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STATE OF CALIFORNIA—TRANSPORTATION AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P. O. BOX 911, MARYSVILLE 95901
Telephone (916) 674-4233

December 12, 1979

FILED
By the City Council
Office of the City Clerk

03-Sac-50

REFERRED TO PLANNING & CMMUN. DEV. COMM.

FEB 5 1980

Mayor Phillip Isenberg
City of Sacramento
915 I Street, Room 202
Sacramento, CA 95814

Dear Mayor Isenberg:

A proposed project is currently in both the adopted 1979 Sacramento Regional Area Planning Commission Transportation Improvement Program (TIP) and the proposed 1980 State TIP. This project proposal would meter or control traffic entering the westbound lanes of Route 50 in the morning commute period. This set of controls would apply to all westbound on-ramps between and including Stockton Boulevard and Watt Avenue. This project would also add slightly to the capacity of Route 50 by adding a fifth traveled-way lane in the critical section between the 59th Street on-ramp and the Stockton Boulevard off-ramp. This would be done by converting a 10-foot shoulder to a lane and by converting a 6-foot paved gutter into a new shoulder. The project would also provide high occupant bypass lanes on three ramps which would favor buses, van pools, and car pools. It would also close the fourth, or outside lane, through the Watt Avenue Interchange. This would help the high volumes of traffic enter the freeway from the Watt Avenue on-ramps without interference from through traffic.

This project is proposed to accomplish a number of objectives. The ramp signal lights would control the amount of traffic entering the freeway to an optimum amount that can be handled without stop-and-go traffic. This fosters smoother flow, reduces total accidents, and reduces total emissions of hydrocarbons and carbon monoxide. The management tool of ramp metering has been recognized and committed to in the SRAPC Air Quality Non-Attainment Plan as one of the desirable elements toward meeting clean air standards. Because transit riders and car pools would receive a slight delay reduction, it will encourage some additional ridesharing and would slightly reduce the total vehicle demand in the corridor.

Recent traffic counts on Route 50 show that the peak period growth continues to grow as projected, despite the higher prices for gasoline. The proposed project is recommended to be installed during the 1981 construction season. This scheduling is timed to wait until traffic volumes have grown to a magnitude that fully warrants metering, but soon enough to keep from significant ramp delay.

In order to meet this time schedule, Caltrans and the Sacramento Regional Area Planning Commission need the support of the Sacramento City Council by the end of February, 1980. SRAPC is scheduled to adopt their Five-Year TIP during March. This will be SRAPC's final action for the 1980-81 fiscal year program, of which this project is a part.

Caltrans has prepared an "Executive Summary of a Feasibility Report for Increasing Efficiency of People Movement in the Route 50 Corridor." Twenty-five copies are attached

for distribution to the Council and key staff. Also attached are four copies of the main feasibility report dated August, 1978. Inserted in that report is a Caltrans letter dated December 18, 1978, that restates questions by your Department of Public Works staff and the following responses by Caltrans. These reports show in more detail the proposed project, identification of alternatives, the benefits and disbenefits of each alternate, and the reasons for recommending this proposed project.

We would like to discuss in more detail Recommendation 5c, shown on Page 6 of the Executive Summary. Caltrans proposes to enter into agreement with the City of Sacramento to "Pay the City for alterations to city streets made necessary by the Project." This is a commitment that would finance city street projects made necessary by any shifts in travel patterns that might occur with implementation of metering. It is not intended as a commitment to finance new capacity projects to accommodate continued growth of corridor traffic demand.

Another type of question that has arisen in the past is the relationship between this proposed project and proposed light rail in the Route 50 Folsom Corridor. Caltrans believes the two proposals are fully compatible and that the ramp metering project should proceed even if the decision is made to construct light rail in the corridor. First, the ramp control project would be in place and begin to generate benefits years before a light rail line could be operational. Second, because the travel patterns served by Route 50 are diverse, we expect that light rail can help absorb the growth in corridor travel demand, but will not eliminate the need for control of freeway congestion.

The Sacramento Regional Transit District has recognized the benefits this project will give to their riders by reducing travel time, increasing reliability, and expediting subsequent school children-oriented runs. They have taken a formal Board position of support for this project.

We also understand in last year's cycle of the SRAPC TIP adoption process that the Sacramento Board of Supervisors also supported inclusion of this project.

In summary, Caltrans recommends implementation of the described ramp control project in 1981. It is requested that Caltrans be granted an opportunity to appear before the City Council early in February, 1980. We intend to seek a commitment of support from the Council and approval to enter into negotiations for an agreement necessary to implement this project. We are hopeful that Council action would be taken by no later than March 1, 1980.

Thank you for your consideration.

Very truly yours,

Leo J. Trombatore

LEO J. TROMBATORE
District Director of Transportation

Attachs.

CITY OF SACRAMENTO

OFFICE OF THE CITY CLERK
915 I STREET
CITY HALL ROOM 203
SACRAMENTO, CALIFORNIA 95814
TELEPHONE (916) 449-5426

LORRAINE MAGANA
CITY CLERK
HUBERT F. ROGERS
CHIEF DEPUTY CITY CLERK

December 19, 1979

Leo J. Trombatore
District Director
of Transportation
P. O. Box 911
Marysville, CA 95901

Dear Mr. Trombatore:

I have received your request for an appearance before the Sacramento City Council to discuss On Ramp Metering on Route 50.

