TO: Commissioner and Alternates  
FROM: Will Travis, Executive Director (415/557-8775 travis@bcdc.ca.gov)  
Steven McAdam, Deputy Director, Chief of Regulatory Services (415/557-8767 stevem@bcdc.ca.gov)  
SUBJECT: Staff Report and Recommendation on the Replacement of the Eastern Span of the San Francisco-Oakland Bay Bridge (For Commission consideration on June 18, 1998)  

Summary and Recommendations:

Over the past year, a Bay Bridge Design Task Force, created by the Metropolitan Transportation Commission (MTC), has been deliberating on the selection of the type of structure that should be used to replace the eastern span of the San Francisco-Oakland Bay Bridge as part of the seismic retrofit of the overall span. The Task Force is composed of seven members of MTC and includes Angelo Siracusa, BCDC's representative on MTC.

The Task Force is assisted by an Engineering and Design Advisory Panel (EDAP), which includes all of the members of BCDC's Design and Engineering Criteria Review Boards. On May 29, 1998, the EDAP recommended to the Task Force that the replacement structure should be a single-tower, self-anchored suspension bridge joined to the East Bay shoreline by a causeway, and that a bicycle and pedestrian path should be provided along the south side of the new bridge. The Task Force is scheduled to vote on EDAP's recommendations on June 22, 1998 and forward its recommendations to the full MTC for consideration on June 24, 1998.

The staff recommends that the Commission: (1) endorse the EDAP recommendations because they adequately address, at this level of design, the issues BCDC will have to consider when Caltrans submits a permit application for the replacement bridge; (2) direct BCDC's representative on the Task Force and MTC to support funding for a bicycle and pedestrian path on the replacement bridge; and (3) offer any other comments or suggestions the Commission finds necessary to assure that the Task Force, MTC and Caltrans will properly consider seismic safety, Bay fill, public access, rail transit, environmental impacts, or other issues which BCDC is mandated to address.

Background:

At BCDC's July 17, 1997 meeting, the staff briefed the Commission on the status of the deliberations of the Bay Bridge Design Task Force and the principal issues of concern to BCDC. The Commission accepted the preliminary conclusions described
below, which were then incorporated into the Bay Bridge Design Task Force’s recommendations to the Metropolitan Transportation Commission. Exhibit 1 is a summary of 17 finance, design and planning recommendations approved by the Task Force at its July 23, 1997 meeting. At MTC’s July 30, 1997 public meeting, the MTC approved the Task Force’s recommendations.

Since the Commission’s last involvement in this project, Caltrans and its project consultant team of T.Y. Lin International, Moffat & Nichol, Fugro West, Earth Mechanics, Inc., Parsons Brinkerhoff, and other supporting consultants, have developed draft “30% bridge design and cost estimates.” This information was presented to the EDAP at a series of meetings which resulted in the alternatives being narrowed to two alternative “signature” types—a single-tower, cable-stayed segment and a single-tower self-anchored suspension segment near the span’s touch down at Yerba Buena Island. The remainder of the span would be an elevated causeway, or “skyway,” in both alternatives (see the attached Executive Summary of the consultants’ report).

At its meetings on April 15, 1998 and May 29, 1998, the EDAP approved the following four recommendations for consideration by the Bay Bridge Design Task Force:

1. The new eastern span should be a single-tower self-anchored suspension bridge.
2. The causeway section of the new eastern span should be constructed of either concrete with a variable depth profile or steel with a constant depth profile, with a minimum span length of 525 feet, except at the Yerba Buena Island transition and Oakland touchdown.
3. The new eastern span should have a single bicycle/pedestrian path on the south side of the eastbound deck, with a width and height (in relation to the deck) adequate to ensure the safety and comfort of path users and protect the views of motorists.
4. The pile caps for the piers supporting the causeway section should be placed above water, but with careful attention to the design.

BCDC Policy Issues

Listed below are the principal policy issues of concern to BCDC, the Commission’s preliminary conclusions, and brief discussions explaining how the Task Force and the MTC incorporated the Commission’s conclusions into their recommendations.

Seismic Safety. Section 66605 (d) of the McAteer-Petris Act requires the Commission to find that any fill project that it approves will be “constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions.”
According to Caltrans, replacing the span offers an opportunity to significantly improve the seismic reliability and greatly increase the useful life of the eastern span of the Bay Bridge. MTC concurred that "a new eastern span will be seismically stronger, less costly to maintain, less disruptive to construct, and potentially more protective of the environment than the retrofit of the existing bridge." Therefore, the EDAP and Bay Bridge Design Task Force recommended replacing the span to "post-earthquake lifeline service" which means that the new bridge will be usable after an earthquake. BCDC preliminarily concurred in this recommendation.

