



October 10, 2011

TO: Transportation Authority of Marin Executive Committee

FROM: Dianne Steinhauser, Executive Director

THROUGH: Bill Whitney, Project Manager

RE: Central Marin Ferry Connection Multi-Use Pathway – Project Update
Agenda Item 8

Dear Commissioners:

Executive Summary

Staff continues to make progress by advancing the Central Marin Ferry Connection Multi-Use Pathway into the next phase of design. The technical team is proposing additional bridge concepts to be considered for the overhead crossing of Sir Francis Drake Boulevard.

A ranking matrix was prepared to evaluate each concept against a common set of design criteria and screen out options that do not appear viable. The criteria ranged from estimated construction cost, constructability and related schedule, aesthetics, and user friendliness to name a few. A weight factor was then applied to each criterion to establish an individual rating and then summarized to provide an overall rating. This screening was completed by the technical team consisting of architects, structural engineers, civil engineers, community outreach staff, TAM staff and staff with the City of Larkspur. Of the eleven concepts evaluated the technical team recommended five viable design options for further consideration.

Staff would like to review the criteria, weight factor and ranking process as further described in the attached Bridge Ranking Matrix at the Executive Committee meeting.

Staff is proposing a two step process to build community consensus in which we first present viable bridges and review the ranking matrix with our stakeholders. Staff and the technical team will then further refine the design concepts and apply the ranking procedures. The final step would consist of presenting the ranked results to project stakeholders in an effort to achieve consensus and select a preferred alternative. Staff will present the findings of this two step process to the Ad-Hoc Greenbrae Corridor Sub-Committee, the Executive Committee, the Larkspur City Council, and during two public open houses.

The Greenbrae Corridor Ad-Hoc Sub-Committee was briefed and updated on the process and ranking matrix at their September 16th meeting

Recommendation: For discussion and information only

Background

Staff continues to make progress by advancing the Central Marin Ferry Connection Multi-Use Pathway into the next phase of design. Over the past few months our newly retained group of engineers and architects has worked with staff to understand the surrounding complexities and constraints of the site while becoming familiar with the design criteria and design options developed during the environmental phase.

As a first order of work TAM has directed the consulting team to expand on the engineering efforts completed to date and develop additional structure types for the Sir Francis Drake crossing and associated ramp elements. The technical team has developed nine “high level” additional concepts beyond the two base design options for further consideration.

Initial Ranking

A ranking matrix was prepared to evaluate each concept against a common set of design criteria. A set of twelve design criteria were developed to evaluate and rank the initial concepts as part of an initial screening process. The criteria ranged from estimated construction cost, constructability and related schedule, aesthetics, and user friendliness to name a few. A weight factor was then applied to each criterion to establish an individual rating and then summarized to provide an overall rating.

This screening was completed by the technical team consisting of architects, structural engineers, civil engineers, community outreach staff, TAM staff and staff with the City of Larkspur. Of the eleven concepts evaluated by the technical team five concepts are recommended as viable options for further consideration. Two of the five concepts are carried over from the recently completed preliminary engineering efforts.

The technical team has determined the appropriate bridge types most suitable to provide a new crossing of Sir Francis Drake Boulevard consist of a box girder structure, a cable stayed “extradosed” structure, a truss structure or an arch structure. These structure types would meet the needs of the project; however the box girder structure would require an intermediate column. The remaining structure types are a clear span from the edge of road to edge of road. The box girder structure represents the base alternative under review. It should be noted the City of Larkspur staff has expressed concern with an intermediate column associated with the box girder type structure; however at this point in the evaluation process TAM staff are recommending we continue to include and rank this concept based on unknown but potential financial restraints that might render some alternatives non-feasible.

Staff would like to review the criteria, weight factor and ranking process as further described in the attached Bridge Ranking Matrix at the Executive Committee meeting.

Consensus Building & Next steps

In order to accelerate our work during the design phase and meet our desired schedule we must provide clear direction to our designers as final design begins. TAM and our participating stakeholders have invested a considerable amount of time and energy to develop the project to its current stage. Over the last few years TAM has conducted numerous project briefings to Boards, Councils and during public open houses to solicit comments and feedback. The past consensus building efforts are reflected in the current designs.

As our next step staff is implementing a focused consensus building process to select a preferred bridge structure type over Sir Francis Drake Blvd. We are proposing a two step process in which we first introduce the five viable bridge type structures and discuss design criteria and weight factors with our stakeholders. Staff and the technical team will then further refine the design concepts and apply the ranking procedures. The final step would consist of presenting the ranked results to project stakeholders in an effort to achieve consensus and select a preferred alternative.