You have been scheduled for February 5, 1980, 7:30 p.m., Council Chamber, 2nd Floor, City Hall, 915 I Street, Sacramento, CA. If you should have any problem with this date, please let me know.

Sincerely,

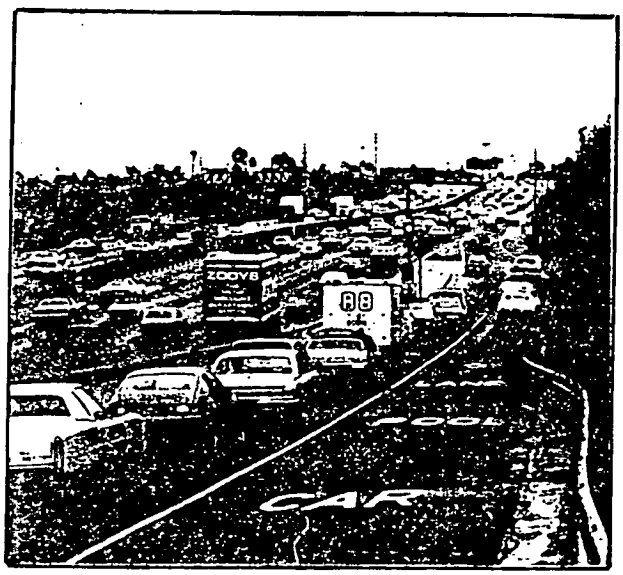
Lorraine Magana
City Clerk

LM:l

cc: Engineering

EXECUTIVE SUMMARY

FEASIBILITY REPORT
FOR
INCREASING EFFICIENCY OF PEOPLE MOVEMENT IN THE ROUTE 50 CORRIDOR
IN SACRAMENTO



Caltrans

LEO J. TROMBATORE, District Director
District 03, Marysville
May, 1979

INCREASING THE EFFICIENCY OF PEOPLE MOVEMENT IN THE ROUTE 50 CORRIDOR IN SACRAMENTO

Executive Summary

Capacity and congestion problems are occurring at various locations on the Sacramento transportation network during commute periods. Route 50 between Route 80 and Watt Avenue has experienced rapid growth of commute traffic over the past six years. Congestion is currently occurring about two days a week during the morning westbound commute period. Continued development of the area served by this Route indicates significant increase in congestion in the near future.

Congested traffic conditions increase air pollution and energy consumption over free flowing conditions. The congestion is the result of a comparatively small excess of demand over capacity for a short period of time during the morning commute period.

Projects that reduce congestion can improve air quality so long as significant additional auto travel is not induced. Approval for projects in Sacramento will be hard to obtain if any air quality degradation could result from the project. This is particularly true during the next eight years during which the area will apparently remain an Air Quality Nonattainment area.

Route 50 has been serving as an alternate for those commuters diverted by congestion from Route 80 and various city streets. Increased usage of Route 50 with attendant congestion will impact the rest of the network that serves the eastern portion of the Sacramento metropolitan area.

Three preliminary factors contribute to commute period congestion on Route 50.

1. Job concentration - location and work hours.

   The central business district with its large number of public offices concentrates commuters both by location and time as there is little shift work in public service. This situation creates a high volume of vehicles over a comparatively short period of time. This concentration of vehicles combined with all of the other vehicles destined for a multitude of locations creates very high volumes for relatively short periods during the peak hours.

2. Land Use

   Suburban development has created a low density residential environment which results in concentration of commuters from a widespread area to downtown with access limited by relatively few river crossings.

3. Vehicle Occupancy

The residential location and density pointed out above, coupled with the average person's desire to drive alone, has produced vehicle occupancy at about 1.25 persons per vehicle during commuter periods.

In addition to the delay, tension and frustration to the people caught in the traffic jam, congestion on a freeway has two major impacts on traffic operations.

1. Studies on California freeways show that the accident rate about triples when conditions change from free flow to congestion.

2. Congestion creates a reservoir of vehicles which supplies a continuous flow to a bottleneck, allowing maximum flow through the bottleneck. (A bottleneck is a constriction which limits traffic flow to less than that approaching the constriction.) If congestion formed at the bottleneck extends back through interchanges upstream, the capacity on the freeway at those interchanges is reduced. The result can be a net reduction in total travel on the freeway from what it would be under completely free flowing conditions.

Caltrans has investigated the feasibility of a number of actions on Route 50 to improve westbound morning commute traffic between Stockton Boulevard and Watt Avenue. These actions have been compared to doing nothing to alleviate the congestion.

1. Ramp meters on westbound freeway on-ramps, provide bypass lanes for high-occupancy vehicles at selected ramps, and construct an additional lane from 59th Street to Stockton Boulevard.