The principle recommendation of the EDAP involves the selection of a single-tower self-anchored suspension bridge as the signature element of the new span. This recommendation is overwhelmingly supported by the members of BCDC's Design and Engineering Criteria Review Boards who serve on the EDAP. It appeared to the EDAP that all four of the alternative designs which were considered would provide post-earthquake lifeline service. Therefore, it appears that Caltrans will be able to design a structure that will meet the requirements of Section 66605(d) of the McAteer-Petris Act, whichever of the four alternative designs is selected.

The single-tower alternatives presented to the EDAP would have better seismic performance than would the double-portal designs. An asymmetrical suspension bridge has design advantages because the tower of the bridge can be placed closer to the bedrock underlying Yerba Buena Island. Therefore, the staff believes EDAP’s final recommendations adequately address BCDC concerns about seismic safety.

Bay Fill. Section 66605 (c) of the McAteer-Petris Act requires the Commission to make a finding that "the water area authorized to be filled" by any project approved by BCDC is "the minimum necessary to achieve the purpose of the fill."

The existing Bay Bridge contains two roadways in a double deck structure with westbound traffic on the top deck and eastbound traffic on the lower deck. This configuration is not as seismically reliable as two parallel roadbeds would be. Moreover, a parallel roadbed configuration would give the bridge a more slender visual profile and would provide eastbound motorists with sweeping views of Oakland, Berkeley and the East Bay hills. Although a replacement structure with parallel roadways would double the amount of the Bay covered by the bridge, the bulk of this coverage would be high above the Bay and cause limited environmental impacts. On balance, it appears that the seismic and visual benefits of a single-deck roadway outweigh the limited environmental benefits of a double-deck roadway. Also, the EDAP concluded that a single deck configuration would be seismically more reliable than a double deck configuration. Therefore, the Commission preliminarily found that it would be better for the replacement span to contain two parallel roadways than to replicate the current double-deck configuration. The Bay Bridge Design Task Force and MTC endorsed EDAP’s position and recommended a single deck configuration.

In addition, a number of alignments for a replacement span were evaluated. They ranged from a far northern alignment which would be built in a sweeping curve to a southern alignment which would be built in a nearly straight line immediately south of the existing bridge. Generally, the more northern the alignment, the
better the views for motorists, the longer the bridge, the more troublesome the un­
derlying geological conditions, and the more fill involved. As a result, the range
of options was narrowed to a near northern alignment and a southern alignment. A southern alignment would have the potential of reducing the amount of space
available for future port development at the Port of Oakland south of the Bay Bridge
toll plaza. This area is reserved as a port priority use area in the San Francisco Bay
Plan and the San Francisco Bay Area Seaport Plan to minimize the need to fill the
Bay for future port development. Therefore, the Commission preliminarily found
that a near northern alignment for the replacement span would be preferable be­
cause a southern alignment could lead to future Bay fill for port development.

MTC concurred with the EDAP's position that a northern alignment is more de­
sirable because it would provide a "gateway to Oakland" and would offer enhanced views of Oakland. Also, there are less constraints in designing and constructing a
cable-supported bridge on the northern alignment than on the southern alignment.

The staff believes EDAP's final recommendations adequately address BCDC con­
cerns about Bay fill.

Public Access. Section 66602 of the McAteer-Petris Act requires the Commission
to make a finding that any project which it approves provides "the maximum feasi­
ble public access, consistent with a proposed project." However, SB 60 (Kopp) en­
acted in 1997 added the following provision to the Streets and Highways Code:

Notwithstanding any other provision of law, local and state permitting
authorities shall not impose any requirement that a bicycle, pedestrian,
or mass transit facility be constructed on the San Francisco-Oakland Bay
Bridge as a condition for issuing any permit, granting any easement, or
granting any other form of approval needed, for the construction of a
new bridge.

As a result of this revision in state law, the overall project will still have to meet
the McAteer-Petris Act standard of providing "maximum feasible public access con­
sistent with [the] proposed project," but the Commission will not be able to achieve
this objective by imposing a condition requiring bicycle and pedestrian access on the
replacement bridge as part of a permit to Caltrans for the bridge project.

