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**HOSPITAL BUILDING SAFETY BOARD
Instrumentation Committee**

**Thursday, October 28, 2021
9:00 a.m. - 3:00 p.m.**

Teleconference Meeting Access:
[HBSB GoToMeeting Instrumentation Committee](#)
Access Code: 824-806-437

Committee Members Present:

Marshall Lew, Chair
Bruce Clark, Vice-Chair
Jim Malley
Tim McCrink
Farzad Naeim

HCAI Staff Present:

Hussain Bhatia
Erol Kalkan
Roy Lobo
Ali Sumer
John Paul Buchanan, OSHPD Legal Counsel

Consulting Members:

Hamid Haddadi
Moh Huang

HBSB Staff:

Ken Yu, Executive Director
Joanne Jolls
Evelt Torres

1 **1. Welcome and Introductions**

2 Marshall Lew, Chair, called the meeting to order on October 28, 2021, at 9:00 a.m., and HBSB
3 Executive Director Ken Yu called roll.

4
5 Five members of the Committee present constitute a quorum. There being five present at the
6 time of roll, a quorum was established.

7

8 **2. Roll Call and Meeting Advisories/Expectations**

9 Mr. Yu read the public announcement regarding COVID-19, OSHPD officially becoming the
10 Department of Health Care Access Information (HCAI), and meeting rules and procedures.

11

12 **3. Annual update to the Committee regarding the California Strong Motion**
13 **Instrumentation Program (CSMIP)**

1 **Presenter:** Erol Kalkan, HCAI

- 2 • Status of hospital buildings selected to be instructed
- 3 • Newly proposed candidate hospital buildings for CSMIP
- 4 • Discussion and public input

5 **Discussion and public Input**

6 Mr. Lew questioned if there are any HCAI paid buildings waiting to be instrumented, or have
7 they run out of buildings. Roy Lobo stated HCAI only has two hospitals remaining this year:
8 Miller Children's and Presbyterian Hospital.

9
10 Mr. Lew asked if in there were any 4D projects in the San Diego area, do we have any 4D. Ali
11 Sumer stated there are three one-story buildings, and one three-story building being
12 constructed in the San Diego area.

13
14 Bruce Clark asked if all new hospitals are required to be instrumented. Mr. Lobo responded that
15 only hospitals that meet the thresholds given in Appendix L of the California Building Code, or
16 have seismic isolation or damping, need to be instrumented.

17 **Information item and Action Item**

18 None.

19
20 **4. Review of the Fiscal Year 2020-21 HCAI/CSMIP Hospital Instrumentation Annual**
21 **Report by the California Strong Motion Instrumentation Program**

22 **Presenter:** Hamid Haddadi, Consulting Member

- 23 • Discussion and public input

24 **Discussion and public Input**

25 Mr. Lew asked who pays for the sensors. Mr. Haddadi stated that HCAI pays for the sensors
26 unless it is owner-funded, then the owner is responsible to fix the instrumentation.

27
28 Mr. Lew questioned how many other recording systems or sensors need to be replaced. Mr.
29 Haddadi responded that 79 of the 108 systems installed are obsolete and that sixteen of those
30 are scheduled to be replaced this fiscal year. He indicated that there are several other recording
31 systems that are also obsolete, and those are planned for next fiscal year. He stated the budget
32 will not allow for all the work needed and that the plan being presented is only for the current
33 fiscal year.

34
35 Mr. Haddadi pointed out that one important outcome from upgrading the SSAs is
36 communication, because although they do communicate with the stations, it is not automated.
37 He explained that meant if there was an earthquake, modern recording systems automatically
38 call in the information, whereas with SSAs, a technician needs to call into the system to recover
39 the information, causing a delay in the recovery, processing and dissemination of the data. Mr.
40 Haddadi stressed that upgrading SSA systems is "low hanging fruit" that would have a
41 significant impact on operation of the hospital, monitoring, and data recovery and dissemination.

1 Mr. Lew inquired about the cost for replacing the SSA systems in the three hospitals planned for
2 this fiscal year. Mr. Haddadi responded that the cost is estimated to be \$108,000 - \$110,000,
3 including labor. Mr. Lew followed up by asking what the next level of system upgrades are
4 needed after the SSAs are replaced. Mr. Haddadi stated they have several other recorders that
5 have become obsolete in recent years that need to be upgraded next; 24 ETNAs, 18 K2s, and
6 12 Mt. Whitney's. Mr. Lew stated that he would like to see a projection on the replacements as
7 well as an estimate of cost. Mr. Haddadi stated he would work on the cost estimate for the
8 Committee.

9 **Information item and Action Item**

- 10 • None.

11 **5. Discussion on the draft white paper outline, "The Benefits of Strong-Motion** 12 **Instrumentation in Hospital Facilities"**

13 **Presenter:** Bruce Clark, Committee Vice-Chair

- 14 • Going beyond accelerographs
- 15 • New available technologies for measuring ground motions
- 16 • Low-cost sensors to augment/supplement existing technology
- 17 • Improvements in data acquisition, transmission, and processing
- 18 • Role of artificial intelligence in improving analytical results
- 19 • Dissemination of critical information to affected stakeholders
- 20 • Examples
- 21 • Costing
- 22 • Benefits
- 23 • Discussion and public input

24 **Discussion and public Input**

25 Mr. Naiem stressed that in a white paper being produced to highlight the value of
26 instrumentation, it should present to owners the types of information they would get, essentially
27 showing that with a small investment in instrumentation, they would have the ability to assess
28 the status of their hospital building. Mr. Clark reminded the Committee that HCAI is a user of the
29 CSMIP activities and data, and that as that a user, it is part of their responsibility to explain to
30 the hospital owners that there may be data or analysis systems available that are beyond what
31 CSMIP will offer. Mr. Lew opined that HCAI needs to have a statement explaining why HCAI is
32 recording this data and how it is going to use it.