This alternate is estimated to cost approximately $525,000, could be constructed in 1981, and would make it possible to decrease congestion on the freeway. Funds for this proposal are included in the 5-Year Caltrans proposed State Transportation Improvement Program for the 1980/81 Fiscal Year. A ramp meter consists of a signal light on an on-ramp to control the rate at which vehicles enter the freeway. High occupancy vehicles are allowed to bypass the signal at selected ramps. Higher vehicle occupancy would be encouraged and travel time and safety would be improved due to free flow. Decreased congestion and higher vehicle occupancy is expected to increase person throughput on the freeway. This project would be fully compatible with any other improvements made to the freeway at a later date.

There would be delay ranging from 0 to 5 minutes at the on-ramps for single-occupancy vehicles, with encouragement of some trips that now use the freeway to use city streets. The cost of California Highway Patrol traffic enforcement may increase. There will be no significant increase in city police traffic enforcement.

2. Additional lane in right-shoulder area.

Various methods of providing a fifth lane in the right-shoulder area were considered.

A. Between Stockton Boulevard and 59th Street, an existing paved drainage area can be reconstructed to handle traffic loads. The additional lane supplied by this construction would increase the capacity of the freeway by the number of vehicles leaving the freeway at Stockton Boulevard in addition to reducing the flow restriction caused by the upgrade.

The project will consist of two twelve-foot lanes, three eleven-foot lanes and an eight-foot shoulder. There would be no shoulder at the approach to the Stockton Boulevard off-ramp due to the narrow structure and structure approach. The distance is short and major operational problems are not anticipated due to this lack of shoulder. This reconstruction is recommended by Caltrans in conjunction with ramp metering to improve the flow through the upgrade bottleneck near 41st Street. The $100,000 cost is included in the $525,000 ramp meter estimate.

B. Permissive use of the shoulder as a lane during the peak period is an inexpensive option.

Caltrans' experience indicates that it is difficult to justify eliminating the emergency parking area provided by the shoulder. There is an average of one disabled vehicle for each 25,000 vehicle miles of travel. The disabled vehicle usually parks on the right shoulder. There are severe operational and safety problems when this parking area is not available during peak periods and a vehicle becomes disabled or an accident occurs. The usual result is congestion which slows the response of emergency and law enforcement vehicles from reaching the trouble spot. The use of the shoulder as traveled way is not available when a stalled vehicle blocks the shoulder.

There would be no emergency parking available on the right in two areas between the Route 80 connector route and the 65th Street westbound off-ramp if the 10-foot shoulder was approved for peak hour use as traveled way. These areas are a 2,700-foot section from the Stockton Boulevard on-ramp eastward to the beginning of the 6-foot wide drainage gutter, and an 1,800-foot section across the 65th Street undercrossing ending at the westbound 65th Street off-ramp.

There will be an estimated 6,400 vehicle miles of travel through these sections per day during the peak hour. A disabled vehicle incident could be expected every four days under average conditions. The grade east of Stockton Boulevard appears to be showing a disabled vehicle rate higher than the average.

Due to the loss of the shoulder for emergency use and law enforcement, plus the operational problems at ramp connections, Caltrans does not recommend this option.

C. Widening of the traveled way in order to add the fifth lane with a full shoulder involves added earth fill, widening of structures, relandscaping the embankments, modification of ramps, possible noise barriers, and purchase of right of way. Preliminary estimates indicated that widening on the right would be more expensive than adding lanes in the median. Due to the higher cost, widening on the right was not given further consideration.

3. Additional lane in median.

A lane can be constructed in each direction in the median for $3,000,000 from Route 80 to 65th Street and $2,900,000 from 65th Street to Watt Avenue. Planning, design, environmental clearance, and other necessary preparation would mean that earliest construction would be no sooner than about 1983. Necessary financing would have to be programmed by the Sacramento Regional Area Planning Commission, most likely by deferring or eliminating some other highway improvements within the Region.

This alternate would increase the capacity of the freeway up to 1,800 vehicles per hour each direction through the project area. This would take care of about 3 years' traffic growth. It is expected that the added traffic volume would increase the problem at the Routes 50/80/99 westbound merge area to the 16th Street off-ramp. The addition of the median lane for general traffic use would preclude the construction of an exclusive bus way or high-occupancy vehicle lane in the median at a later date.

4. Separate bus - high-occupancy vehicle lane in median.

A two-lane busway separated from other traffic by concrete barriers can be constructed in the median from the Route 80 connector to 65th Street for $3,400,000 and from 65th Street to Watt Avenue for $3,200,000.

4. (Cont'd)

The Regional Transit bus fleet size and usage of the corridor does not warrant construction at this time. Present routing requires all buses on Route 50 to stop at 65th Street for connections with north-south routes. The added exit and entry at 65th Street lowers the benefit of the through travel offered by the exclusive median lane. Buses entering the left-lane near the Routes 50/80/99 Interchange would have to cross four or more lanes to exit at 16th Street or 10th Street.

Growth of Regional Transit usage could make this alternate very desirable in the future, possibly with an extension of this lane to 10th Street, albeit at a considerably additional expense.