With this change, the Metropolitan Transportation Commission has the princi­
pal responsibility for determining whether a bicycle and pedestrian lane should be
provided on the replacement bridge. Moreover, MTC also has control of the funds
needed to pay for bridge amenities, such as a pedestrian and bicycle lane. SB 60 added
a $1 toll surcharge on all Caltrans-operated Bay Area bridge beginning on January 1,
1998 and remaining in effect for approximately eight years to pay the Bay Area's
funding share of the entire toll bridge seismic retrofit program. SB 60 also allows
MTC to extend the toll surcharge for an additional two years to pay for the following
"amenities" for the Bay Bridge eastern span project: (1) a cable-supported long span;
(2) bicycle/pedestrian access on the new span; and (3) replacement/replacement of
the TransBay Terminal in San Francisco.
In the public hearings held by the Bay Bridge Design Task Force and EDAP, bicycling and recreation interests have advocated that a bicycle and pedestrian pathway should be provided on an eastern replacement span and that a bicycle and pedestrian lane should be incorporated into plans to retrofit the existing western suspension portion of the Bay Bridge. Moreover, as noted above, in order for BCDC to issue a permit for the replacement and retrofit work, the Commission will have to find that the project provides “maximum feasible public access consistent with the project.”

According to Caltrans, the originally estimated cost to provide a bicycle lane on the eastern span varied between $84 and $102 million, depending on the type of bridge and alignment, and on the western span it is approximately $65 million. Using very general estimates of the number of bicyclists who would ride over the bridge, the Commission concluded that the cost per bicyclist may exceed the cost of providing a shuttle service across the bridge, on BART or on an expanded ferry system. Therefore, the Commission preliminarily found that the replacement span should be designed to accommodate bicycle and pedestrian use unless it would be less expensive to provide comparable access in some other fashion or such access is found to be infeasible.

The EDAP recommended a bicycle and pedestrian lane, but MTC raised the issue, based on estimated future bicycle usage, of whether the high cost of providing a bicycle/pedestrian lane can be justified. MTC recommended that Caltrans continue its evaluation for providing a bicycle/pedestrian lane at a more reasonable cost. At its May 29, 1998 meeting, the EDAP was advised that a pedestrian and bicycle path is now estimated to cost between $33 and $50 million.

SB 60 defines the baseline cost of the new eastern span as $1.285 billion, which includes $80 million toward the cost of a cable-supported main span. The two-year toll surcharge extension would generate $230 million. Thus, the total budget for Bay bridge “amenities” is $310 million ($80 million + $230 million).

The most recent estimates of the costs of the amenities recommended by the EDAP are as follows:

<table>
<thead>
<tr>
<th>Suspension long span</th>
<th>Bicycle/pedestrian path</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$171 million</td>
<td>$50 million</td>
<td>$221 million</td>
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Thus, after paying for the “signature” bridge and a bicycle and pedestrian pathway, a $89 million balance would remain in the “amenities” budget. Therefore, on May 29, 1998, the EDAP recommended that a two-direction pedestrian and bicycle path should be provided on the south side of the replacement span.

The $50 million cost of a 15-foot-wide pedestrian and bicycle path is under four percent of the total cost of the replacement bridge and can be accommodated in MTC’s “amenities” budget. Thus, it is economically feasible to provide a pedestrian and bicycle pathway on the replacement bridge, which would at least partially address the requirement of the McAteer-Petris Act that “maximum feasible public access consistent with [the] proposed project” be part of any project approved by
BCDC. Therefore, the staff recommends that the Commission direct BCDC’s representative on the Task Force and MTC to support funding for a bicycle and pedestrian path on the replacement bridge to insure that the replacement bridge will provide maximum feasible public access.

**Rail Transit.** The *San Francisco Bay Plan* policies concerning transportation state in part, that “if a route must be located across a waterway, the following provision(s) should apply: To provide maximum ultimate capacity on any new route that is allowed over or under a waterway (and thus to minimize the number that might have to be allowed in the Bay), the design of the route should, if feasible, accommodate future mass transit facilities and subsequent installation of automatic power and guidance elements for vehicles.” This policy clearly applies to any new “route” (i.e., bridge) over a waterway, but it may not necessarily apply to a replacement bridge. Therefore, future rail service may not have to be required on the new east span. Moreover, as noted above, SB 60 of 1997 prohibits all state and local agencies, including BCDC, from imposing “any requirement that a...mass transit facility be constructed on the San Francisco-Oakland Bay Bridge as a condition for issuing any permit...for the construction of a new bridge.”

MTC recommended that the new eastern span should be designed to accommodate the possibility of future rail service, and Caltrans has indicated that the new span will be strong enough to accommodate passenger light rail service. Therefore, the staff believes EDAP’s final recommendations adequately address BCDC concerns about rail transit.

**Environmental Impacts.** The Bay Bridge is eligible for listing on the National Register of Historic Places. However, the eastern span of the bridge is built on recent fill that does not contain either historic or prehistoric sites which could be disturbed by the construction of a new bridge. Additional fill and dredging required for the construction of the new bridge and demolition of the existing bridge would impact aquatic, wildlife and other natural resources of the Bay. Mitigation for significant adverse environmental impacts of the Bay fill would have to be provided as part of the project. However, the environmental impacts and attendant mitigation measures would likely be similar in scale for all of the alternative designs and alignments.

