C/CAG

City/County Association of Governments of San Mateo County

VTA

Santa Clara Valley Transportation Authority

TA

San Mateo County Transportation Authority

2020 Peninsula Gateway Corridor Study

Policy Advisory Committee

DATE:	Wednesday, February 9, 2005
TIME:	4:00 P.M
PLACE:	Menlo Park City Hall 1st Floor Council Conference Room 701 Laurel Street Menlo Park, CA

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1.0 Introductions

2.0 Review and discussion of Draft List of Improvement Alternatives (complete universe of projects), and projects for study under the contract with Kimley-Horn.

3.0 Schedule next meeting for March 9, 2005.

4.0 Adjourn.

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Date: February 9, 2005

To: 2020 PAC Members

From: Walter Martone

Subject: DRAFT LIST OF IMPROVEMENT ALTERNATIVES

The purpose of the meeting on February 9th will be to review the list of potential improvement alternatives that was developed by Kimley-Horn (the consultants for this project) and decide:

- Does the list contain the complete universe of projects for this Study?
- Which projects should be analyzed further as part of the 2020 Study, as part of work being done by Caltrans, as an independent study, as part of the next steps in this project? Which projects have already been studied by other agencies, and therefore this information is already available?

One of the most important goals of the 2020 Study is to compile a complete universe of projects that have the potential for addressing the severe congestion, community disruption, economic, and environmental problems in the study area. A number of community meetings plus the added expertise of Kimley-Horn, resulted in over 300 ideas for potential projects being identified. These ideas were subsequently formulated into 70 improvement projects that could be analyzed to determine the impacts in the study area. Funding under this Study will be sufficient for 8 to 10 packages of improvements to be studied in sufficient detail to provide the information contained in the matrix identified in #2 on the next page (and attached), under the current contract with Kimley-Horn.

This detailed information on a limited number of alternatives may not be sufficient to prepare

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policy makers to select a package of improvements for implementation. Therefore we anticipate that a number of additional studies will also be conducted to supplement the information produced under the current study. There will also be information from other sources that can be used to augment this comprehensive review of the study area. These include existing studies conducted by the VTA, the SMCTA, the San Francisquito Creek Joint Powers Authority, and future studies that will be conducted by Caltrans. The additional studies will likely be commissioned after the existing information is reviewed and the analysis of the 8 to 10 Packages of Alternatives is completed by Kimley-Horn. Therefore staff is recommending that the 70 improvement ideas be organized into categories that will determine how and when the analysis will be conducted. The categories include:

- 2020 = 11 alternatives are recommended to be included in this category to be analyzed as part of the contract with Kimley-Horn. Kimley-Horn has taken these alternatives plus the 17 to be studied by Caltrans, and combined them into 9 Packages of Alternatives that can be studied. The Alternative Package numbers are noted under 2020 and Caltrans.
- Caltrans = 17 alternatives are recommended to be included in this category to be analyzed by Caltrans. These alternatives have been grouped into Alternative Packages 4 through 7.
- Existing = 5 alternatives have already been studied by other agencies. Copies of these reports will be secured and reviewed.
- Next steps = 37 alternatives will be considered for additional study in the next phase of the project after the work currently contracted to Kimley-Horn has been completed.
- Independent study = At this time no projects have been identified for an independent study. It is likely that a few of the very large projects (i.e. building elevated lanes on Route 101, bored tunnel under East Palo Alto, etc.) could require a special review because of the complexity and enormity of the project.

These categories have been used in #3 below and #4 on the next page. Both of these items are attachments to this cover memo.

In order to assist you with this review, the following items are being provided:

1. A flow chart that shows at this point in the study process we are.
2. As requested, a chart that lists all of the factors that will be used to present the Packages of Alternatives that are selected to be studied further as part of the 2020 Study.
3. A chart that lists all of the improvement options that been identified through the public input process and a review of the study area by the consultants. This chart lists the alternatives identified with letter codes so that there is no priority order implied. The "Relative Cost Meter" is a very rough indication of the price range for this type of project. Kimley-Horn will provide information on the range of costs for each of the projects at the meeting on February 9th.

   The "Implementation Horizon" is a rough indication of how long it might take to implement the project.

   a. completed in less than 5 years (short)

b. 6 to 10 years (medium)
c. over 10 years (long).

"To be studied as part of" represents the recommendations for the categories under which the alternative will be studied. The alternatives that are recommended to be studied by Kimley-Horn under the current contract or by Caltrans have been shaded for easy reference.