5. Construct the I-80 Bypass

Like major widening, this is a long-range alternative. At any given time, there is a balance in traffic flow between the northeast and southwest on the various freeway and surface street routes. Anything that improves traffic flow along one route will relieve congestion on other routes serving the northeast-southwest travel in the area. Conversely, anything that impedes flow on one of those routes will increase congestion on the other routes. Therefore, construction of the I-80 Bypass would relieve congestion on US-50 and such places as Fair Oaks and Howe and Fair Oaks and Watt. While there are many factors to consider in the I-80 Bypass matter, its effects on US-50 should be kept in mind.

RECOMMENDATION

A. The following actions are recommended as environmentally and financially feasible to relieve congestion and encourage high-occupancy vehicle usage on Route 50 in the short term.

1. Install ramp meters on all westbound access ramps from Watt Avenue to Stockton Boulevard inclusive.

2. Install bypass lanes for high-occupancy vehicles on selected ramps. Watt Avenue southbound on westbound ramp, Howe Avenue on-loop, and 59th Street on-ramp offer the best benefits.

3. Reconstruct paved gutter and sign and stripe the westbound right shoulder between 59th Street on-ramp and Stockton Boulevard off-ramp for use as a fifth lane. Restripe two of the existing lanes to 11-foot width.

4. Restrict the shoulder lane on Route 50 through the Watt Avenue Interchange to Watt Avenue traffic only.

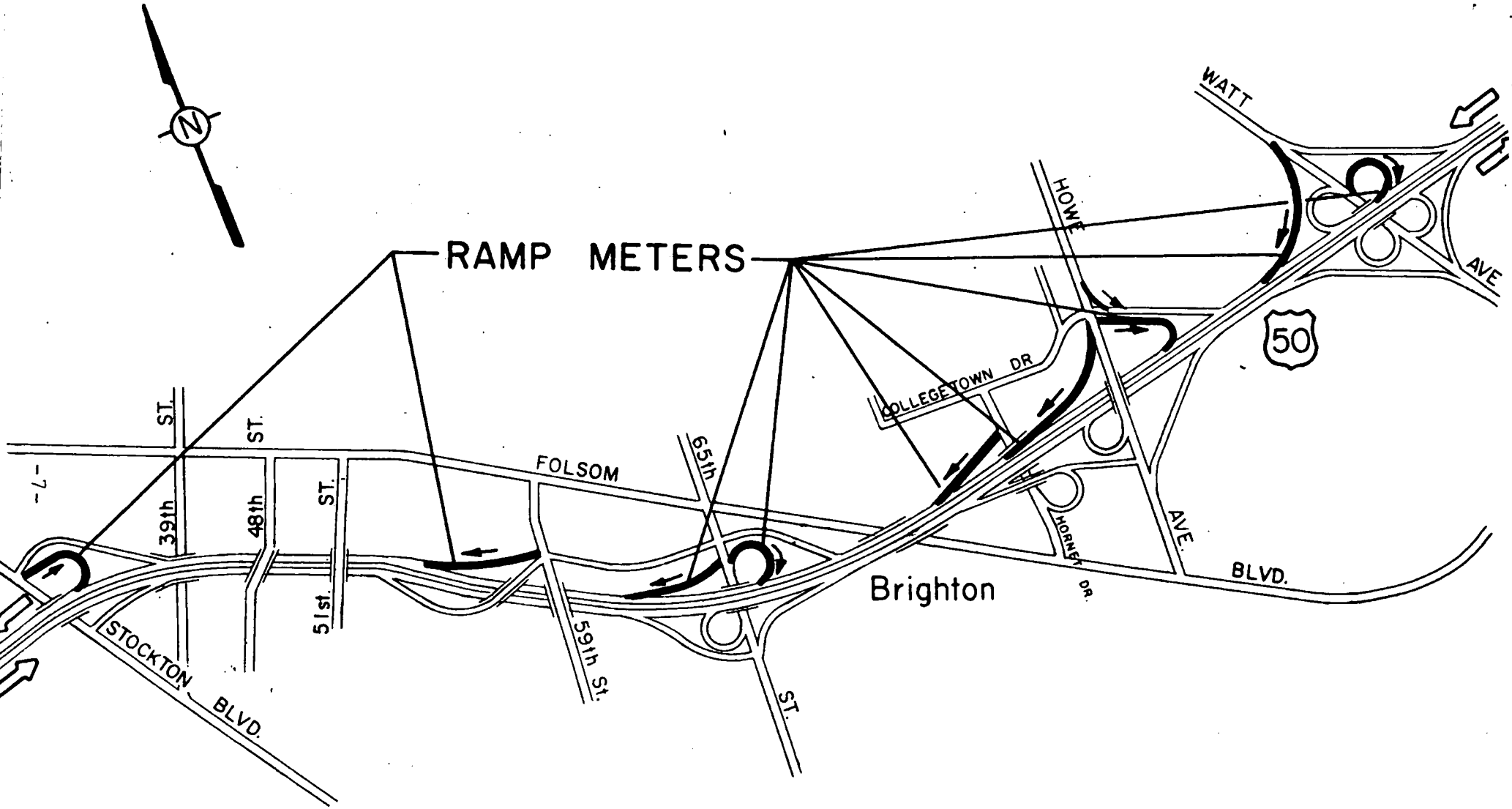
5. The State will enter into an agreement with the City providing for the State to:

   (a) Consult with the City on initial settings of the ramp signals and all further adjustments to the signals.
   (b) Make complete before and after traffic counts, delay studies, and queue length studies for initial installation. Traffic counts, queue length and delay studies, as necessary, will be made to support ramp signal timing adjustments.
   (c) Pay the City for alterations to city streets made necessary by the Project.