The Commission did not make any recommendations or other preliminary conclusions on the potential environmental impacts of the project pending the completion of Caltrans’ environmental evaluations. However, the staff believes EDAP’s final recommendations address—as adequately as possible at this stage of design—BCDC concerns about the environmental impacts of the project.

**BCDC Involvement in the Bridge Design Process.** Section 66604 of the McAteer-Petris Act provides that the “Legislature further finds and declares that in order to protect the present shoreline and body of the San Francisco Bay to the maximum extent possible, it is essential that the Commission be empowered to issue or deny permits, after public hearings, for any proposed project that involves placing fill, extracting
materials or making any substantial change in use of any water, land or structure within the area of the Commission’s jurisdiction.”

The bridge type alternatives were first narrowed to three configurations. Later, the alternatives were again narrowed to two. The Bay Bridge Design Task Force process has worked well to provide oversight to Caltrans, to facilitate public involvement in this important issue, and to incorporate BCDC’s views early in the design process. To take continued advantage of the benefits of this arrangement, the Commission recommended that both the Task Force and the EDAP should remain in place to select a bridge design type and to oversee the detailed design of the bridge.

A primary reason for BCDC’s involvement on the Bay Bridge Design Task Force is to ensure that the policy issues BCDC will have to face when Caltrans applies for a permit for a replacement bridge are addressed from the outset in the planning and design of the bridge. To ensure that BCDC’s policy concerns are fully addressed, BCDC asked to be given the opportunity to hold a public hearing on the fundamental issues of concern to BCDC and offer BCDC’s formal views on the matter to MTC, prior to the Metropolitan Transportation Commission taking any action on the final recommendations of the Bay Bridge Task Force.

MTC agreed with the Commission’s recommendations for continuing participation of the Engineering and Design Advisory Panel and the Bay Bridge Design Task Force during the design stage of the project and for the Commission’s preliminary consideration of the final design alternatives. Therefore, the staff believes the Commission’s concerns about being involved in the design process are being adequately addressed.
General Requirements

The new span will be constructed in a manner to allow continued operation of the existing span with a minimum amount of time upon completion to transition to the new span.

Post-Earthquake performance of the new structure should be high. The bridge will be designed to provide emergency as well as normal traffic service (lifeline service) after an earthquake on either the Hayward or San Andreas fault systems. Some damage during a large seismic event is expected — e.g., minor plastic hinging and thermal deck joints requiring replacement — that should be managed (i.e., location and quantity controlled by design). No damage in the foundation should be tolerated as it cannot be easily accessed. Even if the design plans for no damage in the system, design of a fuse for location and ductility should be completed.

The new structure should accommodate the existing level of traffic capacity (five lanes of traffic in each direction) with the addition of a standard shoulder on at least the right side in each roadway.

Geometry will be compatible with the tunnel at Yerba Buena Island and the westerly approach to the Oakland toll plaza.

Access will be provided to Yerba Buena Island (YBI). The new design should be as compatible as is reasonable with present use and future development of YBI and Treasure Island (e.g., United States Coast Guard (USCG) and the City of San Francisco island use plans)

A single clear portal 42 meters (138 feet) vertically above the mean high water level and a minimum of 143 meters (500 feet) horizontally between fenders will be provided for marine traffic over the existing navigational channel just east of YBI. (The USCG will make the final determination.)

The existing bridge will be removed after completion of the new span.

Additional considerations that may impact the design of the bridge include any height restrictions by the Federal Aviation Administration and scope changes which will be determined by the Bay Bridge Design Task Force and the Metropolitan Transportation
Commission after public hearings and in consultation with the Bay Conservation and Development Commission (BCDC) and Caltrans. These include:

- the width of the shoulder, if any, on left side of the roadways,
- the addition of pedestrian and bicycle facilities,
- the accommodation for future rail.

**Structural Considerations**

The design should anticipate potential inefficiencies of the foundations in bay mud (see the Caltrans' *East Span of the San Francisco-Oakland Bay Bridge, Log-of-test-Borings, April 18, 1997*).

For efficient span lengths and foundations, a configuration is selected by envisioning an efficient foundation design in which group efficiency is high (i.e., few piles and/or large pile spacing) and few, if any, additional piles are required for load case VII (controlling earthquake) beyond required piles for load cases other than load case VII (i.e., foundation service loads are increased by increasing span lengths until required capacities due to service loads are near to required capacities due to the seismic load case).