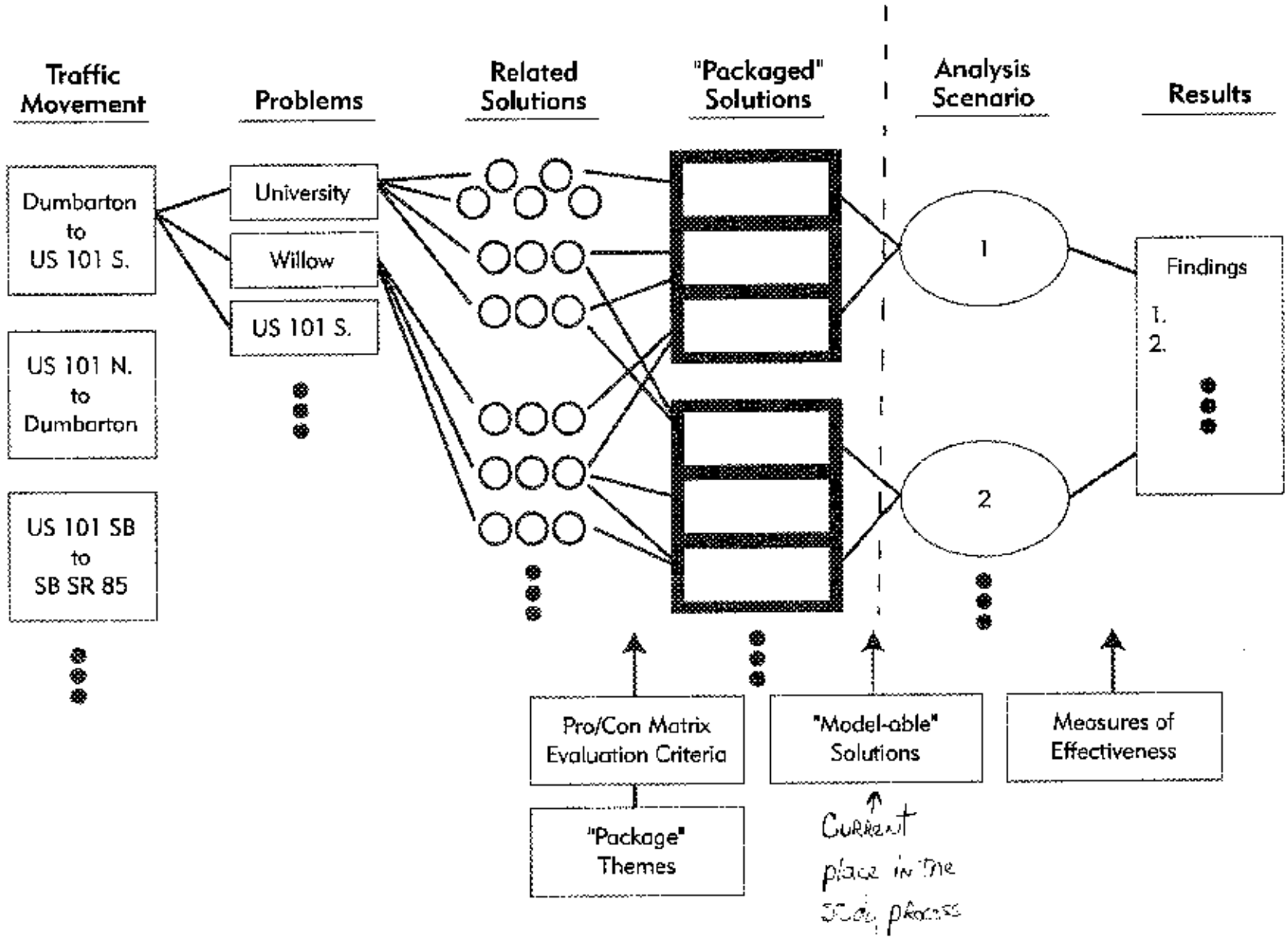
The last column provides the rationale for the recommended study category. This was based on the technical knowledge of the TAC that these particular projects may have less data available from other sources and additional data is needed to evaluate the project's merits or problems. The determination as to whether a project is studied under the contract with Kimley-Horn, Caltrans, or in another category, does not give a priority to the project. Any prioritization will be done as part of the next steps process and not as part of this study.