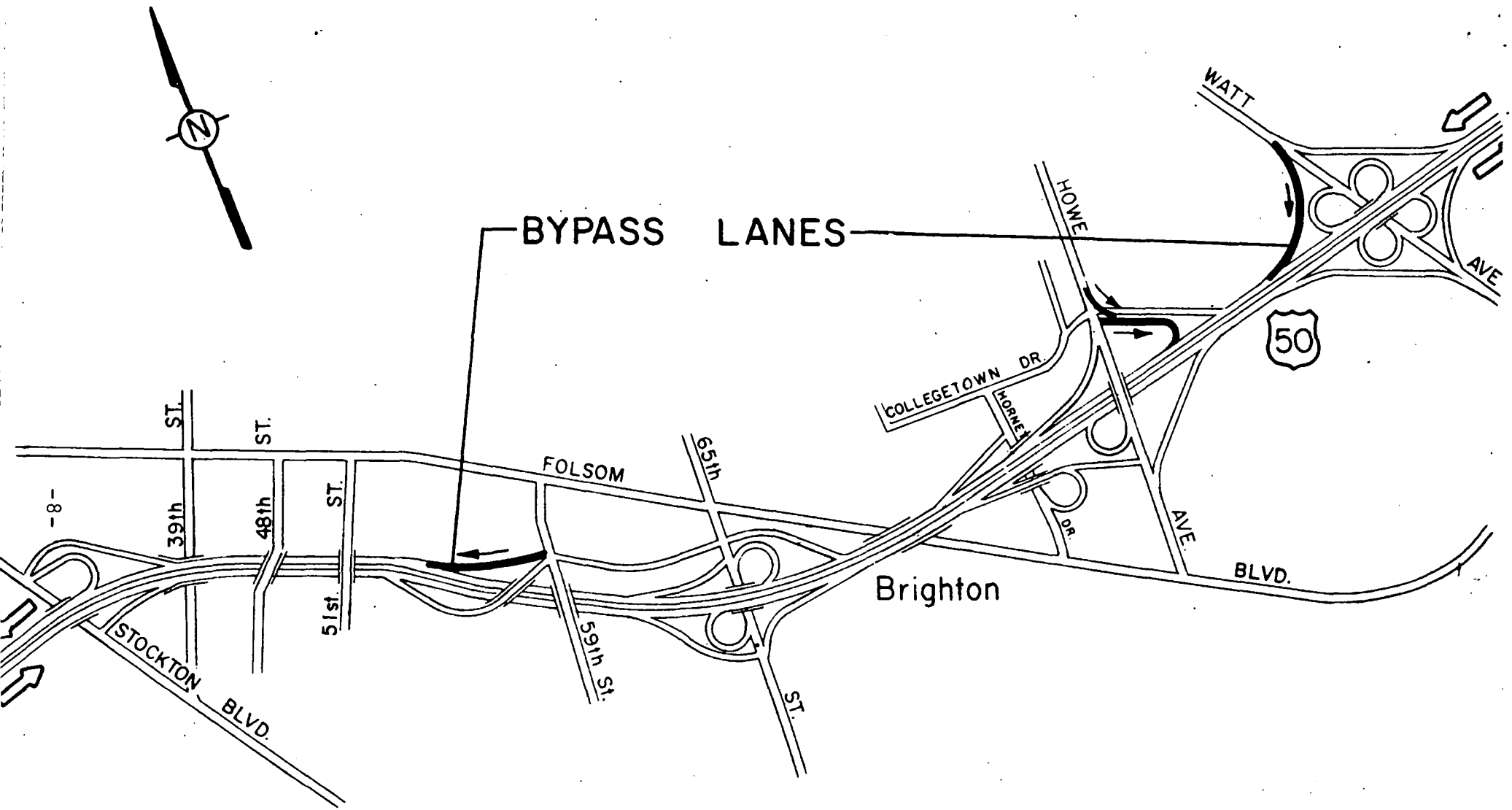
B. The following benefits emphasize the Caltrans recommendation that ramp metering together with a fifth lane added between Stockton Boulevard and 59th Street be implemented ahead of other alternates.

1. Relatively low cost.
2. Improved level of service.
3. Early clean air benefits.
4. Leaves options open for adding capacity later.
5. Encourages increased vehicle occupancy.