The above-described design process will generate several different span lengths as the soils and height of the roadway vary. If the relatively great variation in structure type of the existing east spans is to be avoided, a degree of compromise should be anticipated between economy and structure type continuity in pursuit of structure continuity.

Desired span lengths tend to define superstructure type, first by feasibility and then by economy. Minimum depth-to-span ratios must be respected in order to avoid compromising camber prediction methodologies and live load deflection limiting criteria.

On stiff sites the structural system should be soft and on soft sites the structural system should be stiff.

Bridge response to seismic ground motions are likely to be dominated by a velocity pulse. A rocking system should be considered to minimize damage and plastic deformation at the time of a pulse and following an earthquake.

Torsional capacities within the superstructure must be capable of carrying seismic demands.

Drop-type vulnerabilities should be avoided and elimination should be considered.
Structural design should consider modern materials, construction techniques and seismic devices. The type selection should respect constructability and the capacity to maintain quality assurance.

An economical solution is an important consideration in type selection.

Design Considerations

The bridge should integrate into the site and the surrounding environment by reflecting the grand scale of the San Francisco Bay, by harmonizing with the existing west span of the bridge and by landing gracefully on the Oakland and Yerba Buena Island landfalls. The replacement bridge should by contrast or similarity, compliment the existing San Francisco bridge suspension span. They should feel related in some way that makes the two bridge elements into a whole. One bridge should not diminish the visual quality or importance of the other.

The design of the replacement span should adhere to the established principles of design so that the structure's form, alignment, and detailing exhibit continuity and order. Where spans or structural systems change within the new east span, structural system integration will be important for visual continuity.

The new bridge should be visually memorable and convey a sense of the gateway to Oakland. Views from the bridge when traveling toward Oakland should consider Oakland’s central business district and waterfront.

The bridge should convey to the user that the user is on a bridge and not an extension of the on-grade highway system. There should be some visual expression of the long span bridge section to the user.

The bridge should provide a measure of visual continuity for motorists regardless of what structural system is used equal to, but not necessarily the same as, that of the existing westbound portion of the east span bridge.

The girders, piers and rails of the bridge should generally appear slender and should provide for views of the Bay by motorists using the bridge.

Guard rails and hand rails should be designed to provide maximum transparency for maintaining views of the Bay while meeting appropriate safety criteria.

Landscaping around the bridge should replicate the existing natural surroundings of the Bay shoreline.

Night lighting of and on the bridge is an important design consideration.
Environmental

The design should strive to minimize impact to the bay and to Yerba Buena Island (YBI).

The new span should be aligned to minimize, and mitigate impacts on sensitive wetland areas in the Emeryville Crescent.

The design should minimize bay fill and dredging.

Design and construction impacts on wildlife should be minimized and mitigated — many species of wildlife could be impacted by this project including the peregrine falcon, winter-run Chinook salmon, double-crested cormorant, least tern, clapper rail, pacific herring, and harbor seal. Removal of the nesting sites during selected times of the year will impact the birds, dredging during selected times of the year may impact the fish, and boat access may impact the harbor seals. Additionally, nesting sites for both the peregrine falcon and the double-crested cormorant should be sustained on or near the new span.

Replacement bridge foundation locations should, to the extent feasible, avoid known prehistoric, potential historic archaeological sites and historic properties on YBI. The ramps connecting the bridge to YBI should have the minimum impact on the natural features and landscape of the island.

Highway design standards

The following geometrics on the bridge roadway will be maintained:

- design speed of 100 kilometers per hour (65 miles per hour)
- maximum allowable deck grade of 2.74% (the existing maximum grade)
- minimum horizontal curve radius on mainline of 1000 meters (3000 feet) (based upon stopping sight distance (SSD) and is function of 3 meter shoulders — this number may be modified depending on final determination of shoulder widths)
- minimum right side shoulder width of 3 meters (10 feet)
- lane width of 3.6 meters (12 feet)
- inside to inside of railings of a roadway with a 3 meter right shoulder and a 1.2 meter left shoulder (left shoulder subject to final determination) without a ped-bike lane is 22.2 meters and with a ped-bike lane is 26.4 meters (including 0.6 meters to construct a barrier between the roadway and ped-bike lane)
- maximum superelevation rate of 0.04 meters/meter for a 1000 meter curve
- the stopping sight distance (SSD) is 190 meters as a function of a 100 kilometers per hour speed
- minimum vertical curve length of (2V) in which V equals the design speed
- minimum horizontal clearance of 3 meters (10 feet) (which may change dependent on final determination of shoulder widths
- minimum vertical clearance of 5.1 meters (16.5 feet).

