERVATION AND PRESERVATION

Soil erosion, park, recreational areas, wildlife, waterfowl refuges, and historic and natural landmarks are not involved in this project.

9. PUBLIC FACILITIES AND SERVICES

Religious, health, educational facilities, fire protection, and other emergency services will not be affected directly; the signals will make the roadways safer for anyone involved in these public facilities and services.

10. COMMUNITY COHESION

No additional right-of-way will be required by this project.

Land value should not increase due to this project and, therefore, will not increase the tax base.

11. DISPLACEMENT OF PEOPLE, BUSINESSES OR FARMS

There will be no displacement of people, businesses, or farms due to this project.

The project is not expected to significantly affect the employment situation except for a possible temporary increase in employment for the duration of the construction.

12. AIR, NOISE, AND WATER POLLUTION

Some air and noise pollution may occur during construction of this project, but it should not be significant.

Even though this project is in an air quality maintenance area, this project does not meet the requirements for review of projects as established by the Environmental Protection Agency. Their concern for air quality generally begins when the 10 year projected daily traffic counts increase 10,000 vehicles per day. This is about 1 1/2 times the traffic increase expected on this project. By improving traffic flow, signal projects tend to decrease air pollution.

This project is not in conflict with the State's Implementation Plan for achieving Federal ambient air quality standards and we concur with the Department of Health and Environmental Sciences determination that this project will not have a significant adverse effect upon air quality of the area.

On December 11, 1974, an exception to the design noise levels was given by the Federal Highways Administration.

13. AESTHETIC AND OTHER VALUES

"View of the Road" and "View from the Road" should not be affected by this project. The installation of the couplet and signals will help the flow of traffic and thus increase the safety of the roadways.

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The cost of this project will be far out weighed by the advantages gained from a facility with such greatly improved qualities as safety and efficiency.

BASIS FOR AGENCY IMPACT DETERMINATION

Based on the foregoing, it is felt that the proposed project will not significantly affect the environment and does not warrant the preparation of an Environmental Impact Statement or a Negative Declaration.

Your early return of a signed copy of this Determination will be appreciated.

Very truly yours,

H. J. ANDERSON  
DIRECTOR OF HIGHWAYS

BY:

*Stephen C. Kologi*  
Stephen C. Kologi, P.E.  
Chief-Preconstruction Bureau

36-50K:AOZ:DVS:sk

Enclosure

I Concur

*H. T. Stewart*  
H. T. Stewart, Division Engineer  
Federal Highway Administration

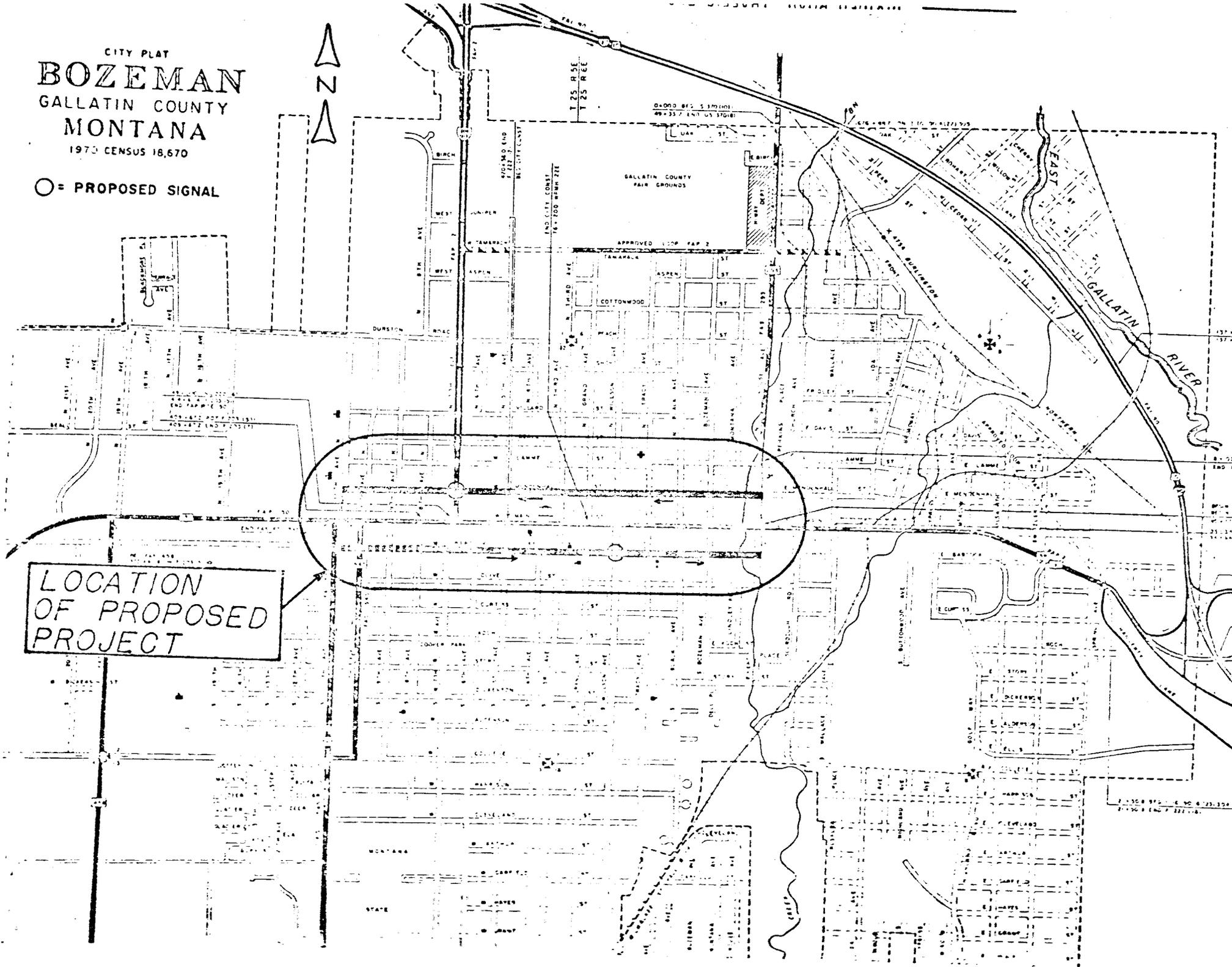
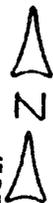
Date