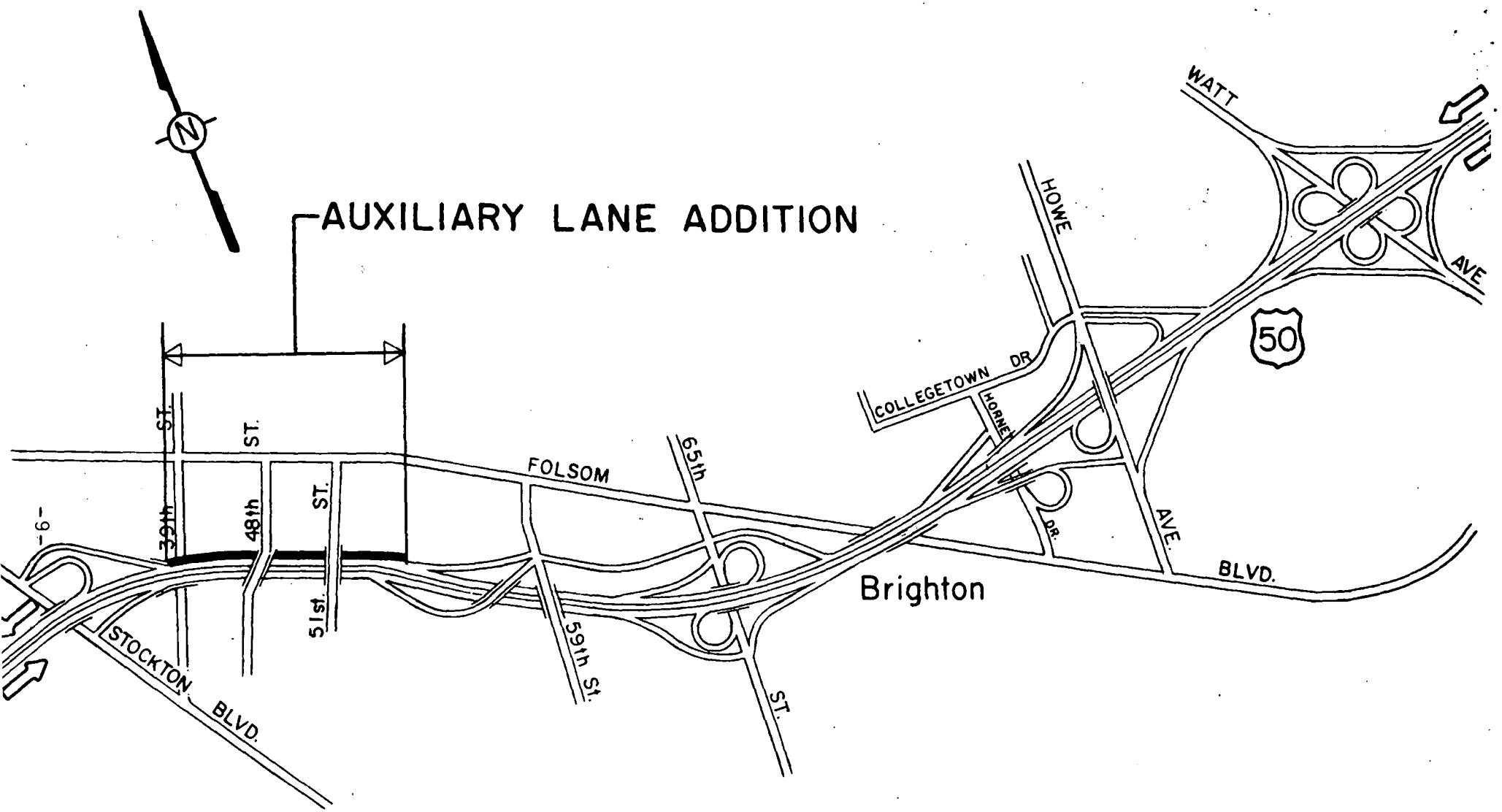
Present planning foresees clean air standards being approached or met by 1987. The recommended alternate would provide some clean air benefits in the interim. When clean air standards are attained, added lanes in the median could be evaluated as an option that would still be available.



Ramps Proposed for Control



Location of Proposed Ramp Meter Bypass Lanes



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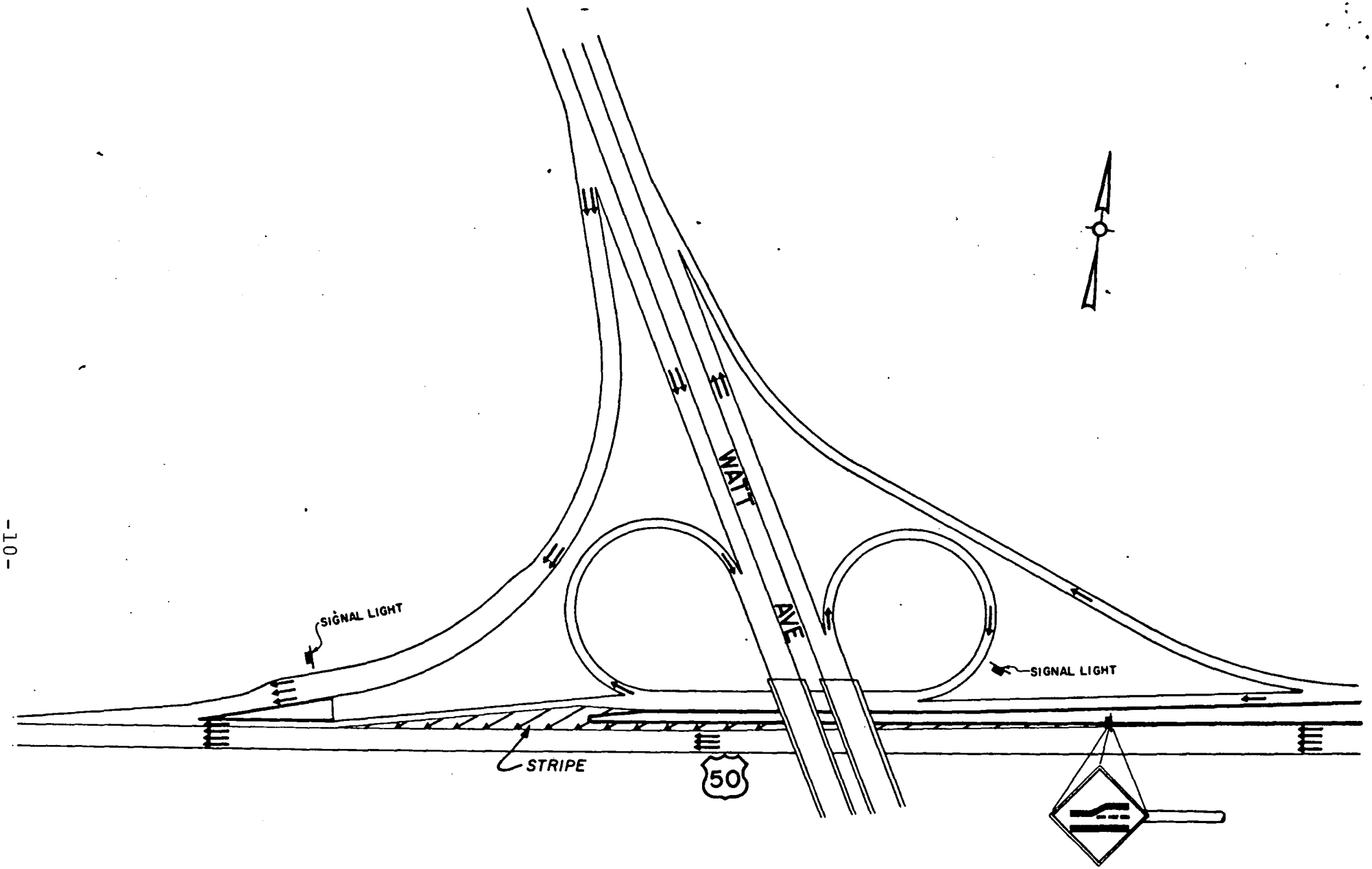
Proposed Westbound 5th Lane



WESTBOUND
ROUTE 50 / WATT AVE. INTERCHANGE
PROPOSED RAMP CONTROL & LANE CLOSURE

NOT TO SCALE

January 28, 1980

LEO J. TROMBATORE, District Director
California Department of Transportation
Marysville - District 3

Media Information: Alice Wygant
(916)674-4571

Released ↑

Transportation Department
to Present Freeway Traffic Control
Plan to Sacramento City Council

Traffic signal lights on the westbound on-ramps to Highway 50 in Sacramento between Watt Avenue and Stockton Boulevard will be proposed at the Tuesday, February 5 evening meeting of the Sacramento City Council, according to Leo J. Trombatore. "Studies have shown that controlling freeway access by this means improves safety and reduces congestion on the freeway," Trombatore said.

The department made a study of commuter traffic on inbound Route 50 in May 1977. Information obtained from questionnaires was used to help determine commuter travel patterns. There was a high rate of return on the question forms, both those handed to motorists and those mailed to homes. In addition freeway users participated in several workshops in Sacramento to help plan solutions for increasing congestion on U.S. 50.

Average capacity for each freeway lanes is about 2000 vehicles an hour or one every 1.8 seconds.

Signals planned at the on-ramps insure that users do not exceed this flow rate causing stop-and-go conditions on the freeway. There are more than 400 such on-ramp lights on freeways around the state. At the same time freeway traffic is flowing faster and the several-seconds waiting time can often be made up in travel time, Trombatore said.

(more)

The ramp traffic lights will be a metering device installed at nine locations, Watt to Stockton Boulevard. In addition, there will be three on-ramps reconstructed for addition of a second lane to allow carpools and busses free access. An extra lane will be built along the shoulder of the freeway between 59th Street and Stockton Boulevard.

The City Council will be given a detailed description, benefits and disbenefits of the project and the conditions that will happen without the project.

If the council votes to go ahead with the project including the on-ramp lights, the Department of Transportation could develop it by 1981 at a cost of just over half a million dollars.

# # #

Calif: Department of Transportation
674-4543

2/5/80

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PRESS FACT SHEET

I. The Project

Install traffic signal lights on nine westbound on-ramps to U.S. 50 in Sacramento: at Stockton Boulevard, one ramp; 59th Street, one ramp; 65th Street, two ramps; Hornet Drive, one ramp; Howe Avenue, two ramps; and Watt Avenue, two ramps.

II. Construction

One-lane ramps will be converted to two-lane ramps at these locations: 59th Street and Howe Avenue. The on-ramp from southbound Watt Avenue will be widened to three on-lanes.

A fifth freeway lane will be constructed between 59th Street and Stockton Boulevard.