4. A map that shows the zones in the C/CAG Travel Forecasting Model that correspond to the study area will be provided at the February 9th meeting.

5. Kimley-Horn will also be presenting at the February 9th meeting, some of the travel pattern information that was requested.

Please review the information on the enclosed materials and note any major issues or concerns that we should discuss at the meeting on February 9th. Due to the amount of information that needs to be reviewed, it is recommended that the Committee focus its attention first on the improvements that have been shaded. We may need additional meetings in order to get through the entire list.

EXAMPLE SOLUTIONS DEVELOPMENT PROCESS



PRESENTATION OF ALTERNATIVES

Review Measures	Alternative 1 Description	Alternative 2 Description	Alternative 3 Description	Alternative 4 Description	Alternative 5 Description	Alternative 6 Description
Construction						
*Cost						
*Right of Way						
*Displacement/Relocation						
*Utilities						
*Non-Standard Features						
*Complexity with respect To traffic management						
Traffic Operations						
*System Performance						
- Average speed						
- Average delay						
- Route travel times						
- Duration of congestion						
- Vehicle hours of delay						
- Vehicle miles traveled						
- Emissions						
*Spot Performance						
- Level of service						
- Average control delay						
- Commute traffic on local residential streets						
- Queues (length, number blocking)						
- Travel time						
- Total stops						
Environmental						
* Land use						
* Geology						
* Hydrology						
* Biology						
* Cultural						
* Hazardous materials						
* Noise						
* Visual						
Other						
* Equity (environmental justice)						
* Neighborhood comfort/ feel						
* Creation of barriers within/between communities						
* Influence on non-vehicular travel						

POTENTIAL IMPROVEMENT ALTERNATIVES TO ANALYZE IN 2020 STUDY

ID Code	Alternative	Relative Cost Meter	Implementation Horizon	To be studied as part of	Justification
	Highway 101				
A	Auxiliary Lanes from Embarcadero to Shoreline • Include flood control enhancements at creek crossings	Medium	Long	2020 Alt 1	Strong potential for congestion relief on Rt. 101
B	Reconstruct Embarcadero/ Oregon interchange	High	Long	Next steps	
C	Reconstruct San Antonio interchange and eliminate southbound on ramp at Charleston	Medium	Long	2020 Alt 1	This project ties in and supports the VTA's Rt. 85/101 project
D1	Widen freeway to 10 lanes (County Line to Shoreline)	Very high	Long	Next steps	Right-of-way makes this difficult
D2	Widen freeway to 10 lanes + Aux Lanes (County Line to Shoreline)	Very high	Long	Next steps	Right-of-way makes this difficult
E	Widen freeway to 10 lanes + Aux Lanes (Whipple to County Line)	Very high	Long	Existing study	Right-of-way makes this difficult
F	Build elevated lanes above 101 from Woodside Road to 85/101 North project conform • Consider mixed-flow lanes or HOV/HOT lanes • NOTE: similar project profiled in Civil Engineering in June 2004	Very high	Long	2020 Alt 2	Only feasible way to significantly increase Rt 101 capacity
G	Improve local access across 101	Low to Medium High	Long	Next steps	Limited potential for congestion relief in corridor and major right of way issues
	Dumbarton Bridge to Highway 101				
H	Grade separations at Bayfront/Willow and Bayfront/University	Medium High	Long	2020 Alt 3	Potential for significant improvement to the operation of Bayfront Expressway

I	Extend Bayfront Expressway to Woodside Road	High	Long	Existing study	SMTA has already studied this option.
J	Construct direct flyover connection between Bayfront/ Marsh and 101 north of Marsh	Medium High	Long	Next steps	Significant right of way issues and does not appear to significantly improve the current condition
K	Elevated Direct Connections between Bayfront and 101 along Willow Road corridor • SEE Improvement code CC	Very high	Long	Caltrans Included in CC	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
L	Elevated roadway along Dumbarton RR corridor between University and 101	Very high	Long	Next steps	
M	New 101 South connection through East Palo Alto (Expressway south of University)	Very high	Long	Next steps	Major disruption to an existing community. Right of way would require the taking of a significant number of homes and businesses
N	New 101 South connection skirting East Palo Alto (Expressway/viaduct along edge of bay) • Direct connections at Bayfront Expressway (east of University) and Highway 101 (near Embarcadero/Oregon interchange) • Bridges over Hetch-Hetchy pipelines and Dumbarton RR • Skirt Ravenswood Open Space Preserve, Baylands, and Palo Alto Golf Course • 2- 4 lane viaduct, with piers designed to limit environmental impacts	Very high	Long	Existing Study	Potentially severe environmental impacts. Community consensus is highly unlikely

	• Consider HOV-only or HOT-only usage				
O	Tunnel beneath East Palo Alto • University Avenue to Highway 101(near Embarcadero/Oregon interchange) • Beneath Ravenswood Industrial Area and residential neighborhoods south of University	Very high	Long	Next steps	Potential for major disruptions in the community
P	San Francisquito Creek Diversion Structure and Roadway (dual use tunnel facility)	High	Long	Existing study	Prior study of flood control options for San Francisquito Creek will be reviewed.
P1	Route 101 flood control project potentially down Willow Road.		Long	Existing study	To prevent flooding on Route 101. Considered as part of auxiliary lane project (see number 1). Review study already done by the San Francisquito Creek JPA.
Willow Road					
Q	Signal Timing during peak travel periods • Consider adaptive or responsive operation • Install vehicle detection	Very Low	Short	Caltrans Alt 4	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
R	Prohibit left turns during peak travel periods	Very Low	Short	Caltrans Alt 4	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to

					the project
S	Prohibit local cross traffic during peak travel periods	Very Low	Short	Caltrans Alt 4	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
T	Exit/Entrance Right Turn pockets on Willow	Very Low	Medium	Caltrans Alt 4	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
U	Set back curb line one lane width from traveled way at driveways	Low	Medium	Caltrans Alt 4	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
V	Eliminate driveway access on Willow	Low	Short	Next steps	Limited potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
W	Eliminate selected signalized intersections: • Newbridge St • Ivy Dr • Hamilton Ave	Low	Short	Next steps	Limited potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project

X	Eliminate signalized intersections and allow right turns only on/off Willow	Low	Short	Next steps	Limited potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
Y	Eliminate signalized intersections and prohibit any access from local streets	Low	Short	Next steps	Limited potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
Z	Widen Willow one lane each direction	High	Medium	Next steps	Potential significant right of way issues. Caltrans is willing to study this option at no added cost to the project
AA	Grade separations at selected intersections: • Newbridge St • Ivy Dr • Hamilton Ave	Very High	Long	Next steps	May not be feasible given proximity and clearance issues. Caltrans is willing to study this option at no added cost to the project
BB	Pedestrian over crossing at Ivy Dr (near Mid-Peninsula High School)	Medium	Medium	Caltrans All 5	Potential for significant improvement in traffic flow during school start and end times. Caltrans is willing to study this option at no added cost to

					the project
CC1	Elevated viaduct expressway structure • 2 lanes in each direction	Very high	Long	Caltrans Alt 6	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
CC2	Elevated viaduct expressway structure • 1 lane in each direction	Very high	Long	Caltrans Alt 6	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
CC3	Elevated viaduct expressway structure • Reversible 2 lanes	Very high	Long	Caltrans Alt 6	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
CC4	Elevated viaduct expressway structure • 3 lanes with reversible middle lane	Very high	Long	Caltrans Alt 6	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
DD1	Depressed expressway: • 2 lanes each direction	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project

DD2	Depressed expressway: • 1 lane each direction	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
DD3	Depressed expressway: • Reversible 2 lanes	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
DD4	Depressed expressway: • 3 lanes with reversible middle lane	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
EE	Grade separations at all intersections (over crossings or under crossings)	Very high	Long	Next Steps	May not be feasible given proximity and clearance issues. Caltrans is willing to study this option at no added cost to the project
FF	Tunnel Expressway (maintain existing facility at grade)	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project

GG	Modified depressed Expressway (surface frontage roads cantilevered inboard to minimize frontage impacts)	Very high	Long	Caltrans Alt 7	Potential for significant improvement in traffic flow. Caltrans is willing to study this option at no added cost to the project
University Avenue					
HH	Signal Timing during peak travel periods • Consider adaptive or responsive operation • Install vehicle detection	Very low	Short	2020 Alt 8	Potential for significant improvement in traffic flow.
II	Prohibit left turns during peak travel periods	Very low	Short	Next steps	Creates a barrier dividing a downtown and disrupting commerce during commute periods
JJ	Prohibit local cross traffic during peak travel periods	Very low	Short	Next steps	Creates a barrier dividing a downtown and disrupting commerce during commute periods
KK	Entrance/Exit Right Turn pockets on University	Low	Short	Next steps	Refer idea to City of EPA for further consideration.
LL	Set back curb line one lane width from traveled way at driveways	Low	Medium	Next steps	Right of way restrictions would likely have a major impact on businesses in the corridor
MM	Eliminate driveway access on University	Medium	Short	Next steps	Limiting access to retain businesses would disrupt commerce in the City