33
34 Mr. Haddadi provided updates on some of the activities currently going on at CGS. He reported
35 that CGS has been considering the application of low-cost instruments and that CGS is in
36 discussions with Caltech and UCLA about setting up a pilot project to study and compare the
37 results of CSM type instruments with high-performance seismic equipment. Mr. Haddadi stated
38 that the goal was to conclude how and where low performance, low-cost instruments are best
39 used. Mr. Haddadi also reported that CGS is in discussions CalOES about how to use Shake
40 Alert information for engineering applications. He expressed that it would be very important to
41 touch on these topics in the white paper. Mr. Clark concurred that it would add value to the
42 white paper.

1
2 Mr. Lew suggested that HCAI consider participating in the pilot program and include one of the
3 future hospital projects that require instrumentation. Mr. Haddadi agreed it was a great idea,
4 especially because under the pilot project, CGS planned to put low-cost sensors side by side
5 with the high-performance sensors in buildings that are already instrumented and compare the
6 results. He stated that an independent institution was needed to compare the results and
7 determine how far and how much the low-performance sensors could be used. Mr. Haddadi
8 added that CGS would like to do the same comparison on the ground surface in the free field as
9 well as put low-cost sensors in between the existing high-performance stations to see how the
10 low-performance instruments can be used to fill the gap. He revealed that as part of the work
11 related to Shake Alert, under a project with CalOES, a real-time data processing center is being
12 set up at CGS. The plan is that the upgraded stations, ground stations, and structures will send
13 data in real-time to this data center where it will very quickly be processed and disseminated.
14 Two pilot projects already in the works are the Golden Gate Bridge and the Hayward bridge,
15 which will be sending data in real-time to the processing center. Mr. Haddadi noted that the
16 same thing could be done with a hospital and the white paper could show examples of what can
17 be done with an updated operating system.

18
19 Mr. Naiem suggested that the Committee iterate to finalize the outline of the white paper, assign
20 volunteers to write a first draft of the different sections, then pass it through a series of iterations
21 to make it the final outline. Mr. Clark agreed and suggested they spend the next couple weeks
22 going back through an existing outline and looking at all the ideas, add content to come up with
23 a package that's ready to go by the next Committee meeting, likely in February. Mr. Yu stated
24 due to a possible Bagley-Keene issue. If committee members participate or assigning portions
25 of this white paper outline to committee members should be funneled through HCAI staff.

26
27 Mr. Clark asked if it would be appropriate to take the document, make it available to everybody
28 and have them send in their comments to HCAI staff and have them compile it. Mr. Yu
29 consulted with HCAI legal counsel to see if there were any Bagley-Keene issues concerning this
30 matter. Jean Paul Buchanan clarified that if committee members aren't communicating with
31 each other, and there is no quorum, it should be fine. He stated that members can't work on the
32 same document, nor can they convey other members' suggestions because then it becomes an
33 issue of potentially having serial meetings. The committee members coming together in a group
34 larger than the subcommittee would be problematic. Mr. Yu announced that next week, they are
35 having a planning meeting to go over the meeting calendar for 2022. If they need more
36 Instrumentation Committee meetings in 2022, they can do that as well to further discuss issues
37 on the white paper. The Committee agreed to have the next meeting in early February.

38 **Information item and Action Item**

39 **MOTION:** [Naiem/Malley]

40 The Committee voted to approve the outline of the white paper to be delivered by Mr. Clark to
41 include an interpretation of the topics that he presented and were discussed today at this
42 meeting to the HCAI staff so that they can distribute it to members, solicit their ideas, and put
43 together an updated outline for everybody's discussion at the Committee's next meeting.

1
2 Mr. Clark asked how they go about editing, proofing, or revising a draft of a document like this.
3 Mr. Yu stated that no more than two Committee members can discuss it at any time. Mr. Clark
4 suggested developing a more detailed outline, assign specific members of the committee who
5 would be most effective for each of the chapters, have each of them become the individual on
6 the committee that is responsible for that chapter, and work with HCAI staff to package each
7 chapter. He remarked that the white paper will be a compilation of those chapters, which will
8 happen at the meeting after next.

9 **6. Committee goals for 2022**

- 10 • Discussion goals for the committee in the coming year
11 • Discussion and public input

12 **Presenter:** Marshall Lew, Chair

13 **Discussion and public Input**

14 Mr. Lew stated that the Committee would have a full plate next year developing the white paper.
15 He requested a listing of the hospitals and multiple building locations that are instrumented. Mr.
16 Kalkan acknowledged stating that he will provide the list.

17 **Information item and Action Item**

18 None

19 **7. Comments from the Public/Board Members on Issues Not on This Agenda.**

- 20 • None.

21 **8. Adjournment**

22 Mr. Lew adjourned the meeting at approximately 11:33 a.m.