III. Purpose of Project

* Reduce freeway congestion
* Improve Safety
* Improve air quality
* Conserve energy

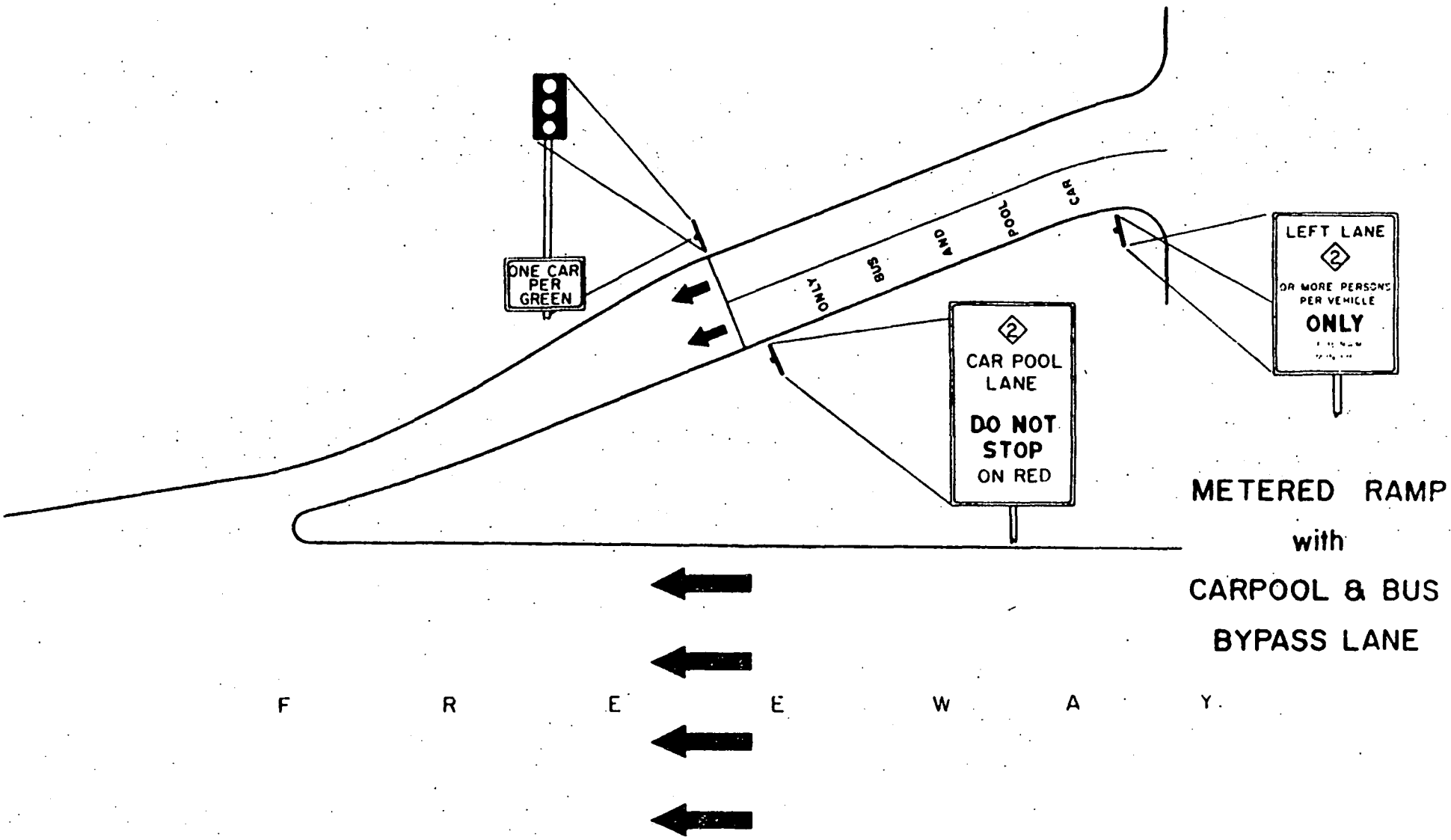
IV. Operation of Project

Traffic signal lights will regulate the flow of traffic onto the freeway (see release).

Single-occupancy vehicles could be delayed in morning peak periods.

V. Cost of Project

Estimated cost: $634,000.



METERED RAMP
with
CARPOOL & BUS
BYPASS LANE

CITY OF SACRAMENTO

OFFICE OF THE CITY CLERK
915 I STREET
CITY HALL ROOM 203
SACRAMENTO, CALIFORNIA 95814
TELEPHONE (916) 449-5426

LORRAINE MAGANA
CITY CLERK

MEMORANDUM

TO: PLANNING AND COMMUNITY DEVELOPMENT COMMITTEE

FROM: HARRY O'HAGIN, DEPUTY CITY CLERK

SUBJECT: REFERRAL OF ITEM NO. 17, AGENDA OF FEBRUARY 5, 1980

DATE: FEBRUARY 6, 1980

Pursuant to Council action, the following subject matter is referred to your committee for hearing, report and recommendation: Comn., State of CA Dept of Transportation re: Ramp metering on Route 50. (Come back to Council on 3-4-80).

cc: City Manager
City Engineer
Traffic Engineer
Art Gee (Planning Dept.)