NN	Eliminate selected signalized intersections: • Bell • Runnymeade • Kavanaugh	Low	Short	Next steps	Creates a barrier dividing a downtown and disrupting commerce during commute periods
OO	Eliminate signalized intersections and allow right turns only on/off University	Low	Short	Next steps	Creates a barrier dividing a downtown and disrupting commerce during commute periods
PP	Eliminate signalized intersections and prohibit any access from local streets	Low	Short	Next steps	Creates a barrier dividing a downtown and disrupting commerce during commute periods
QQ	Widen University one lane each direction	High	High	Next steps	Right of way restrictions would likely have a major impact on businesses in the corridor
RR	Grade separations at selected intersections: • Donohoe • Bay	High	Long	Next steps	
SS1	Elevated expressway/viaduct along University corridor • 2 lanes each direction	Very high	Long	Next steps	Elevated structure would divide a downtown area
SS2	Elevated viaduct expressway structure • 1 lane in each direction	Very high	Long	Next steps	Elevated structure would divide a downtown area
SS3	Elevated viaduct expressway structure • Reversible 2 lanes	Very high	Long	Next steps	Elevated structure would divide a downtown area
SS4	Elevated viaduct expressway structure • 3 lanes with reversible middle lane	Very high	Long	Next steps	Elevated structure would divide a downtown area

TT1	Depressed expressway: • 2 lanes each direction	Very High	Long	2020 Alt 9	Potential for substantial improvement in through traffic without impeding movement in the downtown area
TT2	Depressed expressway: • 1 lane each direction	Very high	Long	2020 Alt 9	Potential for substantial improvement in through traffic without impeding movement in the downtown area
TT3	Depressed expressway: • Reversible 2 lanes	Very high	Long	2020 Alt 9	Potential for substantial improvement in through traffic without impeding movement in the downtown area
TT4	Depressed expressway: • 3 lanes with reversible middle lane	Very high	Long	2020 Alt 9	Potential for substantial improvement in through traffic without impeding movement in the downtown area
UU	Grade separations at all intersections (over crossings or under crossings)	Very high	Long	Next steps	Elevated structures and limited turning movements would divide a downtown area
VV	Tunnel Expressway, (maintain existing facility at grade)	Very high	Long	Next steps	Tunnel option for Willow would likely provide the same benefit but at reduced cost due to shorter distance

WW	Modified depressed Expressway (surface frontage roads cantilevered inboard to minimize frontage impacts)	Very high	Long	2020 Alt 9	Potential for substantial improvement in through traffic without impeding movement in the downtown area
Complementary ITS Elements (to be included in project definitions as appropriate					
XX	*Install traffic signal interconnect/ Communications infrastructure between Middlefield Road and 101*		Short	Next Steps	Consider further study as part of ITS plan
YY	*Install transit signal priority to support high-patronage bus routes.*		Short	Next Steps	Consider further study as part of ITS plan
ZZ	*Install trailblazers and/or arterial CMS to provide route guidance information*		Short	Next Steps	Consider further study as part of ITS plan
AAA	*Prepare Incident Management and Traveler Information Plan for Corridor*		Short	Next Steps	Consider joint ITS project with VTA.
Other Potential Improvements Noted by Public and Others					
BBB	Study the possible designation of East Bayshore (San Antonio to University) as a reliever route to provide congestion relief and for incident management on Route 101 • Improve operations at intersections • Install directional signage to help keep commuters off residential streets	Low	Short	Next Steps	Potential for diversion of traffic during incidents on 101. Potential as an alternate route for short trips
CCC	Improve 101/University interchange • Construct southbound direct-connect off-ramp • Improve on-off connections for northbound traffic	Medium	Long	2020 Include with Alt 1	Southbound off ramp is a planned "phase 2" feature.
DDD	Define residential traffic management elements that complement high priority capital improvements	Low	Short	Next Steps	These are low cost improve-ments to local streets that complement improvements on the higher volume roads