The following geometrics on the bridge ramps will be maintained (conforming to the island may cause some compromises of these standards):

- minimum design speed at an exit nose 80 kilometers per hour (50 miles per hour)
- minimum design speed at a terminus of 40 kilometers per hour (25 miles per hour)
- lane widths of 3.6 meters (12 feet)
- right shoulders of 2.4 meters (8 feet)
- left shoulders of 1.2 meters (4 feet)
- Stopping Site Distance of 130 meters (430 feet) as a function of a 80 kilometers per hour speed (50 miles per hour)
- maximum allowable deck grade on a ramp of 8%
- maximum superelevation of 12% for a curve radius equal to or less than 190 meters (625 feet)

**Pedestrian-bikeway design standards**

If included, the two-way pedestrian-bikeway will follow the following standards:

- be compliant with Americans with Disabilities Act (ADA) regulations
- be separated from motorized traffic by a barrier
- minimum width of paved path from barrier to barrier of 3.6 meters (12 feet)
- minimum vertical clearance of 2.5 meters (8 feet)
- minimum bicycle path design speed of 40 kilometers per hour (20 miles per hour).

Any bicycle and pedestrian way should be integrated into the bridge design so that it contributes to the overall order and continuity of the bridge design. Periodic outlooks should be provided at intervals along the bicycle-pedestrian way.

**Maintainability**

Long term maintenance must be considered. The selection of structure type, a variety of potential system components, and structure materials should consider necessary maintenance programs and evaluate the likelihood of such programs receiving necessary consistent funding.

Maintainable thermal expansion joints will be required but should be at a maximum spacing consistent with bridge movement.
To: Commissioners and Alternates
   Bay Conservation and Development Commission

From: Angelo J. Siracusa, Vice Chairman

Subject: Proposed position on Bicycle/Pedestrian Lane on New Eastern Span of the Bay Bridge

I am the BCDC delegate to the Metropolitan Transportation Commission and to MTC’s Bay Bridge Design Task Force (BBDTF).

At the BCDC meeting on June 18 we will hold a public hearing and vote on the design for a new eastern span of the San Francisco-Oakland Bay Bridge. Staff has prepared a memo with the basic recommendation that BCDC endorse the decisions of the Engineering Design Advisory Panel. EDAP’s basic recommendation is to build a single-tower suspension span.

BCDC staff is also asking you to direct me to support the funding of a bicycle and pedestrian path on the new eastern span. This memo deals primarily with that issue.

I am committed to carrying out the laws and policies of both BCDC and MTC. While I strongly support BCDC policies on public access, I favor transportation policy that eases work related commuting. I think the proposed bicycle/pedestrian lane bring those two objectives into potential conflict.

First some general background.....the BBDTF’s primary charge is to decide on seismic integrity and aesthetics of the new Span. SB 60 stipulates financial limits based mostly on additional $1.00 bridge toll for eight years, with an option to add two more years. The law says we may use these funds for a bridge—either a basic causeway or an enhanced design (“Signature Bridge”)—plus a bike/pedestrian lane, plus the possible relocation of the Trans-Bay Terminal. However SB 60 does not mandate our funding anything beyond the basic bridge. So, we may choose not to select any of the so-called amenities. However, the legislation prohibits our funding other trans-Bay improvements like ferrics.
It is difficult, if not impossible to project bicycle use across San Francisco Bay. But the Golden Gate Bridge experience might give us a gross indication. About 110,000-120,000 vehicles cross the Golden Gate Bridge each weekday. On those days about 1,400 bikes cross the bridge; on weekends between 3,500 to 5,000. The Bay Bridge currently carries about 280,000 vehicles per weekday. If we applied the same ratio as that of the GGB, about 3,600 bikes would use the Bay Bridge on weekdays or 6-7% of the use of a single automobile lane. Weekend bike numbers would be 9,000-12,000.

Early cost estimates of a 15-foot bicycle/pedestrian lane on the new Bridge are about $50 million. I have severe misgivings about spending $50 million on a bicycle/pedestrian lane for such little use, especially since the lane goes only to Yerba Buena Island—so a dead end.

CalTrans estimates that retrofitting the western span of the Bay Bridge for bicycle use would run about $65,000,000—so the cost of a bicycle lane across the Bay would be about $115,000,000. (That expenditure for a regional ferry system would be a much better investment with much higher non-automobile ridership.) Looking both short and long-term, I do not believe that the most optimistic projection of bicycle use justifies an expenditure of $115 million, so I am inclined to vote against any bicycle/pedestrian lane.

However, I have a compromise proposal. According to CalTrans, the proposed 15-foot bicycle/pedestrian lane could easily be engineered to accommodate a future retrofit for light rail, buses or a reversible HOV lane at a very slight increase in cost—“a few million dollars.”

I recommend BCDC’s endorsement of a bicycle/pedestrian lane ONLY IF it is designed to accommodate light rail, bus or HOV. I recommend also that our endorsement be accompanied by a resolution that policy makers may decide in the future to convert the bike lane to transit or HOV, if they conclude that there is public benefit to do so.

There is an obvious flaw in my argument. If I am concerned about a bike lane ending on Yerba Buena Island, I must acknowledge that the same impediment exists for transit or HOV. But there may be a time when the west span can be retrofitted or replaced to allow transit or HOV to span the Bay. It’s both or neither for me. If we decide that we can’t in the future go all away across the Bay by transit, I am unwilling to concede that we can by bikes.

I believe my recommendation is a win-win. It creates a bicycle/pedestrian lane and gives the bicyclists and pedestrians the opportunity to prove their assertion that the lane will be well used. It gives flexibility to future policy makers to leave a bike/pedestrian path in place or to convert it to transit or HOV use, if they find that such conversion is good public policy.

So, I recommend that we approve a lane for bicycles and pedestrians only if:
• It is designed now to accommodate future light rail, buses or HOV, and,
• We pass a resolution allowing future policy makers the flexibility to convert the bicycle lane to transit or HOV.
Subject: Bay Bridge Bike Path  
Date: Tue, 9 Jun 1998 21:43:09 -0700 (PDT)  
From: Ron Strochlic <strochlic@igc.apc.org>  
To: joel@bcdc.ca.gov  
CC: jmeggs@lmi.net

Dear BCDC Commissioners:

Please ensure that the new Bay Bridge from Oakland to the island includes bicycle and pedestrian access. Please also ensure that this access is safe from wind, noise and pollution by building the path slightly below deck, just enough to block line-of-sight noise from motor vehicles.

Please also ensure that the new bridge, including the toll amenities package, will not prohibit the restoration of intercity rail service across the bridge by building the new bridge strong enough to support such rail and by preserving the existing location and existing capacity of the Transbay Transit Terminal. With one-million new east bay residents projected by 2015, the Bay Bridge, which is accurately dubbed the "lifeline" of the Bay Area, will again need to be able to double its capacity with rail service.

Thank you for all your support of people access to date, and thank you for looking ahead to the future by designing a true bridge to the twenty-first century.

Sincerely,

Ron Strochlic  
512 E. 22nd St.  
Oakland, CA 94606
June 9, 1998

BCC
30 Van Ness Avenue, Suite 2011
San Francisco, CA 94102

Dear Commissioners,

We support a bicycle/pedestrian facility on the Bay Bridge hope that you will support it, and in so doing, allow people in San Francisco and the East Bay to bypass gridlock, using non-polluting transportation. We support efforts to provide such non-motorized access to all bridges in the Bay Area, as valuable components in a strategy to provide regional connectivity to bicycle travellers.

I personally have used the bicycle/pedestrian on the Dumbarton Bridge and can attest to the value of these facilities in making what otherwise would have been an impossible bicycle commute possible.

Yours truly

Bill Michel
Conservation Chair
(650) 336-7737 (days)
Dear BCDC Commissioners:

Please ensure that the new Bay Bridge from Oakland to the island includes bicycle and pedestrian access. Please also ensure that this access is safe from wind, noise and pollution by building the path slightly below deck, just enough to block line-of-sight noise from motor vehicles.

Please also ensure that the new bridge, including the toll amenities package, will not prohibit the restoration of intercity rail service across the bridge by building the new bridge strong enough to support such rail and by preserving the existing location and existing capacity of the Transbay Terminal. With one-million new east bay residents projected by 2015, the Bay Bridge, which is accurately dubbed the "lifeline" of the Bay Area, will again need to be able to double its capacity with rail service.

Thank you for all your support of people access to date, and thank you for looking ahead to the future by designing a true bridge to the twenty-first century.

Sincerely,

Bhima Sheridan

Bhima Sheridan
THE SINGLE-TOWER SUSPENSION option, left, has been selected as the Bay Bridge replacement of choice by the design task force. Another option is the single-tower cable-stayed bridge.

Public pans favored bridge design

Some dislike cost, others the look, while bicyclists are still pushing for a lane

By Robert Oakes
TIMES STAFF WRITER

OAKLAND — A replacement eastern Bay Bridge should include a bike path, be built strong enough to carry trains and better look nicer than the current proposed design, speakers told a government panel Wednesday.

Several Bay Area residents, elected officials and others who came to a public hearing criticized, ridiculed and generally gave a thumbs-down to the recommended design — a single-tower suspension bridge.

Everyone offered different ideas about their bridge preferences, but the suspension bridge design won few allies. Regional officials are scheduled to take a final vote in late June.

"I think this is the wrong representation of science, engineering and money," T.Y. Lin, an internationally known structural engineer, told the Bay Bridge Design Task Force. "I don't think it looks good."

The seven-member task force has been meeting for more than a year in an attempt to reach a regional con-
sensus about a replacement for the current 61-year-old structure from the Oakland shoreline to Yerba Buena Island.

If comments Wednesday were any indication, the task force has plenty of work cut out for it with fewer than two weeks remaining in the pick-a-bridge process.

Lin and some other speakers preferred a single-tower cable-stayed bridge, a design popular in Europe and Asia but rare in the United States. Others said they wanted a bolder, more innovative design than the suspension span.

The suspension bridge too closely resembles older toll bridges such as the Golden Gate or western Bay Bridge, said Jeff Loeb, owner of a San Francisco advertising firm. "It seems much more like a replacement of what we've seen before," Loeb said.

Others wondered why any tower bridge is necessary instead of a flat and less expensive viaduct.

"The problem with a signature bridge is, who is going to see it? Basically, only tourists in tourist boats," said Carleton Hussey of Walnut Creek.

An engineering and advisory panel in late May recommended the suspension bridge as a "signature" structure. It would cost about $50 million more than the cable-stayed structure, priced at about $1.4 billion.

A cheaper bridge would reduce the life span of a $1 toll surcharge to less than the current 10-year maximum allowed under state law to finance a signature span. The higher toll started Jan. 1.

Bicycle groups have been the most aggressive lobbyists in the bridge selection process, and they continued pushing for a bike lane Wednesday. It would add about $50 million to the cost.

Opinions vary about what kind of path to build and on what side of the bridge it should be.

Several speakers said the bridge should have capacity to add trains, because they consider BART service inadequate through the Transbay Tube. A replacement will have only the same vehicle capacity as the current span. About 280,000 vehicles cross it daily.

"A bridge that does not have rail is unacceptable," said Berkeley Mayor Shirley Dean.

Task force members were still confident they could meet the current schedule and vote June 22. Caltrans hopes to finish building the bridge in 2003.

"We're now in the home stretch and can almost see a bridge at the end of the tunnel," said Mary King, task force chairwoman and an Alameda County supervisor.
Span Design Displeases East Bay

Leaders call towerless stretch 'freeway on stilts'

By Laura Hamborg
Chronicle Staff Writer

Some East Bay city leaders are grumbling that the favored design for a new eastern span of the Bay Bridge looks more like a freeway than a grand entrance to their side of the bay.

"The designers are calling the towerless stretch of the bridge a skyway, like it's some golden road to heaven," said Terry Roberts, Oakland's director of public works. "What it really is is a freeway on stilts."

The mayors of Oakland, Emeryville, Alameda and Berkeley echoed that sentiment yesterday at a packed public hearing before the Metropolitan Transportation Commission's Bay Bridge Design Task Force.

Two weeks ago, an advisory panel of engineers and architects chose a suspension span design to replace the eastern half of the bridge from Yerba Buena Island to Oakland. It is expected to open in 2003 and cost about $1.5 billion.

The choice came as a surprise because the panel seemed to be leaning in favor of a cable-stayed, single-tower design. Designers said a suspension bridge would match the look of other bridges, including the western span of the Bay Bridge and the Golden Gate Bridge.

Their recommendation must be approved by the task force and the regional commission June 24.

At yesterday's hearing, dozens of other speakers weighed in with their views, including Tom Eckler of Oakland, who told the task force: "It think it's ugly and you should build the bridge out of bamboo."

But beyond aesthetics, the East Bay mayors said they also were concerned that the preferred bridge design doesn't include a plan for light or heavy rail service.

"When passenger rail trains ran across the bridge in the 1940s and 50s, the two rail lines actually moved more than double the number of people across than the 10 motor lanes do today," Bukowski said. "If you're going to build it, do it right and include rail," he said.

Bike access, however, is included in the new design. The advisory panel recommended a single, 12-foot-wide pedestrian and bike path on the south side of the eastbound deck.

Bicyclists cheered the idea, but some said they want the bike lane dropped below the path of motorists — by as much as five feet. They are worried about the noise of cars whizzing by, the glare of headlights and flying debris like tire scraps shooting off the cars.

"Traffic on the bridge is going to be so loud — up to 80 decibels," said Derek Shuman of Berkeley, who played a tape recording of loud freeway noises to amplify his point. "See?" he shouted to the task force over the blaring boom box, "it's so loud bicyclists could lose their hearing."

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