Staff will present the findings of this two step process to the Greenbrae Corridor Sub-Committee, the Executive Committee, the Larkspur City Council, and during two public open houses.

Funding Activities

The Central Marin Ferry Connection Project is supported and partially funded by the Non-Motorized Transportation Pilot Program administered by Marin County. As the project is developed more detailed and accurate cost estimates are periodically updated. TAM has been tracking a probable funding shortfall for some time now. To close this gap, a request was made to the County for additional NTPP funding which was successfully granted by the Board of Supervisors.

The Metropolitan Transportation Commission recently redirected Regional Measure 2 funds from the Greenbrae Corridor/CMFC project to the SMART Project to address their funding shortfall. TAM has identified other future funds to backfill the lost funds. A complete funding plan as described in Updated Initial Project Report will be brought back to the Board later this month as part of a funding request to the Metropolitan Transportation Commission.

Interagency Agreements - Future Construction, Operations and Maintenance

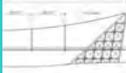
TAM has been, and will be, working towards an agreement with all of the partners involved in the project regarding lead agency roles for future construction, routine maintenance and operations of the new facility. We are very pleased with the recent support of the SMART Board and the County Department of Public Works to resolve, in concept, these issues. Interagency Agreements are being prepared to finalize the roles and responsibilities of the participating agencies.

Recommendation: For discussion and information only.

Attachment: CMFC Bridge Ranking Matrix



CMFC CONCEPTUAL BRIDGE RANKING MATRIX

		A	B	C	D	E	F	G	H	I	J	K
		BASE STRUCTURE	CABLE STAYED EXTRADOSED	TRESTLE TRUSS	WARREN TRUSS w/ Concrete Bottom Chord	CABLE STAYED SPLIT DECK	CABLE STAYED 2 TOWER / 1 SUPPORT	CABLE STAYED 2 TOWER / 2 SUPPORT	SPACE FRAME - SUSPENSION	CONCRETE SHELL ARCH	DOUBLE ARCH TRUSS	BASKET HANDLE ARCH
DESIGN ISSUE	WEIGHT FACTOR											
Rating (3=Low, 1=High)												
Construction Cost	40	2.5	2	2	3	1.5	1.5	1.5	1	1.5	2	2
Rating (1=Low, 3=High)												
Aesthetics	40	1	2	1.5	2	3	3	2.5	3	3	3	3
Safe/Secure Facility	40	3	3	3	3	2	3	3	2	2.5	3	3
Maintenance & Inspection	30	3	3	2	2.5	2.5	2.5	2.5	1.5	3	2	2.5
Constructability	30	3	2.5	2.5	2.5	1.5	1.5	2	1	1.5	2	2
User Friendliness	30	2.5	2.5	2.5	2.5	2	3	3	3	3	3	3
Construction Schedule	20	3	2.5	3	3	2.5	2.5	2	1	2	2.5	2.5
Seismic Behavior	20	3	3	3	3	2	2	2.5	1	2	2.5	3
Wind and Pedestrian Induced Behavior	20	3	2.5	2.5	3	2	2	2.5	1	2.5	3	3
Community Acceptance	20	1	2.5	2.5	2.5	2	3	2.5	3	3	3	3
Environmental Impact	20	3	3	3	3	2.5	2.5	2	1	2	3	3
Geotechnical	10	3	4	3	3	2.5	2.5	3	2	2.5	2.5	3
Summation of Ratings (320=Min, 960=Max)		805	830	780	865	685	775	765	565	760	835	865
Overall Ranking (1=Best, 11=Worst)		5	4	6	1	10	7	8	11	9	3	1
Overall Rating (A=Best, E=Worst)		B	B	C	A	E	C	C	E	C	A	A
Note. Alternatives may have same ratings.												

Rating		
Rank	Min	Max
A	830	870
B	800	830
C	750	800
D	700	750
E	0	700

BOX GIRDER



CABLE STAYED EXTRADOSED



WARREN TRUSS



A-SYMMETRICAL ARCH TRUSS



PIPE ARCH- BASKET HANDLE



- **Landmark Alternatives**
 - Arch, Cable-stayed
 - Draws attention to the structure
 - May overpower the site
- **Contextual Alternatives**
 - Truss, girder, Extradosed
 - Draws attention to the site and amenities
 - May provide a better ped/auto user experience