1-29-75

CITY PLAT  
**BOZEMAN**  
GALLATIN COUNTY  
MONTANA

1970 CENSUS 18,670

○ = PROPOSED SIGNAL



LOCATION  
OF PROPOSED  
PROJECT

Mail File

MONTANA DEPARTMENT  
OF HIGHWAYS

STATE OF MONTANA  
DEPARTMENT OF HIGHWAYS

October 29, 1974

30-50K  
M 125a(1)  
Bozeman Couplet

U. S. Department of Transportation  
Federal Highway Administration  
Helena, Montana 59601

Gentlemen:

This letter is to request an exception to the design noise levels as specified in PPI 90-2, for the subject project.

The couplet will start at Kouse Street and follow Mendenhall Street westerly to 11th Avenue. The couplet will then follow Main Street to 8th Avenue where it jogs south one block to Babcock Street. The Babcock portion of the couplet is between 8th Street and Kouse Street. (See enclosed sketch of the project). The couplet system as proposed, will consist of two travel lanes with parking on both sides. Two intersections will be signalized under this project. The intersections are North 7th Avenue with Mendenhall Street and Babcock Street with South Wilson Avenue.

A map is enclosed which shows the zoning of the area surrounding the couplet.

In order to determine the existing noise levels and future noise levels after the couplet is operational, nine noise sensitive locations were selected for study. The ambient measurements were taken on November 14, 1974. The NCHRP 117 method was used to calculate future L10 noise levels. Two sketches are enclosed which show the nine noise sensitive locations and the present ADT along with the estimated ADT after the couplet is operational.

Location No. 1

The receiver was located 27 feet from the curb at 716 Babcock. The noise sensitive area was a residence. The noise levels are as follows:

- L10 Ambient = 66 dBA
- L10 Calculated Future = 70 dBA

(Cont'd)

U.S. Department of Transportation  
November 20, 1974

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Bozeman Couplet

Location No. 2

The receiver was located 27 feet from the curb at 428 Babcock. The noise sensitive area was a residence. The noise levels are as follows:

L<sub>10</sub> Ambient = 64 dBA  
L<sub>10</sub> Calculated Future = 70 dBA

Location No. 3

The receiver was located 81 feet from the curb on Babcock Street. The noise sensitive area was the classrooms facing Babcock Street at the Emerson Elementary School. The noise levels are as follows:

L<sub>10</sub> Ambient = 63 dBA  
L<sub>10</sub> Calculated Future = 64 dBA

Location No. 4

The receiver was located 15 feet from the curb on Babcock Street. (See the enclosed sketch). The noise sensitive area was a residence. The noise levels are as follows:

L<sub>10</sub> Ambient = 66 dBA  
L<sub>10</sub> Calculated Future = 72 dBA

Location No. 5

The receiver was located 21 feet from the curb on Mendenhall Street. The noise sensitive area was a residence. The noise levels are as follows:

L<sub>10</sub> Ambient = 67 dBA  
L<sub>10</sub> Calculated Future = 72 dBA

Location No. 6

The receiver was located 17 feet from the curb on Mendenhall Street. The noise sensitive area was a residence. The noise levels are as follows:

L<sub>10</sub> Ambient = 67 dBA  
L<sub>10</sub> Calculated Future = 73 dBA

Location No. 7

The receiver was located on the southwest corner of the intersection of 8th Avenue with Mendenhall Street. The receiver was 33 feet from the curb on Mendenhall Street. The noise sensitive area was a residence. The noise levels are as follows:

L<sub>10</sub> Ambient = 64 dBA  
L<sub>10</sub> Calculated Future = 69 dBA

Location No. 8

The receiver was located 11 feet from the curb on Mendenhall Street. The noise sensitive area was a residence about one-half of a block from the Bozeman High School. The noise levels are as follows:

L<sub>10</sub> Ambient = 63 dBA  
L<sub>10</sub> Calculated Future = 68 dBA

Location No. 9

This residence was chosen because it is located on Babcock Street between 11th Avenue South and 8th Avenue South. This section of Babcock Street will not be part of the couplet, but it is anticipated that it will operate as a portion of the couplet. The receiver was located 27 feet from the curb on Babcock Street. The noise levels are as follows:

