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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Second Supplement to 8-3

September 8, 1992

To: Board of Directors (Engineering and Operations Committee--Action)
Board of Directors (Finance and Insurance Committee--Action)

From: General Manager

Subject: Staff Report Responding to the City of Monterey Park's Concerns
with the Proposed Garvey Reservoir Restoration Project

Report

The Engineering and Operations and Finance and Insurance committees met on August 19 and August 20, 1992, respectively, and approved the General Manager's recommendation to appropriate \$28,000,000 to finance all estimated costs for repair of Garvey Reservoir, certified the Final Environmental Impact Report (FEIR), and delegated the power to award contracts. This action followed an all-day Special Joint Meeting of the Engineering and Operations and Finance and Insurance committees held on August 11, 1992, where detailed presentations were made by District staff and its consultants; the City of Monterey Park officials, staff, and consultants; and by representatives from the State of California Division of Safety of Dams (DSOD). At the August 20, 1992 meeting, your Board heard presentations from representatives of the City of Monterey Park, their consultants, and residents opposing the repair and return to service of the reservoir. At that meeting, your Board deferred action on the item and directed staff to thoroughly reexamine the issues raised by the City, its consultants and residents and to return within 30 or 60 days with the results of the reexamination. At the same time, the Board approved a motion closing public comment and debate on the EIR.

A transcript of the relevant portion of the August 20 Board meeting is attached herewith as Exhibit A. The concerns of the City and its consultants are grouped together and addressed in a detailed Staff Report attached herewith as Exhibit B. Comments made by the public in the attached transcript are essentially the same as those comments received at public meetings held in November 1990 and December 1991. These comments are contained and responded to in Volume 2 of the Final EIR, as well as in Exhibit B.

Also attached herewith as Exhibit C is a letter from the Chief of DSOD which defines the role of that agency, the process used to recertify the reservoir, comments on the FEIR, and provides DSOD's assessment of the District's work and that of the City of Monterey Park consultants.

Also attached as Exhibits D, E, and F are letters from staff and District consultants that provide information supporting the responses in the Staff Report.

Staff and the District's consultants have reviewed all of the information presented and have concluded that there is no justification to revise either the reservoir repair design concept or the conclusions stated in the letter to your Board dated June 26, 1992, and the supplemental Board letter dated August 14, 1992, and that the requirements of the California Environmental Quality Act (CEQA) have been met.

Board Committee Assignments

This letter is referred for action to:

The Engineering and Operations Committee because of its jurisdiction over the initiation, scheduling, contracting, and performance of construction programs pursuant to Administrative Code Section 2431(b); and

The Finance and Insurance Committee because of its jurisdiction over appropriations pursuant to Administrative Code Section 2441(d).

Recommendation

ENGINEERING AND OPERATIONS COMMITTEES FOR ACTION.

It is recommended that your Committee reaffirm its action taken on August 19, 1992, approving the following items:

1. That the Final Environmental Impact Report (FEIR) for the Garvey Reservoir Restoration Project has been completed in compliance with the California Environmental Quality Act, and that your Board has reviewed and considered the information contained in the FEIR prior to approving the project, and adopt the Findings and Mitigation Monitoring Plan.

2. That your Board approve the preferred Hypalon liner alternative for the restoration of Garvey Reservoir.

3. That your Board adopt the Resolution which acknowledges the City of Monterey Park's concerns with the project.

4. That your Board, consistent with the provisions of Administrative Code Section 8113, authorize the General Manager to have all work performed, and delegate to the General Manager the authority to award contracts in form approved by the General Counsel for repair of Garvey Reservoir.

FINANCE AND INSURANCE COMMITTEE FOR ACTION.

It is recommended that your Committee reaffirm its action taken on August 20, 1992, approving the following items:

1. Certify that the Final Environmental Impact Report (FEIR) for the Garvey Reservoir Restoration Project has been completed in compliance with the California Environmental Quality Act, and that your Board has reviewed and considered the information contained in the FEIR prior to approving the project, and adopt the Findings and Mitigation Monitoring Plan.

2. That your Board authorize the appropriation of \$28,000,000 from the 1991 Revenue Bond Construction Fund to finance all estimated costs of repair to Garvey Reservoir. This appropriation will be designated No. 640.


for Carl Boronkay

TJR/SEV:ly
(garvey-2.sev-942)

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ADJOURNED REGULAR MEETING OF THE
BOARD OF DIRECTORS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

August 20, 1992

12:30 P.M.

Re: 8-3 Authorize

(1) Appropriation No. 640 in the amount of \$28,000,000 to finance all estimated costs for repair of Garvey Reservoir;

(2) the General Manager to award contracts;

and

(3) certify review of environmental documentation by adopting form of Resolution.

(E&O F&I) [Previously mailed in July as Item 8-12]

**CERTIFIED
COPY**

1 CHAIRWOMAN KRIEGER: Board Secretary John
2 Killefer, please call the roll.
3 DIRECTOR KILLEFER: Abernathy.
4 DIRECTOR ABERNATHY: Present.
5 DIRECTOR KILLEFER: Barker.
6 DIRECTOR BARKER: Present.
7 DIRECTOR KILLEFER: Blake.
8 DIRECTOR BLAKE: Present.
9 DIRECTOR KILLEFER: Boen.
10 DIRECTOR BOEN: Here.
11 DIRECTOR KILLEFER: Brandt.
12 DIRECTOR BRANDT: Yes, sir.
13 DIRECTOR KILLEFER: Brewer.
14 DIRECTOR BREWER: Here.
15 DIRECTOR KILLEFER: Brick.
16 DIRECTOR BRICK: Yes.
17 DIRECTOR KILLEFER: Davenport.
18 DIRECTOR DAVENPORT: Yes.
19 DIRECTOR KILLEFER: Ferguson.
20 DIRECTOR FERGUSON: Here.
21 DIRECTOR KILLEFER: Foley.
22 Absent.
23 Frahm.
24 DIRECTOR FRAHM: Here.
25 DIRECTOR KILLEFER: French.

1 DIRECTOR FRENCH: Here.
2 DIRECTOR KILLEFER: Gage.
3 DIRECTOR GAGE: Here.
4 DIRECTOR KILLEFER: Garcia.
5 DIRECTOR GARCIA: Here.
6 DIRECTOR KILLEFER: Goldsworthy.
7 DIRECTOR GOLDSWORTHY: Here.
8 DIRECTOR KILLEFER: Griffen.
9 DIRECTOR GRIFFEN: Here.
10 DIRECTOR KILLEFER: Hill.
11 DIRECTOR HILL: Here.
12 DIRECTOR KILLEFER: Ibbetson.
13 DIRECTOR IBBETSON: Here.
14 DIRECTOR KILLEFER: Jones.
15 DIRECTOR JONES: Here.
16 DIRECTOR KILLEFER: Kazarian.
17 DIRECTOR KAZARIAN: Here.
18 DIRECTOR KILLEFER: Morris.
19 DIRECTOR MORRIS: Here.
20 Murph is absent.
21 O'Neil.
22 DIRECTOR O'NEIL: Here.
23 DIRECTOR KILLEFER: Reed is absent.
24 Rez.
25 DIRECTOR REZ: Here.

1 Scott. Absent.

2 Shaw.

3 DIRECTOR SHAW: Present.

4 DIRECTOR KILLEFER: Stamper. Absent.

5 Still.

6 DIRECTOR STILL: Yes.

7 DIRECTOR KILLEFER: Stickney.

8 DIRECTOR STICKNEY: Yo.

9 DIRECTOR KILLEFER: Stuart.

10 DIRECTOR STUART: Here.

11 DIRECTOR KILLEFER: Ward.

12 DIRECTOR WARD: Here.

13 DIRECTOR KILLEFER: Webster. Absent.

14 DIRECTOR KILLEFER: Witt.

15 DIRECTOR WITT: Here.

16 DIRECTOR KILLEFER: Wysbeek.

17 DIRECTOR WYSBEEK: Here.

18 DIRECTOR KILLEFER: Young. Absent.

19 Madam Chair, you have a quorum.

20 CHAIRWOMAN KRIEGER: Thank you. A quorum is

21 present.

22 * * * * *

23 MR. MARKAM: My name is Joseph Markam from

24 Monterey Park. I live right below the reservoir. I am

25 quite concerned about leaks on reservoirs. I worked on

1 two different ones for the Bureau of Reclamation, having
2 experience with trying to keep them from leaking and
3 trying to maintain canals, and so forth.

4 CHAIRWOMAN KRIEGER: Mr. Markam, are you
5 addressing a subject which the group is here to talk on?

6 MR. MARKAM: I believe so. In regards to the
7 Garvey Reservoir.

8 A VOICE: It is item 8-3.

9 CHAIRWOMAN KREIGER: Yes, I hear what you are
10 saying. I realize you were coming, and I think there
11 are some 18 of you, and we have had one full day's
12 hearing. We also have the City of Monterey Park people
13 here who have some slides that they wish to show, and we
14 are going to try, because of a very long agenda, to --

15 MR. MARKAM: I will get it done quick.

16 CHAIRWOMAN KRIEGER: I would like to tell you
17 what my plan is and hope that it will work out for you.
18 That we will see the city's slides, and we will give you
19 15 minutes to either choose one person to speak for you
20 or each of you speak one minute. This is 15 minutes for
21 the city.

22 Now, you have to understand -- excuse
23 me. I have all kinds of sympathy for your problem. I
24 have sat in many meetings, listening and hearing and
25 hoping that we could arrive at a negotiated peace. The

1 fact that we have had one day in which the engineering
2 and operations committee and the finance committee heard
3 as many and as much as wanted to be said seems to me to
4 have been very fair.

5 The fact that you have come and the fact
6 that we will, once again, give a half hour, 15 minutes
7 to the city presentation and 15 minutes to the group,
8 you can choose one spokesman or each of you speak, but
9 at this point I would like to have the city present its
10 case.

11 MR. MARKAM: Well, I present for the city. I
12 am here at this stand, and I think I should have a
13 chance, being as I got the gumption to get up here and
14 talk --

15 CHAIRWOMAN KREIGER: I admire that, and you may
16 take your minute now.

17 MR. MARKAM: All right. The people are really
18 worried about their -- especially if they fill that
19 reservoir and why they didn't have it filled only -- God
20 only knows that they didn't have it filled when we had a
21 rash of earthquakes there.

22 And I was living right under that thing,
23 and I felt that earthquake. It seemed like it lasted a
24 minute. Now, that reservoir wouldn't have stood that
25 water slushing around in there with the earthquake we

1 had.

2 Besides that, the location of the
3 reservoir is so bad. It sits right above the residences
4 and the businesses and the whole city. If that thing
5 ever breaks, it will take everything from the Atlantic
6 hills, clear east to El Monte, north to South San
7 Gabriel, South Pasadena, and clean out the whole Valley.

8 But my concern is this: If that thing
9 leaks -- and it will. That gasket they are going to put
10 in there isn't going to stop it, and it will all start
11 turning wet around there.

12 Our property isn't going to be worth the
13 paper the deed is written on because it is just going to
14 depreciate that property to no end. And there has been
15 property turned wet there, and they have not settled
16 with those people. They are still dug up from the
17 excavation on their surveys.

18 CHAIRWOMAN KREIGER: Thank you for expressing
19 your concern.

20 MS. MARTINEZ: Excuse me. In addition to the
21 City of Monterey Park, there are also representatives
22 from other entities here. And I represent the Garvey
23 School District and the president of the board. We
24 serve as Rosemead, San Gabriel, and Monterey Park. In
25 addition, I believe that there are also members or

1 representatives from the state legislature here as well.
2 For you to roll us up into one group and give us a total
3 of 15 minutes, I think, is unconscionable. I think you
4 need to give us additional time so that the various
5 other entities --

6 CHAIRWOMAN KRIEGER: I wouldn't want to be
7 unconscionable. I feel that those of you who have not
8 appeared before and who would like to speak -- a very
9 short time, please -- you should be given some time, but
10 would you give us the names or give your name when you
11 come forward, but would you please let the City of
12 Monterey present --

13 A VOICE: We do not intend to take away from
14 their time, but what we are asking you for is an
15 additional allotment of time because we don't want to
16 cut into their presentation.

17 CHAIRWOMAN KREIGER: Thank you.

18 The City of Monterey, please. Monterey
19 Park. Excuse me.

20 Director Mason.

21 DIRECTOR MASON: Madam Chair, point of order.
22 We are off of our agenda. The purpose for public
23 comment time is for items not scheduled on the agenda to
24 be heard -- to be rescheduled at another time. We have
25 an agenda before us today, and can we hear these people

1 speak when that item is before us?

2 CHAIRWOMAN KREIGER: We have discussed that
3 with the various items, and we are going to have a
4 closed session following this meeting. It would make
5 for less confusion if we heard from Monterey Park people
6 now. If there are objections -- Director Wysbeek.

7 DIRECTOR WYSBEEK: Point of order. If you are
8 going to do that, if we are going to do that, could we
9 take the item out of the agenda now, address it, and get
10 it over with and not come back.

11 I see by majority vote -- let's take
12 that item out of the agenda now and get it over with so
13 we will have some organization.

14 CHAIRWOMAN KREIGER: Director Knauft.

15 DIRECTOR KNAUFT: If it is agreeable with you,
16 Madam Chairman, I will make the motion right now.

17 CHAIRWOMAN KRIEGER: It is agreeable.

18 DIRECTOR KNAUFT: All right. Let me make the
19 motion, Mr. Witt.

20 Following its review of the general
21 manager's June 26, 1992, regarding appropriation number
22 640 for \$28,000,000 to finance all estimated costs for
23 repair of Garvey Reservoir, certification of final
24 environmental impact report and delegation of power to
25 award contract, and the supplemental informational

1 letter dated August 14, 1992, regarding report on
2 special joint meeting of the E & O and F & I committees
3 to receive and consider presentations regarding
4 Metropolitan's proposed repairs to Garvey Reservoir, the
5 committee recommends approval of recommendations
6 contained in the June 26, 1992, letter and, Madam
7 Chairman, I so move.

8 MR. WITT: I second it.

9 CHAIRWOMAN KREIGER: It's been moved and
10 seconded. Is there any discussion?

11 Seeing none, those in favor, aye.

12 THE BODY: Aye.

13 CHAIRWOMAN KREIGER: Those opposed, no.

14 A VOICE: No.

15 CHAIRWOMAN KREIGER: It is carried.

16 Yes, Director Davenport.

17 DIRECTOR DAVENPORT: Can I make a statement
18 also?

19 CHAIRWOMAN KRIEGER: Yes.

20 DIRECTOR DAVENPORT: I have prepared a
21 statement. This issue of the Garvey Reservoir has been
22 escalated from a purely engineering problem to an
23 emotional one. The necessary compromises and
24 accommodations have not been accomplished to permit this
25 project to proceed as needed at a pace to again allow it

1 to perform its function in the M.W.D. system.

2 If these accommodations are not brought
3 about, the project, if ever accomplished, will not be
4 for the \$28,000,000 we just approved and will be far in
5 the future after the courts decree that the necessary
6 accommodations are accomplished. We lose sight of the
7 fact that good engineering requires compromise.

8 And I happened to take this from an old
9 engineering text. A gentleman named Smithson, who was
10 one of the first civil engineers, said this in 1612.
11 Thank you.

12 CHAIRWOMAN KREIGER: Thank you.

13 Director Gage.

14 MR. GAGE: Chairwoman Krieger and Directors, I
15 gather we are now going to deviate from the 15-minute
16 policy that you set out earlier. I wonder if we might
17 set some parameters that we can stick to since any
18 number of us spent hours listening to the testimony
19 earlier, and we have listened to it as a whole between
20 the F & I committee and the E & O committee, and then
21 again in F & I and E & O today and yesterday.

22 It seems to me reasonable to set
23 parameters within which we will expect the dialogue to
24 take place today, and we have not deviated from what you
25 indicated earlier, and I wonder if we might establish

1 some criteria that we can enforce as we move forward.

2 CHAIRWOMAN KRIEGER: The one part that we have
3 not set is the timing for those who are surprises as far
4 as those here to be heard. Two minutes for each one of
5 those who have never been heard before.

6 DIRECTOR GAGE: It is certainly fine with me.

7 CHAIRWOMAN KREIGER: Director Wysbeek and then
8 Director Madigan.

9 DIRECTOR WYSBEEK: Madam Chair, with approval
10 of the board, I would like to make a suggestion. We
11 give 15 minutes to Monterey Park city, 15 minutes to the
12 remaining of those that have not been heard of other
13 organizations, like the lady from the school board
14 mentioned, and 15 minutes, a maximum of 45 minutes
15 total, and I would urge that those who speak present new
16 evidence not heard before.

17 DIRECTOR WITT: Second the motion.

18 CHAIRWOMAN KREIGER: Director Madigan.

19 DR. MADIGAN: Thank you, Madam Chairman. I
20 want to be clear what we voted on. It is my
21 understanding that this item is now before the house.
22 That the purpose of that vote was to place this matter
23 before us at this point in the agenda and not a motion
24 to approve the item. Am I correct?

25 VOICES: Yes.

1 DIRECTOR MADIGAN: Thank you.

2 CHAIRWOMAN KRIEGER: Now, I want to be sure
3 that we understand what Director Wysbeek said because
4 that does not give the members at large from Monterey
5 Park, the citizens at large, any time.

6 DIRECTOR WYSBEEK: I am not taking their 15
7 minutes away. I am adding 15 minutes only.

8 A VOICE: We've got the rest of our lives.
9 What's 15 minutes? You're damn right it gets emotional.
10 Our homes are involved.

11 CHAIRWOMAN KREIGER: We are going to hear from
12 the city people from the City of Monterey Park. Now, 15
13 minutes. The mayor? Who is going to be the spokesman?

14 MAYOR KIANG: Good afternoon, Madam Chair,
15 members of the board. My name is Sam Kiang. I am the
16 mayor of the City of Monterey Park.

17 First of all, I want to thank the
18 engineering and finance committee for holding a special
19 meeting on August the 11th to allow the City of Monterey
20 Park to present our responses.

21 We appreciate the fact that we were
22 given adequate time for the presentation, but I must
23 also point out that, during our most important
24 presentation in the afternoon, all but six directors had
25 left.

1 It is obvious from the attendance record
2 that the decision to approve the certification of the
3 E.I.R. was all but a foregone conclusion. I was
4 appalled by the lack of interest and concern shown by
5 subcommittee members.

6 Since most of the subcommittee members
7 who voted yesterday to recommend certification did not
8 have the benefit of hearing the city's technical
9 presentation, I would urge you, Madam Chair, to accord
10 at least our consultants and experts sufficient time to
11 make a reasonable presentation and an opportunity to
12 rebut your staff's response to our presentation. And I
13 urge you not to limit the speakers to this two-minute
14 thing.

15 I feel the residents have a right to
16 expect that the board would at least make a decision
17 based on all the available information. I also wish to
18 point out that it is not the city's responsibility to
19 prove beyond a reasonable doubt that the E.I.R. is at
20 fault.

21 We have never intended to do so, and we
22 are limited by our resources. What we have done is to
23 present to the board initial credible evidence by an
24 equally reputable member of the profession. That there
25 are areas which your staff have overlooked and which

1 C.E.Q.A. requires that you investigate fully before
2 approving the E.I.R.

3 I have submitted to each of you a letter
4 which explains in detail the reasons for the city's
5 objection to approving the E.I.R. in its current form.
6 In the interest of time, I will not read the whole text.
7 Basically, I pointed out in the letter the numerous
8 inadequacies of the E.I.R., the risk to life and
9 property that are overlooked, and the need to
10 investigate seriously and in good faith other safer
11 alternatives.

12 Also, I would like to remind you of a
13 resolution adopted by the city council in our last
14 meeting opposing the certification of the E.I.R. As
15 mayor of the city, it is my duty to protect the welfare
16 and safety of our residents.

17 At this point I am simply not convinced
18 that having some 500,000,000 gallons of water sitting on
19 top of three active faults will be safe for the
20 residents living around it. I am sure you are aware
21 that seismic activities have increased considerably in
22 this region recently.

23 What this all means in terms of the "Big
24 One," no one knows. Not your experts, not our experts;
25 but I do know the residents regard the reservoir as a

1 time bomb and are fearful for their life and property.
2 Your own E.I.R. report indicates that 20,000 people
3 would have to be evacuated in the event of a dam
4 failure.

5 Now, you might rely on your expert's
6 conclusion in dismissing such apprehension as
7 over-reaction, but, believe me, if you or your family or
8 someone you care for are living below 50 feet of water,
9 you will understand this fear.

10 Misleading language from your
11 consultants, such as the stability of the dry reservoir
12 embankment would be guaranteed at all times. The risk
13 of catastrophic failure of the dams from a seismic event
14 is considered insignificant would do little to assure
15 the people who know the experts are known to be wrong.
16 Just look at the Oakland Freeway.

17 Under C.E.Q.A. you are required to
18 investigate all alternatives. Your report listed three:
19 No project, different construction designs, and
20 alternative locations. We do not agree with your
21 conclusions that the no-project alternatives and the
22 alternative site options are not feasible.

23 I also want to point out that
24 conspicuously absent is the inclusion of a limited use
25 reservoir. Unless the M.W.D. will perform a serious

1 study under limited use alternatives and fully address
2 the concerns raised by our experts and consultants, I
3 maintain that an E.I.R. is seriously flawed, and as
4 board members, you should not vote on it.

5 In closing, I want to clearly state that
6 should M.W.D. ignore the safety of our residents, the
7 council will do everything within its power to ensure
8 the life and property of our residents are not
9 jeopardized.

10 Madam Chair, if I may just indulge you
11 for one more minute. I have a letter from the Alhambra
12 School District by Steven Perry, president of the board.
13 They have passed a resolution urging M.W.D. not to
14 certify the E.I.R.

15 In the interest of time, I will, just
16 with your permission, read the resolutions.

17 "Now, therefore, the governing
18 body of education of the Alhambra School
19 and High School Districts does hereby
20 resolve, declare, determine only as
21 follows: Section 1. That the E.I.R.
22 prepared by Metropolitan is seriously
23 flawed and an inherent risk of
24 proceeding with the proposed project and
25 thereafter operating the Garvey

1 Reservoir are significant and pose a
2 serious threat to the safety and
3 property of a great number of residents
4 of the City of Monterey Park.

5 "That for all of the reasons
6 set forth above, Metropolitan should
7 explore other reasonable and safer
8 alternatives for the restoration and use
9 of the Garvey Reservoir or conclude that
10 no project under the circumstances is to
11 correct an appropriate environmental
12 alternative. That the City of Monterey
13 Park should be given adequate time to
14 fully explain the city's objections at a
15 regular meeting of the board of
16 directors and prior to the board voting
17 on approving the project."

18 Thank you, Madam Chair.

19 CHAIRWOMAN KREIGER: Is there a presentation by
20 the city?

21 MAYOR KIANG: Yes. I believe Councilwoman Judy
22 Chew will make a statement.

23 MS. CHEW: I am Judy Chew. I am a
24 councilperson and former mayor of the City of Monterey
25 Park.

1 From my personal observation, I have
2 seen the damages to houses and public facilities caused
3 from seepage of water by the Garvey Reservoir after the
4 Whittier earthquake of 1987. I know that property
5 values have declined as a direct result of legitimate
6 concerns over whether the Garvey Reservoir would be put
7 back into operation.

8 I understand the fear and anxiety that
9 the proposed project is causing to people living in the
10 area. They literally fear for their lives and the lives
11 of their loved ones. This fear is more important than
12 any economic loss they now have and will continue to
13 sustain if the proposed project is approved by the
14 board.

15 Your board has enormous responsibility
16 over this matter. In the evacuation plan you have heard
17 that, in the case of a catastrophic failure, there would
18 be a need to evacuate approximately 20,000 residents of
19 the city.

20 Obviously, in the event of such a
21 catastrophe, one could suppose that many people would
22 die and be injured and there would be substantial
23 property destruction, perhaps in the billions of
24 dollars.

25 Because of the seriousness of the

1 matter, it is obvious that each of you will want to make
2 absolutely certain before deciding to approve, modify,
3 or reject the proposed project, that all reasonable and
4 pertinent available information is presented for your
5 consideration.

6 Moreover, before approving the proposed
7 project, you most certainly will want to be assured that
8 the proposed project posed a minimal risk to the safety
9 of the residents and that you have been apprised of the
10 significant environmental impacts which include risk to
11 human life and that all reasonable alternatives to the
12 project and all mitigation measures have been
13 investigated.

14 The E.I.R. submitted to the board for
15 certification fails to assess accurately the risk to
16 human life as the design is based upon erroneous
17 findings and assumptions.

18 Our consultant shows that there is
19 inadequate testing of the liner material, inadequate
20 forecasting of destructive earthquakes in the vicinity,
21 and inadequate analysis of what might cause the
22 embankments of the reservoir to fail.

23 Furthermore, the alternatives are
24 incomplete and misleading. There are other available
25 alternatives to achieve M.W.D.'s stated purposes for the

1 proposed project which the E.I.R. does not address.

2 In my experience as a public official, I
3 believe that generally there is an institutional
4 tendency of appointed and elected governmental officials
5 to support staff proposals without giving full attention
6 to opposing facts, opinions, and arguments. I urge you
7 to consider the city's case fully with an open attitude.

8 In closing, I respectfully request that
9 you deny the E.I.R. or at least delay certification so
10 that you make sure that every problem with a design is
11 thoroughly investigated and the reservoir does not cause
12 further harm to the residents of Monterey Park. Thank
13 you.

14 CHAIRWOMAN KREIGER: There is time now for the
15 slides and five minutes of the 15 minutes left.

16 MR. MCKNEW: Madam Chairman, my name is Tom
17 McKnew, and I am the attorney representing the City of
18 Monterey Park. At this time I would like to have our
19 three consultants address the board, and their address
20 will mainly concern itself with comments and erroneous
21 information portrayed in the August 14, 1992, letter
22 that was directed to each member of the board. Thank
23 you.

24 MR. SLOSSON: My name is Jim Slosson,
25 engineering geologist for the City of Monterey Park.

1 Item one of the reference that
2 Mr. McKnew just made deals with the existence of cracks
3 in the geologic setting. The response in that letter is
4 in error because there is a definite pattern to the
5 cracks. Had the data been researched and searched
6 properly, that pattern would have been obvious, and it
7 should have been considered.

8 The second item would deal with that
9 same basic reference. Had information, new concepts,
10 new data from the last approximately six earthquakes,
11 including Loma Prieta, Landers, and the one in
12 Mendocino, been utilized and utilized properly, the
13 pattern of the cracks along with the actual geologic
14 setting would have been better understood.

15 Number 3, the recent data regarding
16 faults in the general area of the Los Angeles basin was
17 not included as it should have been, and that would
18 change the interpretation.

19 Item 4, the monitoring plan -- we had
20 asked questions regarding the monitoring plan. I am not
21 presenting the doomsday concept, only that good
22 engineering and good design criteria will make a much
23 safer end product, and we would like to see the data
24 properly used so that there is not a catastrophe. And I
25 will pass it on to Dr. Johnson.

1 CHAIRWOMAN KREIGER: Thank you.

2 MR. JOHNSON: My name is Jeff Johnson.

3 Basically, I want to make one or two
4 statements, and that is regarding what I consider the
5 most critical finding of the staff of the Metropolitan
6 Water District, and that is regarding the origin of the
7 tension cracks.

8 I stated that the position of the origin
9 of tension cracks is from randomly situated,
10 geologically old fracture patterns in the foundation
11 material. Basically I would like to indicate that,
12 number one, is that they are not old. They are opening
13 right now, and they just opened in the last few years;
14 otherwise, there wouldn't have been a leak; so that is
15 an erroneous statement.

16 Number 2 is that they are not random.
17 If anyone knows what random means is that is an equal
18 probability of an occurrence in any direction. That is
19 strictly not the case. In order to prove that, it would
20 take a detailed, statistical analysis of it, and it was
21 simply not presented in this particular document.

22 The other thing is that I would like to
23 indicate is that this particular document that was
24 written on August 14 is not a response and/or a
25 compromise to anything that was presented by the City of

1 Monterey Park.

2 And, in fact, the only information that
3 was presented by either the consultants or the D.S.O.D.
4 regarding our conclusions regarding the origin of
5 tension cracks was that M.W.D. could not take or measure
6 accurately the distance between two points, and that was
7 regarding the horizontal survey of the reservoir that
8 has taken place that shows that the reservoir is in
9 sheer and is not just merely being uplifted.

10 So it seems to me that this is not a
11 critical analysis or a scientific document in any way
12 regarding what was presented by the City of Monterey
13 Park. And in final point, I would strongly suggest that
14 this particular environment will lead to too much
15 posturing by consultants.

16 May I suggest in the future that you
17 allow the consultants to sit across the table in front
18 of a panel such as was convened by the D.S.O.D. and have
19 a free discussion of all technical issues. At that
20 particular point, simplified statements that we can
21 design for anything or something is merely random would
22 not fly in that particular environment.

23 I have been involved in situations like
24 that for a number of years, and those comments are
25 simply unscientific. They have no basis in analysis and

1 simply do not satisfy any rigorous engineering or
2 scientific test.

3 The final thing I would like to say is
4 that the analysis that was presented, consultants for
5 the M.W.D. did not take into consideration what I
6 consider another viable option, the origin of tension
7 cracks.

8 Thereby the analysis does not take into
9 consideration the possibility for surface fault rupture
10 across the embankments nor does it consider a large
11 event underneath the structure. In that sense you are
12 only seeing a very small portion of the picture.

13 Thank you for your attention.

14 CHAIRWOMAN KREIGER: Thank you.

15 A VOICE: Please speak louder. It's hard to
16 hear.

17 A VOICE: The microphone is not working or
18 something.

19 CHAIRWOMAN KRIEGER: That was a very tall man
20 and a short microphone. I'm sorry.

21 MR. YING: Now we have a short man with the
22 proper height of microphone. My name is Bin Ying. I am
23 a consultant for the City of Monterey Park. We were
24 asked to do an independent evaluation of the seismic
25 stability of the Garvey Reservoir dam.

1 I want to particularly thank you that
2 you allow me to present just a cover for the overhead.
3 This has become absolute and necessary because it was
4 only necessary I received a facsimile from the city
5 which summarized August the 14th report from M.W.D.
6 staff to you, ladies and gentlemen of the board.

7 There are quite a few points exclusively
8 dealing with our report, and I only wanted to bring out,
9 very simply, three points. Clearly, either we are not
10 communicating or clearly there is misrepresentation of
11 the data.

12 With that introduction, I will tell you
13 where our data is misinterpreted. Then I will tell you
14 what impact it may have to this project.

15 May I proceed to the --

16 CHAIRWOMAN KREIGER: Yes.

17 MR. YING: One of the first items that the
18 staff reports indicates, it is saying is that the strong
19 motion record -- I will continue to speak because time
20 is limited.

21 The consideration was that the peak,
22 average peak acceleration was .8G. That is not true.
23 The peak acceleration is .8G. In fact, we have analyzed
24 other peak accelerations as well, like .6G, which is
25 exactly the same acceleration used by the staff.

1 It is clear, you can see, that it is the
2 peak. This .8G only peaked once. We did not have an
3 average peak .8G as indicated in your report.

4 Secondly, we used more than one strong
5 motion record and, in fact, two-thirds of our analysis
6 was dealing with the .6G. It is so easy to verify. It
7 is in our report.

8 The second point I want to bring out is
9 that, if you look into the reservoir and the embankment,
10 a couple of things stands out. One is the cross-section
11 analyzed happens to be along a ridge line. There are
12 two natural creeks flow through here. Natural creeks
13 flow through here.

14 On the ridge line, naturally your
15 monitoring of the water level are likely to be low.
16 Moisture content to be lower -+ moisture content in the
17 valleys or the associate valleys naturally will be
18 higher.

19 The staff analyzed the one on the ridge
20 line. End results, a shallower, lower fill of the dam
21 embankment. We analyzed one of the cross-sections
22 through this creek.

23 We did not, nor do we intend it to, we
24 believe we don't have the resources and our burden of
25 proof to run other tests. The moisture content

1 saturation was a big point of contention, saying that,
2 hey, this information in here is faulty.

3 If you look into available piezometers,
4 two out of eight, that represents 25 percent, are
5 nonperforming, according to the staff. In that case,
6 what is the criteria how well to perform on these? I
7 think these are some open questions.

8 Besides, maybe the main point in here is
9 we did not postulate. We analyze a range of the
10 information to evaluate the soil properly, and we found
11 that the deformation is large enough under unsaturated
12 conditions for us to be apprehensive. Very
13 apprehensive.

14 I think that probably leads to the final
15 comment I have -- I have some other slides. I realize
16 my time is running out -- which is this: When you look
17 at the problem, what we really did was to present with
18 the data available. I call your attention doesn't have
19 to look at the piezometers.

20 Look into point number 4. I have the
21 slides in here. You can take a look at it. The
22 moisture content of saturation is indeed there. The
23 point here is it doesn't have to be totally saturated.
24 We never did say it was saturated.

25 I think that another point I am somewhat

1 dismayed with is that this is not a discussion about one
2 computer program to another. We were accused of using
3 old data. The law of physics, ladies and gentleman,
4 does not change with time.

5 I would rather use a tried-and-true
6 methodology rather than use a so-called state of art one
7 that has not been verified with a limited amount of
8 data. We are engineers. Many of us are with this
9 background. For a well-established, two-decade old
10 program has been used around the world.

11 Many dam has been verified, confirmed,
12 analyzed, using this program which we adopted. That may
13 be a side point, but if I don't say it, I will be not
14 quite doing justice to my firm.

15 I do thank you very much for your
16 attention. I merely want to point out that they are
17 reasonable doubt in our mind. There are compelling
18 reasons for us to examine critically the E.I.R. final
19 wording of it. Are we really that sure. Thank you.

20 MR. MCKNEW: Because of the time limit, Madam
21 Chairman and members of the board, we are dispensing
22 with a presentation by the city manager.

23 Also, I am going to dispense with
24 covering the list of objections that the city has posed
25 to the E.I.R. It is set out in some 18 pages in a

1 letter that I represented in early July or mid July.
2 However, I will conclude with this admonition: This
3 board has a responsibility to understand the E.I.R., to
4 inform itself and determine whether or not that E.I.R.
5 is adequate and if it provides you with the necessary
6 information to make an informed decision. I submit that
7 it does not.

8 This isn't a battle of experts. It
9 wasn't intended to be. When the city took this project
10 on, it did not know what the results would be from the
11 experts that it employed. We did not give them
12 direction nor did we indicate a bias.

13 It was an intelligent, independent
14 review by three prominent engineers. We are not
15 matching our engineering with your engineering. To do
16 so, in my view, would not be adequate. It would not
17 completely, in my view, directly challenge the E.I.R.

18 What we are saying is you didn't use
19 sufficient data in making your engineering analyses, and
20 some of the information you did use was faulty.

21 In closing, I ask that the board delay
22 its decision. We accomplish nothing as a city if you
23 delay and eventually decide to go ahead, but I would ask
24 that you have the time and not speed up the process if
25 there is any doubt in your minds.

1 We have raised questions. I think you
2 are entitled to a legitimate response. You did not
3 receive it by the August 14 letter. You also have the
4 option of a no-project alternative. There is no waiting
5 in the E.I.R. of other projects that you have underway
6 or will consider through the year 2020.

7 You do have a pamphlet estimating the
8 cost of those projects will cost and that there are a
9 number of projects on line. There is no mention of the
10 effect those would have on the Garvey Reservoir or
11 whether the Garvey Reservoir, when you consider those
12 projects, is needed to satisfy the seven criteria set
13 forth in the E.I.R.

14 There are other alternatives. Those I
15 have mentioned previously, those are not new. You asked
16 that I not talk about anything other than something that
17 we have not addressed previously, and I have tried to
18 respect that.

19 I have no other comments to make at this
20 time. I thank the board for its consideration, and I
21 especially thank the few of you who did stay for the
22 entire day and listen to our consultants in early July.
23 Thank you very much.

24 CHAIRWOMAN KREIGER: At this point, would the
25 lady in the red jacket, the school person, come forward.

1 MS. MARTINEZ: My name is Diane Martinez. I am
2 the president of the Garvey Board of Education. We
3 represent the children in the cities of Rosemead,
4 Monterey Park, and San Gabriel. Sitting behind me is
5 Liz Diaz, who is also a member of our board.

6 By unanimous consent of the board, I am
7 here today to represent 7,000 special interests, and
8 those 7,000 are obviously our children. I don't want to
9 lock you up in rhetoric. I don't appreciate your
10 laughter. We are very concerned about those children.

11 Unlike your special interests, our
12 special interests don't have \$5,000,000 to lobby on your
13 behalf. Unlike your special interests, our special
14 interests have not had a chance to graduate from our
15 school system, and your special interests may see that
16 that doesn't happen.

17 We are concerned about those children.
18 I live on New Avenue in Monterey Park. My mother lives
19 there. My daughter, who is only 15, lives there. My
20 father, who is a United States Congressman, lives there.
21 We are very concerned about our community.

22 We don't care about your special
23 engineering problem. We care about the future of our
24 residents in our community.

25 Earlier I was almost heartbroken to hear

1 you pray for people in Bosnia and Kenya and talk about
2 your fellow man, yet you look at us with some of these
3 smiles, halfway looking like you are barely tolerating
4 us when we are here to talk about what we are concerned
5 about as your fellow man.

6 What I hope that you do is dig in your
7 hearts. Don't be arrogant. Pray for our children. The
8 next time you get up and you pray at the opening of one
9 of your meetings, I would like to hear you pray for the
10 children in Monterey Park and Rosemead and San Gabriel
11 and the citizens of Monterey Park.

12 There is no reason why these should not
13 be emotionnal issues for us. Five years ago I was an
14 emotional parent talking to a school board who did not
15 listen. I ran. I am now the president. You better
16 think about that.

17 People are not just some special
18 interest group. We really live there. We really care
19 about what we are talking about. Please don't be
20 arrogant with us. Please add us to your prayers.
21 Please listen to the City of Monterey Park. They are
22 giving you the engineering information that you are
23 asking about.

24 Delay this thing. Obviously your staff
25 has not done its job or there wouldn't be all these

1 people here today. Please, think about us.

2 CHAIRWOMAN KREIGER: Janet Lim.

3 MS. LIM: Honorable Chairperson and members of
4 the board of directors, my name is Janet Lim, and I
5 represent Assemblyman Javier Becera, assemblyman
6 representing the City of Monterey Park.

7 I have participated in and have followed
8 with great interest developments related to the damaged
9 Garvey Reservoir and environmental impact report
10 process. I believe that, before the board can certify
11 any E.I.R., it must address the valid concerns raised by
12 the residents of Monterey Park and surrounding
13 communities.

14 Residents are understandably fearful of
15 the potential dangers should the reservoir be restored.
16 The E.I.R. must fully allay these fears.

17 The City of Monterey Park has conducted
18 a fairly extensive evaluation of the E.I.R. and has
19 posed numerous questions regarding its adequacy and
20 completeness. It is my opinion that these valid
21 questions must be fully answered before certification of
22 the E.I.R. can prudently be considered.

23 After a review of the E.I.R. and
24 documents provided by the City of Monterey Park, I would
25 like to focus on two of these concerns.

1 Number one, earthquakes. As I raised in
2 my December 13, 1991, letter on the draft E.I.R., given
3 the proximity of the reservoir to numerous faults, the
4 peak acceleration of .06G used in the analysis does not
5 seem sufficient.

6 In studies conducted Bin Ying &
7 Associates, geotechnical consultants, obtained by the
8 City of Monterey Park, quote:

9 "Peak accelerations range from
10 0.6G to over 1.0G, with an average value
11 of approximately 0.8Gs from the
12 preliminary evaluation of the seismic
13 stability of the Garvey Reservoir
14 embankment July, 1992."

15 An additional city-retained consultant,
16 Slosson & Associates, finds, quote:

17 "If Garvey Reservoir site
18 geology and topography significantly
19 affected recording motion as noted in
20 the E.I.R., the use of 0.6G is not
21 conservative and a more realistic peak
22 acceleration estimate which should be
23 utilized would range from 0.7G to 1.0G
24 for a maximum credible earthquake loaded
25 in near proximity."

1 From their review and comments of the
2 Final E.I.R.

3 My second concern is that of the
4 incomplete project description. The exact composition
5 of the multilayer synthetic rubber liner system is not
6 finalized. There is, quote, "Continued design review
7 and evaluation of the proposed Hypalon repair plan to
8 improve the basic design concept."

9 There is, quote, "The possible addition
10 of a geotextile blanket-type material to protect the
11 bottom layer of Hypalon." The warning system so
12 important to detecting any seepage is also unclear. How
13 many remote recording piezometers will there be and
14 where will they be placed.

15 Until there are complete and
16 satisfactory answers to these and all questions raised
17 by the City of Monterey Park and concerned residents, I
18 cannot support the certification of the E.I.R.

19 Thank you for the opportunity to bring
20 my concerns directly to the board of directors. I look
21 forward to learning of your responses to the
22 aforementioned questions. Thank you. And I have
23 copies.

24 CHAIRWOMAN KREIGER: Phyllis Ravens.

25 MS. CHEVERA: I am a board member with the

1 Montebello Unified School District. May I please make
2 my presentation.

3 CHAIRWOMAN KREIGER: Would you yield to the
4 other?

5 MS. RAVENS: After her?

6 CHAIRWOMAN KRIEGER: But we do have to decide
7 and move along.

8 MS. RAVENS: If I don't get a chance --

9 CHAIRWOMAN KRIEGER: You will have a chance.

10 MS. CHEVERA: This will be brief.

11 My name is Barbara Chevera, and I am
12 with the Montebello Unified School District. I am a
13 board member, and we represent 33,000 school children
14 and 41,000 adult education students as well. The City
15 of Monterey Park is also, the students there -- we have
16 two schools in the City of Monterey Park.

17 Briefly, I am here to apprise you of the
18 fact that, after a thorough reading of the recent E.I.R.
19 report, the Montebello Unified School Board of Education
20 finds no reason to amend or retract their resolution
21 against the refilling of the Garvey Reservoir, and we
22 stand behind it as well today.

23 We, as elected advocates for the
24 children, who themselves cannot vote or be here and
25 place and place their trust in our decisions, feel it is

1 imperative that we protect their future safety, which
2 you cannot guarantee.

3 We already have a hazardous waste dump
4 in our backyard which is a threat to our children's
5 health. We feel an unstable reservoir will add an
6 additional threat to their future safety.

7 We find it interesting that, in the
8 conclusion regarding whether or not to build at
9 alternative sites, one of the rationale was that it
10 would generate inconsistencies with the City of Los
11 Angeles housing policies.

12 I say to you a reservoir in the City of
13 Monterey Park is inconsistent with the health and safety
14 of all of our children. Thank you.

15 MS. RAVENS: Members of the board, my name is
16 Phyllis Ravens.

17 There are three more reasons for never
18 reopening the reservoir, and they are located on the
19 1300 block of Kempton Avenue. Three homes located right
20 next door to each other have been extensively damaged by
21 water from the reservoir.

22 I imagine M.W.D. is feverishly working
23 to do the repair work. This work has been going on for
24 weeks, and you can ask those homeowners about the trauma
25 they have been going through.

1 Then we have to address the reprehensive
2 way M.W.D. has walked away from their responsibility to
3 pay for repairs to many of the homes on Fulton Avenue.
4 M.W.D. wants it both ways. M.W.D. is trying to use all
5 their clout to reopen the reservoir regardless of
6 resident and city opposition.

7 Yet this is the same company insensitive
8 to residents on Fulton Avenue fighting to get their
9 homes repaired and paid for. M.W.D. has acted in a most
10 irresponsible manner.

11 Your E.I.R. is flawed and worthless. No
12 one trusts your Hypalon liner, and your E.I.R. should
13 have been done by an independent company. M.W.D., you
14 are a miserable outfit. Neither the city nor its
15 residents need you or want you.

16 Build the reservoir in a city that uses
17 your water. You should just pack up and find another
18 home.

19 CHAIRWOMAN KREIGER: Next speaker, please. Wan
20 Loch.

21 MR. WAN: Good afternoon. Can you hear me?

22 CHAIRWOMAN KRIEGER: Yes.

23 MR. WAN: My name is Loch Wan. I am living at
24 7009 Fulton Avenue.

25 I feel the reservoir right there on my

1 roof, a shaky roof. I feel that any earthquake come,
2 that it might just rush down to my home. I live there
3 for 22 years.

4 I never notice that a reservoir there
5 until they have a bad seepage, and I am afraid that one
6 day it might collapse and I will be all buried under the
7 torrents of water. So since we have raise so many
8 question of the E.I.R. report. So I urge you to delay
9 on the E.I.R. report until we have an alternative or
10 suspend on the refilling of the reservoir. Thank you.

11 CHAIRWOMAN KREIGER: Thank you.

12 Susan Tanario.

13 MS. ANARIO: Good afternoon, Madam Chairman and
14 members of the board. I am here to put a human face on
15 the meeting today.

16 The water first showed up at my home,
17 and when you have two feet of water in your home and
18 pumps going off every three minutes 24 hours a day, it
19 is an emotional issue, not just an engineering issue.
20 We have had three years in which we have been in
21 litigation with the Metropolitan Water District.

22 Our claims for repair of our home have
23 been denied, and we certainly feel that the E.I.R. is
24 flawed, and we respectfully request that you think about
25 it, think about the human lives and delay the E.I.R.

1 Thank you.

2 CHAIRWOMAN KREIGER: Thank you.

3 Frank Cuda.

4 MR. CUDA: My name is Frank Cuda. I have lived
5 in Monterey Park since 1950. That is 42 years. The
6 reservoir was completed in 1954, which is about 38
7 years. I would like to say good afternoon, but from
8 where I stand I don't think it looks too good.

9 People in that area are living in fear.
10 If you open a reservoir with even half of the amount of
11 water, which I understand the capacity to 500,000,000
12 gallons of water -- I don't have to tell you all these
13 things. They have been said before.

14 So I want to try to curtail some of my
15 thoughts because, as I was sitting before we took the
16 salute to the colors, a gentleman, which I think was a
17 man of the cloth or a minister, was saying some words
18 that was running through my mind, and Miss Diane
19 Martinez stole my thunder, when the gentleman said let's
20 be kinder to people all over the world. And she summed
21 it up better than I can.

22 But what I am saying is, if the dam is
23 filled and those people live in terror and they are
24 terrorized, then you are nothing short of terrorists.
25 And I hate to say that, but it is true. It is true.

1 It's true, it's true.

2 If those people are terrorized, then you
3 are the terrorists. You are no better than Saddam
4 Hussein. You are no better than Colonel Qaddafi. You
5 are no better than the Ayatollah Khomeini.

6 Now, then, are you going to let these
7 people go to bed at night wondering whether they are
8 going to wake up in the morning and find their children
9 in the Long Beach Harbor?

10 Now, I would like to say thank you, but
11 from where I stand, I see nothing to thank you for
12 because it appears that your minds are made up.

13 Now, we have leaders from all over the
14 state. We have assembly people. We have people
15 representing the supervisor's office. We have
16 schoolteachers. We have people on the -- they are not
17 radicals. They are not people that are down here just
18 to be seen and heard. They are making sense with the
19 things they are saying.

20 Have you given us an independent
21 environmental report? No. It is a biased report made
22 up by your own people, and how could you stand here and
23 look us in the face and -- one gentleman from back
24 there, I heard him say we come here and we act
25 emotional.

1 You're damn right we are emotional. You
2 better believe it we are emotional when our kids are
3 laying there at night and we don't know if in the next
4 earthquake they are going to be swept out to the ocean.

5 I have faith in my leaders. I suggest
6 that you start to listen because right now our country
7 is going through somewhat of a trauma itself. We have
8 got people in Washington, D.C., that are insensitive to
9 our needs, and you are acting insensitive to what is
10 going on down there. Listen to what they are saying.
11 The words that the minister said before this meeting
12 took place and then we gave salute to the colors, were
13 they just words?

14 Come on now, people. Let's act grown
15 up.

16 CHAIRWOMAN KREIGER: Thank you.

17 MR. CUDA: I am not finished yet. You can
18 thank me when I am finished.

19 Now, I want to conclude by saying this:
20 Please, please, don't come down here and make smart-ass
21 remarks to these people over here that spent most of the
22 day. They should have brought the kids with them. But
23 to come down here and hear you say, "We are going to
24 give them a minute."

25 And you are going forget all about the

1 First Amendment of the Constitution where we have a
2 right to speak? Are you going to start telling us how
3 to live our lives while we are making life easy for the
4 rest of the world?

5 Now you can thank me if you want to.

6 CHAIRWOMAN KREIGER: Thank you.

7 David Pedrosa.

8 MR. PEDROSA: My name is David Pedrosa. I live
9 at 534 South Garfield.

10 Your Hypalon liner that is supposed to
11 replace the ten-foot liner that they told us at the
12 reservoir had that we found out didn't have no liner.
13 We have constantly been lied to by Metropolitan; so you
14 have to excuse my neighbors if they don't believe
15 anything you guys say because it has been constant.

16 Mr. Persson stated to us, before they
17 found out that they would have an E.I.R., that the
18 reservoir, if it were to be built today, wouldn't be
19 permitted to be built there. And now that they realize
20 that they got to have it, they are making all kinds of
21 allotments for it.

22 This liner -- lookit. That is a mesh.
23 That is an awfully big mesh. That is a finer mesh.
24 That is a real thin piece of plastic and like a
25 fiberglass -- looks like a sponge. And this thick one

1 here -- I am going to demonstrate how good your liner
2 is.

3 Look at that. You can stick a pin
4 through there, and this is what you are going to protect
5 the children with? There are three elementary schools
6 down the street from there, and apparently you guys
7 don't care about children. It is quite obvious.

8 This thing is supposed to hold
9 4,000,000,000 pounds? Because if you have 500,000,000
10 gallons in there, you have got approximately 4,000,000
11 pounds, and if that earth and dam gives way, there is no
12 way this thing is going to hold back. And try to
13 evacuate 20,000 people at one time. You cannot do it.
14 Thank you.

15 CHAIRWOMAN KREIGER: Thank you.

16 Robert Lujan.

17 MR. LUJAN: Ladies and gentleman, thank you for
18 letting me speak.

19 In a news item published July 13 by the
20 New York Times News Service, it stated that, because of
21 the recent Landers earthquake, the nation's most
22 dangerous fault, the San Andreas, just got more
23 dangerous.

24 Scientists now say the twin earthquakes
25 that struck on June 28 of this year near Landers and Big

1 Bear greatly increased the likelihood that the south
2 part of the San Andreas Fault will soon generate a
3 magnitude eight or greater earthquake.

4 Dr. Alan Lindh, L-i-n-d-h, of the U.S.
5 Geological Service, seismology branch, in Menlo Park
6 stated that Los Angeles should treat this as a final
7 warning. The southern end of the San Andreas Fault has
8 not erupted for 300 years, said Dr. Lucille Jones, an
9 expert on the Fault.

10 When it does, the shaking will be many
11 times stronger than the Landers quake and could last up
12 to three and one half minutes. That is three and a half
13 minutes. The Landers quake lasted for 32 seconds.

14 Several times I have heard experts from
15 the M.W.D. state on television that the reservoir has
16 withstood earthquakes for 30 years. What these experts
17 neglected to say, that in this area -- that this area
18 has only had two earthquakes of any significance in that
19 time period: the Sylmar quake and more recently the
20 Whittier narrows quake. And the reservoir failed at
21 that Whittier narrows quake.

22 I examined the liner that you propose to
23 use on the reservoir. It would be an excellent liner
24 for a large swimming pool if it could be installed in
25 one piece without any seams.

1 No one in this room can guarantee that
2 this liner which would have to be installed with
3 hundreds, if not thousands, of seams can withstand a
4 magnitude eight or greater earthquake shaking up for
5 more than three and a half minutes.

6 If this reservoir in Monterey Park
7 should suddenly fail because of an earthquake or any
8 other reason, there will be a great loss of life. These
9 lives will be on your conscience. The bottom line is
10 that the people of Monterey Park should not be subjected
11 to live in terror and stress nor should they have to
12 suffer the loss of property values.

13 Take your damn dam and stick it
14 somewhere else, or better yet, eliminate it altogether.
15 It has been out of operation for two years, and no one
16 that I know of in the area the dam serves has gone
17 thirsty. Thank you.

18 CHAIRWOMAN KREIGER: Ruth Wilner.

19 MS. WILNER: Good afternoon. This has been my
20 first opportunity to attend the meeting; so I have not
21 spoken before.

22 I recognize that you have had your fill
23 of this subject, but remember, we are the ones that have
24 to live with your decision to fill a reservoir that was
25 not properly constructed and the earthquake damage done

1 verified the lack of the integrity of the reservoir.

2 I am here to support our city's
3 position, questioning the E.I.R. and to oppose
4 certification and to ask you to delay your decision.
5 M.W.D.'s credibility is also questionable in the minds
6 of our residents, considering that you did not
7 acknowledge the failure in a timely manner and denied
8 responsibility for damages to homes.

9 You are amongst other state agencies who
10 are intent on carrying out projects without regards to
11 the health and safety of those in their path.

12 Your disregard for the professional
13 evaluations of the E.I.R. by Monterey Park consultants
14 and the need for us to be here today to get your
15 attention as you prepare to approve appropriation 640 is
16 distressing to many of us.

17 I realize that you cannot give us a
18 hundred percent ironclad guarantee, but you don't even
19 come close. The reservoir has been closed a few years,
20 and I assume you have been able to manage these many
21 years, and being that we have limited time, I believe
22 that I could cite other examples where M.W.D. said they
23 couldn't do things like lining the canals during
24 peripheral canal discussion; so there are things that
25 can be done when you want to do it.

1 So please listen to us and to our
2 consultants because we in Monterey Park cannot afford
3 another failure. Thank you.

4 CHAIRWOMAN KREIGER: Robert Levine.

5 MR. MCKNEW: Madam Chairman, I would like to
6 intrude for just a moment. Dr. Ying has left his laser
7 pointer. I have been drafted to get it for him, and I
8 would also like to submit Dr. Ying's remarks in reply
9 to --

10 Thank you very much.

11 MR. LEVINE: Ladies and gentleman, my name is
12 Robert Levine. I have lived in this Monterey Park for
13 about 43 years.

14 I am going to try to talk a different
15 language than most people. I will try not to be
16 emotional. I will talk to engineers, geologists,
17 businessmen. Let's talk about risk factor. What was
18 the risk factor when they built the reservoir and they
19 found cracks in it and they decided to go ahead and
20 build it anyhow?

21 What was the cost involved?

22 And now if we make the minimal repairs,
23 what will they cost?

24 And what is the risk factor, and who is
25 taking the risk?

1 If you do the job right, what is the
2 cost, and what is the risk factor?

3 Do you understand what I am saying?

4 I realize that to do that reservoir
5 right is going to cost a bundle of money to put a proper
6 clay liner in it and put the Hypalon on top of that
7 because -- well, I made the statement that I figured
8 that the system of the Laguna Salada, the Elsinor, the
9 Whittier, the Workman Mill, the Highland Park, the
10 Verdugo, the San Gabriel, ties into the San Andreas
11 Fault at Lebec.

12 To me, it was capable of a 7.5. Vern
13 Persson says, "No. You are full of baloney," and this
14 and that and everything. But he says it is probably
15 good for a 6.8. And I stood up and reminded him that
16 that is only eight times greater than the Whittier
17 fault.

18 A 7.5 or even a 6.5, you could be
19 looking at three feet of vertical movement and upwards
20 to 20 feet of horizontal movement in the area of the
21 reservoir. Even if the earthquake is not on that
22 Highland Park Fault which runs underneath the reservoir,
23 the differential movement could cause a separation of 5
24 to 10 feet in the lining of that reservoir. And what is
25 the risk factor then, and what is the cost?

1 Am I getting across to you?

2 Do you understand what I am saying?

3 In other words, the decision that you
4 are going to have to make is what is the risk factor,
5 how much are we willing to spend. And if we go at it
6 wrong, how many lives will be lost? Because that is
7 what the risk factor is all about.

8 So I hope that you take what I am saying
9 seriously. I reminded the Monterey Park city council of
10 that Highland Park Fault probably five years before the
11 Whittier quake took place.

12 The fault underneath the reservoir is an
13 incline fault, and that in itself could mean that a
14 movement of that fault would be an up-and-down movement
15 more than a side-to-side movement. The reservoir is
16 built -- the north side is compacted. That is pretty
17 darn good, but the three other sides are native hills
18 which are made of layered alluvium. Layers of
19 decomposed granite and adobe which form perfect pipes.

20 With the liner that you have in there
21 now, it is not impervious to water. It passes water
22 like crazy, and if the Whittier quake would have
23 occurred at the time that they found water underneath
24 their homes on Fulton, I am telling you, that reservoir
25 would have gone.

1 There has got to be much greater
2 monitoring, and there is going to have to be a lot of
3 thought put into how much you are willing to spend to do
4 the job right.

5 I am not against the reservoir. I
6 realize that it is needed. If you want to put in a clay
7 liner and fill it half full, I would go along with it,
8 but to fill it to the top -- now, any time that they
9 filled the body of water, it has caused earthquakes in
10 the vicinity. Ask any geologist. The sheer weight of
11 that water causes earthquakes in that area.

12 Take it all into consideration before
13 you make your decision.

14 CHAIRWOMAN KREIGER: Mrs. Jerola?

15 Maybe I am not pronouncing it correctly.
16 Is it Gerola?

17 MRS. JEROLA: You can take another person. It
18 is mostly repetition.

19 CHAIRWOMAN KRIEGER: Thank you very much.

20 There are two others that have spoken at
21 one time: Gloria Turpin and Tina Martin.

22 MS. TURPIN: Gloria Turpin, 607 Harrison Road,
23 Monterey Park, citizen of the United States because I
24 feel I am in a foreign country right now.

25 Dear Sirs: I wish were a priest,

1 minister, or rabbi that I might invoke the spirit of
2 brotherhood so that you may search your hearts and minds
3 for the power to make a wiser and selfless decision. A
4 decision that would advise you to invest your
5 \$28,000,000 in reinforcing all your functioning
6 facilities instead of wasting it on a defunct and
7 damaged facility so that you, too, may be safe from
8 unrepresented seismic activity that has been plaguing us
9 lately and does not appear to be receding.

10 A house built on rock will stand longer
11 than a house built on sand. A reservoir built of
12 stone -- Silverlake -- will last longer than a reservoir
13 built of dirt: Garvey Reservoir.

14 In His name only can you do unto others
15 as you would have others do unto yourselves. I say do
16 not deal with so-called special interest groups as Adolf
17 Hitler and Joseph Stalin dealt with their special
18 interest groups. Amen.

19 CHAIRWOMAN KREIGER: Thank you.

20 The last speaker, Tina Martin, and then
21 we have a director who would like to speak. Tina
22 Martin.

23 MS. MARTIN: Good evening. And I graciously
24 want to thank you for giving us this opportunity, and it
25 was very beautiful that you started with a prayer that

1 you do. I am very glad to hear that you do start with a
2 prayer.

3 You do need to call upon a higher power
4 than yourself to make the decisions that you make, and I
5 thank Gbd that you do pray, and I hope that nobody ever
6 keeps you from praying. You need it. We all need it.
7 And like your prayer said, you were calling for people
8 from outside of our country.

9 I think it is time that we Americans
10 look back into our front yards and into our backyards to
11 see what is lacking in our own front and backyard, and
12 if it is a lack of sympathy for our own people, then we
13 need to examine ourselves.

14 I have a letter here from a gentleman
15 who told me to read this letter to you. He says:

16 "Dear Members of the M.W.D.

17 Board:

18 "As a resident of Monterey
19 Park and as District Director of the
20 West San Gabriel League of United Latin
21 American Citizens, I stand firmly
22 opposed to the reopening of the Garvey
23 Reservoir.

24 "Together with my wife and two
25 children, I have lived for eight years

1 in a home located only four blocks from
2 the reservoir. In that time we have
3 come to know most of our neighbors. For
4 all those years I have served as chair
5 of the neighborhood watch program on our
6 block.

7 "In all that time there has
8 been a united response from my neighbors
9 that they are against the reopening of
10 the reservoir. Since our homes would be
11 the first in line should any crack
12 develop in the reservoir, we are
13 concerned about the environmental impact
14 report which now proposes that the
15 reservoir is safe.

16 "There is no way that the
17 Garvey Reservoir can be safe as long as
18 this area continues to be a highly
19 active seismic region. While we remain
20 suspicious of the motives of those who
21 want to reopen the reservoir, we are
22 sure of one thing: Noted geologists
23 from throughout the country have assured
24 us that there will be a big earthquake
25 in this area.

1 "While we don't know when it
2 is going to happen, all scientific
3 studies show that it will happen. Logic
4 tells us that in a big earthquake of 8.0
5 or above, the reservoir will not be able
6 to hold in 3,000,000 gallons of water.

7 "We cannot afford a mistake
8 from M.W.D. officials since a mistake
9 can mean the loss of our lives. We urge
10 the M.W.D. board to use simple logic in
11 rejecting all the proposals to open the
12 Garvey Reservoir.

13 "Sincerely, Dr. Jose Calderon,
14 District Director, West San Gabriel
15 Valley U.L.A.C.," which is the United
16 Latin American Citizens.

17 He is from Russell Avenue Neighborhood
18 Watch Chair and assistant professor in sociology of
19 Pitzer College.

20 And I again appeal to each other one of
21 you. I know that you are a very intelligent group.
22 There are some of you that appear a little immature in
23 the back row there, laughing at us, as the lady stated.
24 And there was one that fell asleep, and I think your
25 chair should wake him up. He tends to fall asleep.

1 But I think all in general, you are
2 people like us, and we can come to you to appeal as
3 human beings. We have faith in humanity, and we feel
4 that you will listen to us and that you will consider
5 this very, very critical decision to place that
6 reservoir over our heads is very dangerous.

7 And I myself have an ulcer from worrying
8 for the past two years that you will open it again, and
9 now my horror seems to be coming -- my nightmare seems
10 to be coming to real that there is a chance you might do
11 it.

12 I appeal to you to consider the schools,
13 the children, the board members who spoke to you. There
14 are many people that are interested. There is another
15 assemblyman that is watching you, and he has some contact
16 with Richard Blanco. I think he has a few things to
17 tell you also.

18 There is Gloria Molina's office watching
19 you, too. And this morning I faxed a letter to Governor
20 Pete Wilson, who I expect to hear a response from. And
21 as a member of the Howard Jarvis Taxpayers Association
22 who opposes any unnecessary taxes, I feel that you will
23 bring about some tremendous taxes on the people of
24 California by voting for this reservoir because, if it
25 fails, you are going to be liable, and you are going to

1 have to pay for all those lives and all the property,
2 and that is going to fall on the taxpayers. So I hope
3 that you consider in your finance committees, and I
4 thank you again.

5 CHAIRWOMAN KREIGER: Thank you. Director Gage.

6 MR. GAGE: Chairwoman Kreiger, Directors, I
7 would like to make a motion and then speak to that
8 motion, if I may.

9 The motion comes in three parts. I move
10 first that we defer action on this item until our next
11 regularly scheduled board meeting. During that time we
12 instruct staff to thoroughly review everything that has
13 been brought to light to date and report back to us, not
14 as a matter of public debate, but a matter directly to
15 your board members for our final review before we take
16 action on this item at our next regularly scheduled
17 board meeting and at that board meeting that there be no
18 public comment.

19 We have gone through a public comment
20 stage today. We have been through it at the committee
21 levels and at the super committee levels, but that we
22 deserve to take one last look, a very hard look, at all
23 the issues that have been raised, and with that I would
24 make that motion.

25 VOICES: Second the motion.

1 CHAIRWOMAN KREIGER: Director Stelle.

2 DIRECTOR STELLE: Thank you, Madam Chairwoman.
3 I was going to make basically the same motion, but I
4 would also add to the motion that we close receipt of
5 all these comments on the E.I.R. at this meeting. This
6 is a matter of just an ordinary processing of an E.I.R.

7 CHAIRWOMAN KREIGER: Everyone who wanted to
8 speak has spoken.

9 DIRECTOR STELLE: But what I am saying is we
10 would not receive any further comments at any future
11 meeting. The subject is closed at this point.

12 CHAIRWOMAN KREIGER: That is as I understood
13 the motion. It has been moved and seconded. Is there
14 discussion?

15 Director Scott.

16 DIRECTOR SCOTT: I am grateful to Director Gage
17 for making the motion that he did. It is not easy to
18 sit here and be lambasted as a liar and, in effect, a
19 cheat and disregard of the public.

20 I speak for myself. When I sit here, I
21 sit here as a parent. I sit here as one of you, and I
22 would like you to leave here knowing that there are
23 people on this board who have listened to you, and this
24 is why I believe Director Gage made the motion.

25 I can assure you that before every

1 meeting -- that before the next meeting, I will reread
2 every piece of paper that has been filed in connection
3 with this matter and will give heed to it. So, please,
4 leave here without the cynicism that is pervading in
5 this land that people in political office don't listen.

6 I don't get a penny of salary. I get a
7 free lunch once a month; so there is nothing in this for
8 me, and there is nothing in this for the other
9 directors, and we will listen, and I would like you to
10 leave here with that feeling and have a good feeling
11 about it rather than some of the cynical expressions
12 that have been voiced here.

13 Thank you, Madam Chairman.

14 CHAIRWOMAN KREIGER: Thank you, Director Scott.
15 Director Davenport.

16 DIRECTOR DAVENPORT: Thank you, Madam Chairman.

17 I only have one problem with the motion,
18 and that is I have personal doubts about whether
19 deferring for one month is sufficient time for the staff
20 to really work the problem.

21 A VOICE: We can't hear.

22 DIRECTOR DAVENPORT: I have one problem with
23 the motion, and that is I have personal doubts about
24 whether a 30-day or four weeks is sufficient time for
25 the staff to adequately work the problem, and I would

1 like to suggest that staff be allowed an additional 30
2 days, if they find it necessary. Thank you.

3 CHAIRWOMAN KREIGER: Well, I would ask staff to
4 respond to a timing on this.

5 DIRECTOR BALCERZAK: If we cannot absorb all
6 the data that was given to us today and analyze it
7 fully, we will make use of that additional 30 days.

8 CHAIRWOMAN KREIGER: Does that meet with your
9 approval?

10 DIRECTOR GAGE: I would accept that as an
11 amendment to the motion that, if staff cannot adequately
12 do it between now and the next board meeting, that they
13 be given an additional 30 days.

14 CHAIRWOMAN KREIGER: Second it?

15 A VOICE: Seconded.

16 CHAIRWOMAN KREIGER: Thank you.

17 Director Boen.

18 DIRECTOR BOEN: Thank you, Madam Chair.

19 I would like to have the opportunity to
20 ask staff to comment on the -- first, it is not on this
21 motion. It is on the proposal made prior. If I may be
22 called upon after this motion.

23 CHAIRWOMAN KRIEGER: Why don't we work the
24 motion through, and then you --

25 DIRECTOR BOEN: I actually was asked to talk

1 before the motion was made, and it just happened.

2 CHAIRWOMAN KREIGER: I'm sorry.

3 The question has been called for. Those
4 in favor, aye.

5 THE BOYD: Aye.

6 CHAIRWOMAN KREIGER: Those opposed, no.

7 It is carried. Director Boen.

8 DIRECTOR BOEN: Thank you, Madam Chair. I
9 apologize for the mixup.

10 I would like to ask staff to comment on
11 the proposal that Director Stelle made about the closing
12 of the comment period for E.I.R., not as a matter of the
13 meeting today here, but as matter of completing the
14 environmental impact report. And I wonder, as a result
15 of this additional testimony, if this is something that
16 should be considered as an official step at this time.

17 DIRECTOR VENDIG: Madam Chairman, may I respond
18 to that?

19 CHAIRWOMAN KREIGER: Yes, please do.

20 DIRECTOR VENDIG: The public comment period has
21 closed. The opportunity for the public to present its
22 views today was afforded essentially pursuant to the
23 rights accorded to the public by the Brown Act, and
24 having heard from the public at this meeting, I think
25 there is no reason why an additional opportunity should

1 be afforded at the next meeting to go over the same
2 ground.

3 DIRECTOR BOEN: Thank you very much.

4 CHAIRWOMAN KREIGER: Director Maulding.

5 DIRECTOR MAULDING: I meant to say this before
6 we had taken the vote.

7 I wanted to ask staff if they heard the
8 comments I think of Dr. Slosson where he felt that the
9 experts from both organizations should sit down across
10 the table to discuss their ideas. I recognize Dr. Bin
11 Ying as being truly an expert on slope stability, and
12 that is a great part of the problem with this particular
13 dam. And I wondered if the staff would comment as to
14 whether or not they want to take that advise of
15 Dr. Slosson.

16 CHAIRWOMAN KREIGER: Director Balcerzak.

17 DIRECTOR BALCERZAK: This is a difficult
18 question. The final say on what constitutes an
19 acceptable repair to Garvey Reservoir is that of the
20 Division of Safety of Dams and their consultant review
21 panel.

22 The chief of the Division of Safety of
23 Dams, Vern Persson, and two of his top staff were down
24 here for the joint E & O and F & I committee meeting,
25 and they did hear and they did comment on the

1 presentation made by Johnson and by Slauson and Bin
2 Ying, and they have commented that there is no reason
3 for them to change their minds. I don't know where this
4 would be -- whether this would be very helpful to do
5 that or not. We will think about it, but -- I have to
6 let it go there.

7 CHAIRWOMAN KREIGER: Does that answer your
8 question, Mr. Maulding?

9 DIRECTOR MAULDING: Only that there was a
10 comment that the response was not a very scientific
11 response to the comments they made, and I thought maybe,
12 if we can clean that up, it would help a lot as far as
13 what these experts have to say.

14 CHAIRWOMAN KREIGER: Director Shaw.

15 DIRECTOR SHAW: I heard over and over again
16 that our E.I.R. wasn't complete. I want to make sure in
17 my mind that that is complete and so when the staff
18 analyzes this information that was presented today, that
19 it is linked to the E.I.R. and make sure that all the
20 questions are answered.

21 CHAIRWOMAN KRIEGER: Thank you. Any further --

22 DIRECTOR KUSSMAN: I move the agenda.

23 CHAIRWOMAN KREIGER: We have a motion and a
24 second. Let's move the agenda then. This is going to
25 be a closed session.

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Director Gage.

MR. GAGE: Chairwoman Kreiger, if I may, L.A. is going to seat a new delegate today, and before we go to the closed session --

CHAIRWOMAN KREIGER: It has just been called to my attention, and I, of course, want to recognize our new member. We have been more than awhile without that member, and I can understand her enthusiasm.

* * * * *

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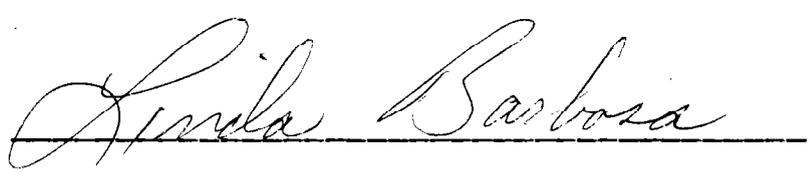
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I, Linda Barbosa, CSR No. 2344,
Certified Shorthand Reporter in and for the State of
California, do hereby certify:

That I took in shorthand the proceedings
in this matter, and the foregoing transcript is a true
and correct transcription of my shorthand notes.

I further certify that I have no
interest in the outcome of the action.

Witness my hand this 30th day of
August, 1992.



LINDA BARBOSA, CSR No. 2344
Certified Shorthand Reporter in
and for the State of California

STAFF REPORT

GARVEY RESERVOIR RESTORATION PROJECT

RESPONSE TO CITY OF MONTEREY PARK CONCERNS

September 8, 1992

The purpose of this report is to address the issues raised by the City of Monterey Park (City) and its consultants and to present staff's responses to those issues. These issues were extracted from documents from the City which were received by the District on July 29, 1992, and presentations made by the City to the Board at the all-day special meeting of the Engineering and Operations and Finance and Insurance committees on August 11, 1992 and at the committee and Board meetings held on August 19 and 20, 1992. The key issues are identified below.

1. The Cause of the Tension Cracking

The City contends that the Garvey Reservoir area may be subject to horizontal torquing caused by fault movements which in turn induce shears and tension cracks in the reservoir. The City also contends that the hills around the site may form a pressure ridge (sometimes called a fault-slice ridge, which by definition, is "a narrow linear ridge . . . representing a slice of rock squeezed up within a [strike-slip] fault zone"). The City alleged that the intensive studies performed by the District's consultants did not conclusively identify and clarify the origin and cause of the tension cracks observed at the bottom of the reservoir.

After review of the City's technical material by staff, District consultants, and the State of California Division of Safety of Dams (DSOD), staff maintains its position that the evidence overwhelmingly points to the conclusions that (a) the origin of the newly-formed tension cracks and those of geologic antiquity, both present at the reservoir site, are associated with regional tectonic uplift, and (b) development of the newly-formed tension cracks was caused by uplift portions of the Montebello Hills in conjunction with the 1987 Whittier Narrows earthquake. However, regardless of the origin of the cracking, the current reservoir repair concept would not change and the geosynthetic liner system is a valid component of that repair.

2. The Appropriateness of the Chosen Design Earthquake

The City contends that the maximum bedrock acceleration utilized in the District's analysis (0.6g, where g = the acceleration rate of gravity) may be too low given the past response of the site, and the presence of at least three active faults within 10 kilometers of the reservoir, which are believed to be capable of producing 6.5 to 7.5 magnitude events, would appear to justify a significantly higher design acceleration.

The staff, District consultants, DSOD, and an eminent Consulting Review Board retained by DSOD all agree that a maximum credible earthquake (MCE) with a magnitude of 7.0 and peak ground acceleration of 0.6g is appropriate to use in the stability analysis. In deriving this MCE for the analysis, all known surface faults, active and potentially active including the deeply buried (blind) Elysian Park thrust fault, were considered.

3. The Likelihood of a Saturated Embankment

The seismic analysis performed by Bing Yen and Associates, Inc. (BYA), for the City, assumed saturation of a portion of the embankment. This assumption is inaccurate. The area of saturation indicated by two piezometers that were cited by the City, indicates a highly localized condition in the northwest portion of the property and is neither indicative of sustained subsurface saturation nor representative of the main embankment and its foundation. High water-level readings in piezometers P13 and P14 and Boring #4 (referred to by BYA), are attributed to localized ponding of water, during moderate to heavy rainfall and to excessive irrigation runoff migrating down along the sides of the piezometer pipes, giving a false indication of groundwater levels. Six other piezometers located directly along the transverse center line of the dam indicated no such saturation during the operational life of the reservoir including during the recent seepage episode created by the reservoir cracks. In fact, the groundwater level under the dam never has been higher than 60 feet below the bottom of the reservoir, even during the recent episode. The proposed refurbishment of Garvey Reservoir will include improvements to the embankment surface drains in the areas of piezometers P13 and P14 to prevent future ponding of water. Boring #4 has been backfilled.

4. The Dynamic Analysis Performed by the City

The City contends that, using their level earthquake, the proposed liner system may be subject to tearing from deformations of the embankment causing saturation of the soil

which could lead to additional settlement and potential failure of the embankment as a result of an aftershock.

The staff and District's consultants have reviewed the City's dynamic analysis, and disagree with the City's assumptions regarding the mode of embankment failure, and the significance of their calculated deformations with respect to reservoir safety. The dynamic analysis utilized by the City's consultant was performed using a computer program which simulates the soil embankment to be an elastic material which it is not; therefore, the results are severely conservative. In reality, the soil embankment is a nonelastic material and should be so analyzed as was done by the District's consultant. Additionally, BYA determined embankment deformations by inputting the results of their dynamic analysis into a second computer program which provides yet another simplistic and overly conservative analysis. BYA calculated embankment deformations along predetermined slip planes, which is an inaccurate representation of the deformation mode. Additionally, they assumed that the height of the entire embankment is the same as it is at a localized gully, in order to yield the highest, most vulnerable section possible. No provisions were made in their two-dimensional analysis to account for the three-dimensional effects provided by the restraint or buttressing effect of the adjacent bedrock abutments on each side of the gully.

The embankment analysis by the District's consultant is based on state-of-the-art numerical modeling techniques. These techniques have been verified with shaking tests performed at the California Institute of Technology, sponsored by the National Science Foundation.

The City also expressed concern relative to the possibility of seiche (a seismically induced wave) overtopping the reservoir. This issue is not a concern since the maximum water surface is 10 feet below the dam crest and the reservoir would be covered by an anchored floating cover which would dampen any potential waves.

5. Liner and Monitoring System Performance

The City contends that the weak hypalon liner system is the only thing that prevents a reoccurrence of the 1989 seepage problems. They further contend that due to tectonic deformation or shearing from fault movement, the liner may eventually rupture and allow water to migrate into the soil, bypassing the drainage system.

The City clearly underrepresents the redundancy that is being designed into the reservoir repairs. The proposed repair system would consist of three major components:

- a. The existing cracks would be grouted and the compacted earth blanket restored;
- b. The multilayer geosynthetic liner would be installed including a drainage system that will convey and monitor any leakage; and
- c. A comprehensive piezometer system would be installed to monitor groundwater levels beneath and around the reservoir.

As a first order of work, the cracks in the foundation would be pressure grouted with a cement-bentonite mixture until they are completely filled. The compacted earth blanket would then be excavated through its total depth in the crack areas and be backfilled with a compacted soil-bentonite plastic mixture. The repaired areas would then be covered with new asphaltic concrete. This would bring the reservoir back to its original condition under which the reservoir was successfully operated for 35 years.

The liner system would then be installed. As currently envisioned, it would be composed of five layers of synthetic material arranged as follows in the order of bottom to top layer:

Layer 1--a geotextile "pad" placed over the asphalt on the bottom and sides of the reservoir.

Layer 2--the existing 45 mil Hypalon cover, or new Hypalon if tests show the existing Hypalon is not adequate, placed on top of the geotextile "pad."

Layer 3--a drainage layer, generally referred to as a geonet, placed on top of layer 2.

Layer 4--a synthetic mesh material placed on top of the geonet.

Layer 5--an impervious top layer consisting of 90 mil thick reinforced Hypalon placed on top of the mesh.

With respect to monitoring reservoir seepage, the drainage layer (layer 3) would be divided into six "cells." Each cell would be isolated hydraulically from the others and connected to its own drainage conduit that would convey any seepage that might leak through the top layer to a measurement/

alarm station located outside the reservoir. Any leaks in the top layer would be quickly detected.

Staff and District consultants have specifically selected the proposed flexible liner system to accommodate the potential for future cracks occurring in the soil underlying the reservoir, regardless of their origin. The proposed liner system will have sufficient strength to allow it to span the widest potential crack. The design of the liner system is based not only on calculations which take into account strength parameters, applied forces, and potential crack widths, but also on preliminary tests that simulate actual in-field conditions. During final design, the proposed liner system will be subject to further testing and analysis to select the best combination of materials for strength and leak protection.

The final level of protection will be the installation of piezometers that will ring the reservoir and indicate any abnormal groundwater levels in the soils beneath and around the reservoir. The piezometers will be instrumented to transmit data to a manned operations center where system operators can immediately react to abnormal readings. It is worth noting that it took approximately 18 months for water from the reservoir to migrate to the houses and yards along Fulton Avenue following the Whittier Earthquake. Ample time would be provided by the piezometers to take corrective action before any seepage damage could occur. The number and location of the piezometers were included in the FEIR by reference.

6. Level of Detail and Adequacy of the EIR

The City contends that the FEIR is legally deficient because it fails to contain an adequate project description which would require specific technical details of the proposed multilayer liner and leakage monitoring system, the materials-testing program, and the piezometer monitoring system. In support of this contention, the City cites (California Environmental Quality Act (CEQA) Guideline Section 15124 for the proposition that the project description shall supply all the details required to evaluate and review the environmental impacts associated with the project.

The FEIR contains the information required by Section 15124. Section 15124 states, in part, that the description of the project shall contain a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals, if any, and supporting public service facilities, "but should not supply extensive detail beyond that needed for evaluation and review of the environmental impact" (emphasis added). It is poor policy to design a project before completing a FEIR. Since CEQA requires that a range of

alternatives be considered, it would not be prudent, and in fact counter to the spirit of CEQA, to make an irreversible commitment of resources (design) to one alternative when that alternative may not be chosen. Moreover, the DSOD has stated that it does not require nor desire specific details of the design approved during the preliminary/environmental phase. The details should be based on final design parameters which will be developed during the final design phase.

The Draft and FEIR for the Garvey Reservoir Restoration Project was prepared in compliance with CEQA, as amended, and with the State CEQA Guidelines. In accordance with Section 15121(a) of the State CEQA Guidelines, (California Code of Regulations, Title 14, Division 6, Chapter 3), the purpose of this EIR is to serve as:

". . . an informational document which will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify ways to minimize significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency."

The Draft and FEIR have undergone peer review by an external environmental consultant. The consultant has found the document to be adequate under the intent, spirit, and legal requirements of CEQA. All sections of the document meet or exceed the legal requirements of CEQA.

Further, Section 15151 of CEQA states:

"An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. (Emphasis added.) The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."

7. Cumulative Impacts

Under the subject heading of cumulative impacts, the City suggests that the District may have other projects which could substitute for some of Garvey's functions.

The District plans to construct a variety of projects within the next 10 years. These projects include expansion of existing water treatment plants, construction of a new water treatment plant, construction of untreated and treated water conveyance facilities, and construction of additional untreated water storage facilities. Construction of these proposed facilities will not affect the need to return Garvey Reservoir to service. Each of the projects serves a specific function that is not redundant to the functions provided by Garvey Reservoir.

Expansion of existing water treatment plants and construction of a new plant are necessary to meet projected water demands and more stringent water quality regulations. These facilities do not provide for any significant water storage and therefore do not diminish the need for Garvey Reservoir. The planned construction of untreated water storage and conveyance facilities upstream of treatment plants is unrelated to operation of Garvey Reservoir, which stores and regulates treated water.

None of the projects in the planned expansion provides for additional treated water storage that would benefit the central portion of the distribution system. Garvey Reservoir, in fact, becomes even more critical in light of the expanded facilities because of its unique ability to provide system regulation of treated water in the distribution system.

Without Garvey Reservoir, there is a very limited volume of treated water storage available to member agencies during emergency conditions. Returning Garvey Reservoir to service is necessary to preserve a minimum level of emergency water storage. The reservoir also helps regulate pressure and flow in a portion of the water distribution system. This is a critical function because the reservoir protects pipelines against sudden pressure surges and maintains adequate and consistent water pressures to member agencies in the area.

8. Alternatives Analysis

An essential component of an FEIR is an analysis of alternatives. Section 15129(d) of the State CEQA Guidelines states that an FEIR must:

"Describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, and evaluate the comparative merits of the alternatives."

Section 15129(d)(5) states that:

"The range of alternatives required in an EIR is governed by "rule of reason" (emphasis added) that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation."

The FEIR for the Garvey Reservoir Restoration Project meets these requirements for the analysis of alternatives. The document analyzes the environmental impacts of: the preferred Hypalon liner alternative; two other design alternatives; four alternative sites for relocating Garvey Reservoir; and the no project alternative.

Any project that is considered to be an acceptable alternative to Garvey Reservoir must provide all of the following services:

- (1) Replace lost emergency storage;
- (2) Replace lost regulatory storage;
- (3) Restore same level of system reliability;
- (4) Reinststate operational flexibility of the delivery system;
- (5) Return overall system redundancy to previous levels;
- (6) Ensure uninterrupted service to member agencies; and
- (7) Protect against the possibility of catastrophic pipeline failures because of pressure surges.

The following additional alternatives, some suggested by the City, do not meet the objectives of the Garvey Reservoir Restoration Project:

- (1) Desalination;
- (2) Conjunctive use of groundwater basins;
- (3) Constructing a tank farm in Garvey;
- (4) Abandoning Garvey Reservoir and modifying the operations of the District's existing facilities;

- (5) Imposing a moratorium on new water hookups; and
- (6) Constructing smaller reservoirs to replace Garvey Reservoir.

9. Emergency Response Plan

The City contends that the Emergency Response Plan is unrealistic and inadequate.

The District has prepared an Emergency Response Plan for all District facilities, including Garvey Reservoir, and as part of the City's response during public review of the Draft EIR, they requested that the District make substantial changes to its Plan. These changes were made.

Owners of reservoirs are required to submit inundation maps representing the impacts of sudden and complete failures of all reservoirs to the State Office of Emergency Services. The State then provides this information to local agencies to use in the preparation of evacuation plans. The State has those maps for Garvey Reservoir on file. It should also be noted that in the event of an emergency, Garvey Reservoir can be completely drained in three days.

The City has requested that all raw data from reservoir operations must be made available to the City immediately, and that the District's interpretation of the data must be made available in a timely manner as well. The District has been and will continue to work with the City to determine the most meaningful method of providing them information. The complete text of the District's response to the City's requests can be found in Volume 2 of the FEIR (Page 1.1-42, Nos. 13-18 and 1.1-52, and Nos. 5-6).

SEV:atr
(brd:garvey-2.rpt-9082)

DEPARTMENT OF WATER RESOURCES

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SEP 3 1992



Mr. Gary M. Snyder, Chief Engineer
The Metropolitan Water District
of Southern California
Post Office Box 54153
Los Angeles, California 90054

Dear Mr. Snyder:

Garvey Reservoir Dam, No. 35-6
Los Angeles County

This is in response to your September 1, 1992 letter requesting a description of our role in the repair of Garvey Reservoir and our comments on the technical issues raised by the consultants for the City of Monterey Park. Please consider this a brief summary prepared for the purpose of familiarizing your full Board with both.

The Division of Safety of Dams is responsible for supervising the design, construction, operation, alteration, or repair of dams under State jurisdiction. Garvey Reservoir Dam has been a jurisdictional dam since 1965 when legislation was passed to bring offstream reservoirs under State jurisdiction, following the failure of Baldwin Hills Reservoir.

As you are aware, Garvey Reservoir has been empty since it was drained in December of 1989 after cracks were discovered in the reservoir floor. Before the reservoir can be placed back in service, it will be subject to our process of application approval and recertification for storage. The application approval process requires that we review and find the engineering plans and specifications satisfactory with respect to dam safety. We must also review the environmental process required by California law, including the environmental impact report (EIR). The reservoir will be recertified only after our Field Engineering Branch inspects construction and determines that the repair has been successfully completed in accordance with the approved design.

We have engaged a Consulting Board of renowned dam engineering and geology experts to advise us in our review of MWD's work and lend assistance to our independent analyses of the cause of reservoir cracking and seismic dam stability. This is a rarely used measure, reserved for technically complex or otherwise sensitive projects.

Mr. Gary M. Snyder
SEP 3 1992
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MWD has complied with the preapplication process since first discovering the reservoir cracks. They have completed the necessary studies and provided a conceptual design in adequate detail for the final EIR. Final design is not required nor desired for inclusion in the EIR because that could result in prematurely binding the design engineer to a particular set of design details.

At your request we have reviewed the work of Slosson and Associates and Bing Yen and Associates, Inc., consultants to the City of Monterey Park. They investigated the cause of reservoir cracking and seismic embankment stability, respectively. We found the Slosson reservoir cracking theory much less plausible than that proposed by Wahler Associates. There are numerous mismatches between the idealized shear zone model and actual conditions at and surrounding Garvey Reservoir. Their work is also incomplete in that they make no prediction of the magnitude of displacement on any of the model features. Our overall finding for reservoir cracking remains that which is stated in my September 16, 1991 letter to you:

Item 3

"The proposed design criteria listed under the heading 'Recommendations' on page V-11 of Volume 1 of the Wahler Associates report is approved with the stipulation you identify the size of future crack opening for which you will be designing."

The deformation analysis proposed by Bing Yen and Associates, Inc., is overly conservative. Their design seismicity far exceeds that considered appropriate by the numerous geologists that have worked on this project. Their selected soil strength parameters are also very low. This combination of input parameters unsurprisingly yields large embankment deformations. We concur with the Dames and Moore's (MWD's Consultants) design seismicity and conclusions that calculated maximum embankment deformations for maximum credible earthquake loading should be one vertical foot or less.

If you require further information, please give me a call at (916) 445-7606 or have your staff contact Project Engineer Stephen W. Verigin at (916) 323-5304.

Sincerely,


Vernon H. Persson, Chief
Division of Safety of Dams



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

EXHIBIT D

September 8, 1992

To: Chief Engineer
From: Senior Engineer Philip J. West
Subject: Garvey Reservoir Restoration
Response to Comments from the City of Monterey Park

Consultants for the City of Monterey Park have performed an independent analysis of the possible cause of cracking at Garvey Reservoir and a seismic stability analysis of the reservoir's embankment. This memorandum is a reply to several points of disagreement between the City's consultants and the District's staff. These disagreements include the cause of tension cracking, the appropriateness of the selected design earthquake criteria, and the likelihood of a saturated embankment. A detailed discussion of each topic follows:

Cause of Tension Cracking

This section of the memorandum represents my geological assessment specific to the Garvey Reservoir site and the events and mechanisms which caused the tension cracks observed in 1989.

The importance of the Elysian Park Fold and Thrust Belt (EPFTB) as a deep-seated seismogenic structure was not fully recognized until the time of the 1987 Whittier Narrows earthquake. The EPFTB extends along the east and north flanks of the Los Angeles Basin for a distance of approximately 60 miles--from the vicinity of Yorba Linda westward into Santa Monica Bay. This zone may be segmented based, in part, upon differences in depths of earthquake focal mechanisms along its alignment. The spatial coincidence of folding and thrust faulting can be explained by fault-bend or fault-propagation folding models, where thrust-faulting earthquakes at depth are associated with folding of the cover sequence (Hauksson and Allen, in press).

The 1987 Whittier Narrows earthquake, which involved thrust faulting and caused coseismic uplift in the Montebello Hills region (embracing the Garvey Reservoir site), demonstrated how the folding and faulting there are causally

related (Lin & Stein 1989; Davis, et. al., 1989). The 1987 Whittier Narrows earthquake provides unambiguous evidence for the coseismic growth of folds, as slip at depth caused the EPFTB to uplift a maximum of approximately 20 inches. The observed local uplift was approximately 1/4 inch at Garvey Reservoir, and approximately one inch at a distance of 3/4 mile east of the site. This event is consistent with other recent thrust events beneath active anticlines which provides pervasive evidence that while the EPFTB grows by progressive deformation, such growth is dominated by earthquake deformation (Lin & Stein, 1989).

A further indication of progressive uplift of the Montebello Hills is provided by geomorphic evidence and age dating of a geologically old alluvial surface located in the Monterey Park-Alhambra area near the intersection of Monterey Pass Road and Garvey Boulevard. The stream path of the ancestral Rio Hondo River, which, because of uplift of the EPFTB during late Quaternary time (250,000± years ago), was unable to sustain its former southwesterly course through Coyote Pass (now occupied by Monterey Pass Road) and was consequently deflected to its present course around the east end of the Montebello Hills through Whittier Narrows. This suggests an uplift by active anticlinal folding of at least 25 feet since abandonment of its former path (Lin & Stein, 1989).

During folding, secondary deformational features develop systematically by bending-moment deformations. Among such features, open tensional fractures or fissures will form parallel to the axis of the convex upward folding at right angles to the direction of maximum horizontal principal stress which, in the Los Angeles basin, is North-South. The folding of sedimentary rock layers is analogous to the bending of an elastic beam where the convex side (ground surface) is lengthened and, as a result, placed in tension. Geodetic surveys in the Montebello Hills region and at the Garvey Reservoir site have corroborated this predictable mode of vertical displacement and its attendant horizontal extensional strain.

The District has undertaken intensive studies to investigate the cause of the tension cracking in the reservoir floor reported in November 1989. Cracks representative of these secondary features were found in two areas oriented approximately N60°W and nearly vertical. Findings indicated the cracks had no vertical or horizontal offsets and were formed by an extensional mechanism related to regional folding, possibly exacerbated by the 1987 Whittier Narrows earthquake.

Large-scale mapping of the local geology revealed extensionally formed tension joints of geologic antiquity on surface outcrops and in exploratory trenches. Some of these joints contain in-filled mineral material indicative of their old age. Investigations in exploratory bucket-auger holes also revealed modern fissures which developed in the recent geologic past, including those formed in association with the coseismic folding accompanying the 1987 Whittier Narrows earthquake. Both these geologically old and contemporary tension cracks share similar origins and orientations.

It is reasonable to expect that such jointing (fissure-formation) having similar dimensions to those observed will occur infrequently (in terms of geologic recurrence time) resulting from regional folding and seismotectonics. Based upon field observations of crack dimensions, prior to erosion, future crack openings may be expected with the same general geometry as the previous cracks (i.e., openings up to approximately 3/8-inch). However, the liner will be designed to accommodate such openings oriented in any random direction within the reservoir.

In summary, the origin of the tension cracks in the Garvey Reservoir area can be attributed to the regional folding and seismotectonics related to the Elysian Park Fold and Thrust Belt. The 1987 Whittier Narrows earthquake merely exacerbated the formation of these tension cracks to reveal them, upon their discovery in November 1989, as modern replicas or expressions of similar type jointing formed in the geologic past.

Appropriateness of the Selected Design Earthquake Criteria

After analysis of all known active and potentially active faults within 54 kilometers (34 miles) of Garvey Reservoir, the Elysian Park Thrust described above was selected as the causative fault for determination of the Maximum Credible Earthquake (MCE). The MCE is the earthquake which would impose the most severe shaking at the site. Other more distant faults such as the San Andreas and the Newport-Inglewood, would cause lower peak ground accelerations at the Garvey Reservoir site even though their magnitudes would be equal to or greater than that which would be associated with the MCE from the Elysian Park Thrust. Consideration was given to the difficulty in evaluating an MCE for a blind thrust since the fault is buried. Most published attenuation relationships for predicting the peak bedrock accelerations for the Garvey Reservoir site would have underestimated the already recorded acceleration of 0.48g from the magnitude 5.9 Whittier Narrows Earthquake. Possible explanations for the inconsistency

include: a unique attenuation relationship for deep-seated thrust faults; geologic characteristics of the rock along the transmission path; wave interference effects, such as focusing; site characteristics such as topography; and statistical variation. Because of this inconsistency, the peak bedrock acceleration for the site under the selected Maximum Credible Earthquake (magnitude 7.0) was conservatively increased to 0.6g from that which would be predicted by standard methods. The magnitude of the MCE and the peak bedrock acceleration was arrived at by a consensus of four different groups of experts:

1. California Department of Water Resources, Division of Safety of Dams (DSOD) staff. The division is responsible for approval of all criteria used for the analysis and design of all dams under their jurisdiction in the State of California;

2. DSOD Consulting Board. This Board consists of three world-renowned experts in all areas relating to the design, construction, and operation of dams. The members of this Board are:

- a. Mr. Joe Sciandrone: Retired Army Corps of Engineers. Former Chief of Foundations and Materials Branch, Sacramento District. (Expert in earth-dam design/construction and foundation treatment.)

- b. Dr. Clarence Allen: Professor Emeritus Geology and Geophysics, California Institute of Technology. (Expert in siesmotectonics and particularly Southern California faulting and related earthquakes.)

- c. Dr. I. M. Idriss: Professor of Civil Engineering and Director, Center for Geotechnical Modeling, University of California, Davis. (Specialist in soil and rock dynamics.)

3. MWD staff; and

4. Dames and Moore, the District's consultant.

Likelihood of a Saturated Embankment

In their seismic analysis of the embankments at Garvey Reservoir, Bing Yen and Associates, Inc. (BYA) improperly assumed that portions of the embankment and foundation are saturated. Their assumption is based on seasonal readings for piezometers P13 and P14 (constructed by Bechtel in 1954) and the presence of water in exploratory boring #4 prior to its backfilling by Dames and Moore (D&M) during an earlier Phase II

seismic analysis in 1981 (D&M, 1981). Those abnormal readings are not consistent with readings from piezometers located elsewhere at Garvey Reservoir which indicate a normal groundwater level considerably below the floor of the reservoir.

More specifically, piezometers P13 and P14 are 1-1/4-inch diameter vertical pipes that measure the groundwater level at specific locations, within the reservoir embankment and foundation. These piezometers are located in the northwest corner of the reservoir property adjacent to a concrete drainage ditch. A local depression in this area collects rainwater and allows it to migrate down along the outside of the piezometer pipes and affects the water-level readings. BYA has based its assumptions on water-level data that were taken at these piezometers and at boring #4 during periods of unseasonably high rainfall. The readings from these two piezometers were extrapolated by BYA during its analysis to apply to the reservoir embankment and foundation. Other piezometers located directly in the center of the main embankment showed no saturation of the embankment during such times; in fact, historic piezometer readings show the groundwater level about 90 feet below the bottom of the reservoir. During the recent high water levels experienced by the nearby residents, the groundwater level at no time rose higher than approximately 60 feet below the bottom of the reservoir. BYA has inaccurately extrapolated the water levels confined to the locale of piezometers P13 and P14 and boring #4 to apply to an interval encompassing the entire embankment-foundation interface.

Water level measurements taken by D&M for seismic analysis in 1981 were ". . . complicated by the wet rainy season and the repaving of the reservoir crest road," as stated in its report. The borings, including boring #4 that D&M performed, were drilled during a season in which a total of 33 inches of rainfall was recorded at the reservoir. The appearance of water in boring #4 was due to surface water draining into the boring during a period of unseasonably high rainfall.

Consequently, BYA's assumption that portions of the reservoir embankment and foundation are saturated for the purpose of its seismic analysis is inaccurate. Moreover, the conditions causing the inconsequential abnormalities in groundwater responses in piezometers P13, P14, and boring #4 during periods of moderate to heavy rainfall, will be remedied during the proposed project. The work will involve regrading of the ground surface surrounding these locations to conduct

rainwater flow freely away from the areas, thus precluding further entrance of surface water into the piezometers.

Conclusion

Despite the differences in opinion between the City's and the District's findings, the preliminary liner concept for the repair of Garvey Reservoir as proposed in the FEIR should remain unchanged.

Additional comments regarding these and other issues have been provided by Wahler Associates in their letter dated September 2, 1992 and by Wolfgang Roth of Dames & Moore in his letter dated September 4, 1992.

If you have any questions or concerns regarding these topics, please feel free to call me.



Philip J. West

PJW/tpc
(bd:garvey-2PJW982)

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September 4, 1992

Metropolitan Water District
111 Sunset Boulevard
Los Angeles, CA 90054

Attention: Mr. Gary Snyder, Chief Engineer

Subject: **RESPONSE TO EIR COMMENTS ON
SEISMIC SAFETY OF GARVEY RESERVOIR**

INTRODUCTION

This letter contains Dames & Moore's response to the EIR comments concerning the stability of Garvey Reservoir. Addressed herein are the comments by the engineering and geology consultants of the City of Monterey Park, Bing Yen and Associates (BYA), and Slosson and Associates (Slosson), respectively. Many of these quite numerous comments are closely interrelated, overlapping and/or repetitious. We believe that addressing each of these comments separately would be counterproductive, producing a rather lengthy and confusing document. Instead, we have focused our response on the following two main topics which summarize the City's concerns related to the seismic safety of Garvey Reservoir:

- Design Earthquake
- Embankment Stability

DESIGN EARTHQUAKE

GENERAL

Similar to the "Design Load" in structural engineering, the term "Design Earthquake" suggests that a structure was designed to withstand this event as an upper bound. Consequently, if the peak ground acceleration (PGA) of the chosen Design Earthquake is contested as being

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"not a conservative number" (e.g., Slosson, letter July 27, 1992), one could conclude that the structure is underdesigned. This train of thought, however, can be misleading for existing structures built at a time when modern Design Earthquakes had not yet been established. Such structures, rather than being **designed** for a certain Design Earthquake, are merely **evaluated** for their ability to withstand it. In doing so, they may be found to be either underdesigned, adequately designed, or conservatively overdesigned.

For an existing structure, increasing the Design Earthquake may not require any upgrading, if seismic analysis shows that the newly postulated earthquake can be resisted without damage. Garvey Reservoir was built in the 1950s, when seismic design was still based on empirical methods rather than rigorous dynamic analyses with modern Design Earthquakes. Nevertheless, its embankments were conservatively constructed on competent bedrock foundation, with high-quality, roller-compacted earth fill, and with generously flat slopes. In contrast to most hydraulic-fill dams, for example, such embankments have typically been shown to "outperform", by large margins, their modern Design Earthquakes established long after they had actually been designed and constructed. Garvey Reservoir is no exception.

A Design Earthquake may be developed by either probabilistic or deterministic means. The former method defines a seismic event with a certain probability of occurrence during the project lifetime, based on statistics of past occurrences. The deterministic approach, on the other hand, defines a Maximum Credible Event (MCE) which can reasonably be inferred based on the physical properties of a given seismic setting, such as fault types, distances, focal depths, and potential rupture lengths. The Design Earthquake for Garvey Reservoir is a deterministic MCE.

As will be discussed below, the Garvey Reservoir embankments are capable of withstanding considerably stronger shaking than implied by Dames & Moore's MCE or, for that matter, the hypothetical MCE(s) postulated by BYA and/or Slosson. It is for this reason, that **the entire line of EIR comments concerning the appropriateness of the MCE is rather academic.** The various seismic hypotheses mentioned in these comments may constitute



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interesting research topics, but are of little practical relevance for the safety of Garvey Reservoir.

DAMES & MOORE's MCE

The Dames & Moore MCE, with a peak ground acceleration (PGA) of 0.6g, was developed based on state-of-the-art procedures as described in our January 30, 1991 report. All known surface faults in the vicinity of the site were considered, as well as the deeply buried (blind) Elysian Park thrust belt, which has been postulated as the source for the 1987 Whittier Narrows earthquake. Our methods and conclusions in deriving the MCE have been reviewed and accepted by DSOD staff, as well as an independent DSOD review board consisting of world-renowned experts in the field.

The assertion in BYA's July 1992 report that Dames & Moore's MCE has a strong-shaking duration of only 4 seconds (compared to theirs of 20 seconds), is incorrect. This comment appears to have been prompted by (1) a drafting error in our report; and (2) BYA's own arbitrary definition of "strong shaking." The drafting error occurred on the horizontal time scales in Figures 3 and 4 of our March 19, 1992 letter report. The numbers shown on these scales were mistakenly printed at half the values actually used in our dynamic analysis.

Compounding the confusion about the duration of shaking was BYA's own arbitrary definition of what constitutes strong shaking. BYA's assumed cutoff acceleration of 0.2g grossly exceeds the standard cutoff of 0.05g utilized in the profession (Bolt, 1973). Based on this standard, our MCE acceleration history has a strong-shaking duration of 20 seconds and, indeed, has a close similarity to the modified San Fernando record employed by BYA for their own analysis.

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EMBANKMENT STABILITY

ANALYSIS METHODS

To appreciate the difference between the Dames & Moore and BYA analyses, it is important to point out that the computer program QUAD4 utilized by BYA was developed two decades ago. The last 20 years have seen enormous state-of-the-art advancements in computing in general, and dynamic modeling in particular. Dames & Moore, for example, ceased using QUAD4 about ten years ago, in favor of more realistic analytical tools which became available to the engineering community.

Billed as "quite innovative" in BYA's oral presentation to the MWD Board, QUAD4 is well-recognized for its overestimation of earthquake-induced stresses, because of its linear-elastic simulation of nonlinear soil behavior. Closely related to this limitation, and equally significant, is the inability of QUAD4 to directly compute shaking-induced deformations. In order to estimate deformations, BYA was compelled to post-process the QUAD4 results by performing a second presumptive analysis. The latter procedure is based on an unrealistic assumption that embankment deformations would be concentrated along arbitrarily chosen finite (slip) planes (Surfaces #1 and #2, BYA report, Fig. 24). This assumption may be suitable for use in analyzing embankments with well-defined planes of weakness, such as interbedded clay seams. It is, however, grossly misleading to assume the existence of such weak planes in high-strength homogeneous fill structures, such as the Garvey Reservoir embankment.

In contrast to BYA, the Dames & Moore analysis employed a state-of-the-art nonlinear soil model where permanent shear distortions are accumulated whenever dynamic shear stresses exceed the soil's strength. The capability of our computer program DSAGE to predict strong-motion-induced deformations of earth dams has been verified with NSF-sponsored centrifuge shaking tests performed at Caltech (Roth, et al., 1986). Significantly, DSAGE does not require prior assumptions regarding the expected modes of failure or deformation. Rather, the prediction of these modes is an important part of the DSAGE analysis results. While

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BYA has portions of the embankment sliding on arbitrary shear planes, the Dames & Moore analysis simulates the shear-distortion behavior of soils, which is typical of the strong-shaking response of homogeneous fills.

THE MEANING OF "FAILURE"

For a meaningful interpretation of the numerical analysis results, one must first define the term "failure." In reviewing BYA's report, it became apparent that their use of the word "failure" can be quite alarming to the unprepared reader. Specifically, their references to "failure planes" and the "potential for [embankment] failure" may paint a misleading picture of embankments collapsing in response to earthquake shaking.

From a theoretical soil mechanics point of view, of course, both BYA's and Dames & Moore's analyses do indeed involve "failure conditions" of soil. After all, BYA's deformations are produced by slipping along alleged "failure" planes; and even our analysis would not produce any permanent deformations without yielding ("failure") of soil. There are, in fact, very few earth structures in existence, which do not experience some form of soil yielding, or failure, even though they are **perfectly stable**. Examples include the localized shear failure around the edges of virtually every shallow foundation; or the yielding/shear failure zones which define the active-earth-pressure wedge behind a retaining wall.

With respect to the dynamic analysis of the Garvey Reservoir embankment, yielding (or in BYA's case, "slipping") only accumulates at instants of extreme acceleration peaks, resulting in total finite displacements of a few feet at the most. After the shaking is over, no more yielding occurs, and the embankments remain stable. As long as the shaking-induced deformations do not cause overtopping of the embankment, there is no rational reason why it should not continue to safely retain the reservoir water. As will be discussed below, **neither the Dames & Moore analysis, nor BYA's own extreme shaking scenarios result in embankment deformations which would even approach overtopping.**

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BYA's ANALYSIS RESULTS

There are no significant disagreements in terms of soil properties utilized in the Dames & Moore versus the BYA analyses. One may even find much similarity in the numerical results. The major disagreements concern (1) the mode of deformations and (2) their significance with respect to reservoir safety. Because of the aforementioned shortcomings of BYA's analysis approach, their results give the wrong impression that during an earthquake the upstream face of the embankment could develop abrupt, knife-edge offsets which could threaten the integrity of the reservoir liner.

As summarized in the BYA report on page 8, they predict finite shaking-induced displacements of up to 5 feet along their assumed slip planes. This translates into a maximum horizontal crest deformation of 4 to 5 feet downstream, and about 2 feet of vertical settlement. Nothing in the BYA analysis, however, suggests that the deformed embankment would be unstable after the earthquake! Considering that Garvey Reservoir will be operated with a minimum freeboard of 7 feet, a crest settlement of 2 feet is of no concern. Even assuming BYA's unrealistic knife-edge failure mode, the most which could happen is that the liner may be locally damaged. Damage from such extreme behavior would be clearly evident in a visual post-earthquake inspection, allowing ample time for safely lowering the reservoir. As a second and third line of warning, the leak detection system and/or observation wells would also be responding.

Even if the liner were to rupture, the migration of water through the embankment would be so slow and localized that its significance would have no effect on the stability of the embankment. The issue of liner leakage is also discussed below under the heading "Embankment Saturation."

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DAMES & MOORE's ANALYSIS RESULTS

The Dames & Moore MCE analysis computed shaking-induced crest deformations of about 1 foot horizontally and 1 inch vertically. In contrast to BYA's abrupt offsets, these deformations are the result of gradual shear distortion distributed over the entire height of the embankment. No damage to the liner is expected to occur as a results of this deformation.

Since the well compacted fill does not suffer significant strength losses during shaking, the computed deformations turned out to be roughly proportional to the duration of shaking, as well as to the peak ground acceleration (PGA). For example, **doubling the duration of shaking AND up-scaling the input acceleration history to PGA = 1.0g** would result in little more than 3 feet of horizontal, and less than 1 foot of vertical, crest displacements. This **would cause less than 2 percent of liner stretching** - far below the 15 to 20 percent of tensile strain it can accommodate before rupturing.

EMBANKMENT SATURATION

BYA raised the possibility of saturated zones within the embankment. Due to the inherent limitations of their method of analysis, however, they could not translate this concern into any kind of meaningful deformation estimate. Instead, their conclusions contained the rather vague statement that the "[shaking-induced] displacements and subsidence are likely to be more excessive [than under dry-embankment conditions]."

With the new liner in place, the question of embankment saturation is rather hypothetical. Historical records show that the normal surface of the saturated groundwater mound was about 90 feet below the bottom of the reservoir. It never rose higher than about 60 feet below the bottom, even during the liner-cracking incident which prompted this investigation. Hence, the zone of saturation is confined within the reservoir foundation at depths well below the original ground surface under the embankment.

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The rainfall-related saturation alleged by BYA, at worst, affects only small localized zones of perched water which can be avoided altogether by only minor improvements of surface drainage. On the other hand, any liner damage would immediately be picked up by the leakage detection system, and/or water seeping into the embankment would show in the numerous observation wells. If necessary, the reservoir can be drained within 72 hours, which is significantly less time than the many weeks to months it would take for a localized saturation plume to reach a size where it could have any effect on the seismic performance of the embankments.

Finally, it should also be pointed out that the well compacted embankment soils are not susceptible to liquefaction, even under assumed saturated conditions. Therefore, even with an unlikely saturated zone near the foundation interface, as postulated by BYA, shaking-induced deformations would not be much different than for an essentially dry embankment.

MISCELLANEOUS

In addition to the more important points discussed above, the BYA July 1992 report also comments on the following, allegedly "nonconservative" aspects of the Dames & Moore analysis:

- **Comment:** "Only a single earthquake was considered."
Response: Because the embankment material is not susceptible to appreciable shaking-induced strength losses, and the computed deformations are insignificantly small, performing a parametric study utilizing several different MCE acceleration histories is not warranted. As discussed above, computed shaking-induced deformations were found to be roughly proportional to the PGA and the duration of shaking.

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- **Comment:** "The cross section of the Dames & Moore analysis does not pass through the deepest point."

Response: Any credible two-dimensional (2-D) model of a dam should account for actual 3-D conditions. The most common method of accomplishing this is to select an average, representative cross section for modeling, rather than a localized, extreme one as suggested by BYA. The latter would be akin to analyzing a 2-D model of the maximum-height section of a very short dam spanning a narrow V-shaped valley. Because the beneficial effect of abutment constraint cannot be accounted for in two dimensions, the results of such an analysis could be extremely misleading.

Notwithstanding the above, the strength parameters assumed for the Garvey embankment and foundation materials do not differ by much. Hence, in this specific case, the analysis results happen to be rather insensitive to the depth of the foundation/embankment interface.

- **Comment:** "The densities of the soils are too low."

Response: For all practical purposes, plus-minus 10 percent in density does not affect the analysis results in any meaningful way. While a higher density may increase dynamic shear stresses, the additional weight of the soil also increases its shear strength. This aspect is so insignificant, that an investigation of whose values are more realistic is not warranted.

CONCLUSION

Based on our own analysis and the review of the EIR comments by BYA and Slosson, we repeat our earlier conclusion that the embankments containing Garvey Reservoir are not susceptible to significant earthquake-induced damage. This holds true for any level of shaking which can be reasonably contrived from the various hypotheses attempting to characterize the site's complex seismic/geologic setting.



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- Roth, W.H., Scott, R.F., Cundall, P.A., (1986): "Nonlinear Dynamic Analysis of a Centrifuge Model Embankment," Proceedings, 3rd U.S. Nat. Conf. EQ Eng. Charleston, S.C., August.
- Bolt, B., (1973): "Duration of Strong Ground Motion," Proceedings, 5th World Conference on Earthquake Engineering, Rome, June; pp 1304.

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Respectfully submitted,

DAMES & MOORE

A handwritten signature in black ink, appearing to read 'W. Roth', written over the printed name and title.

Wolfgang H. Roth
Principal

WHR:aec

ac\soils\whr\garvey.res



Geotechnical, Environmental and Water Resources Engineering

September 2, 1992
MWD-266B.240

Metropolitan Water District of Southern California
1111 Sunset Boulevard
Box 54153
Los Angeles, California 90054

Attention: Mr. Sergio Valles

Subject: Response to Comments for Garvey Board Letter
Garvey Reservoir
Monterey Park, California

Gentlemen:

Attached please find responses to comments made by various consultants to the City of Monterey Park in their review of your Environmental Impact Report for the Garvey Reservoir Restoration Project. We have addressed those comments which you assigned responsibility to Wahler Associates in your transmittals of August 27 and 28, 1992.

We trust that the enclosed information will meet your needs in preparing your overall response letter. Do not hesitate to call if you have any questions or need further information.

Very truly yours,

WAHLER ASSOCIATES

Stanley H. Kline
Principal Engineer

Enclosure

cc: George Barber/MWD

RESPONSE TO GARVEY EIR COMMENTS

GARVEY BOARD LETTER

I. TECHNICAL ISSUES

A. Cause of Cracking

1. If Wahler had further investigated the origin of the tension cracks, a better understanding of the hazards at the site related to future aseismic slip, coseismic shearing, tension cracking and strong motion would most likely have been obtained. It is critical to have a clear understanding of the tension crack origin. (Johnson, p.1)
2. Wahler did not properly clarify the origin of the tension cracks. (Johnson, p.4).
3. If the tension cracks were caused, or exacerbated, by the Whittier Narrows earthquake, a larger regional event (which is certainly possible) could induce greater distress. (Slosson, p. 1)

Response:

Wahler Associates and MWD performed an exhaustive and thorough investigation to evaluate the extent and nature of the tension cracks in the floor of Garvey Reservoir. Our investigation provided sufficient data to characterize the cracks and recommend sound engineering designs to mitigate detrimental effects that the existing cracks may impose on reservoir operations. The report of our investigation clearly defined the extent of the problem; however, a single conclusive causative mechanism for the origin of the cracks was not pursued further, because insufficient evidence existed to permit defining that mechanism in further detail.

It is our opinion that the tension cracks on the floor of the reservoir are a direct result of tensional stresses caused by regional tectonic uplift resulting from north-south directed regional compression. Specifically, the tension cracks were formed by, or exacerbated by, deformation associated with coseismic folding of the northwest-trending Elysian Park Anticline during the 1987 Whittier Narrows earthquake. During coseismic folding of the anticline, secondary deformational features most likely developed on the convex side of the anticline. These deformational features can include en echelon tension cracks and normal faults which generally form parallel to the fold axis.

Garvey Reservoir, founded within the Montibello Hills, is located in the northern block of the Los Angeles Basin. This block is characterized by north-south directed compressional tectonics associated with the southern margin of the Transverse Ranges. The Montibello Hills and surrounding terrain consist of a low range of east-west trending hills that represent a series of anticlinal folds. The reservoir is situated on the southern limb of the Elysian Park anticline, as demonstrated by the southerly dipping strata underlying the site. The fold system mapped in the reservoir area represents the upper block of the Elysian Park fault system, a north-dipping blind thrust fault. This thrust fault does not emerge at the surface, but rather is noted by the surface expression of the upper block, which consists of anticlinal folds that undergo deformation and uplift synchronously with coseismic movement on the blind thrust system.

As stated in our report, areal geodetic surveys at the reservoir site, following the Whittier Narrows event, indicate elevation changes which define a northwesterly anticlinal feature just north of the reservoir. This feature is interpreted to be a continuation of the Elysian Park anticline or an emerging quaternary fold. The reservoir fractures, which consist of two right-stepping en echelon cracks, as well as existing joints mapped within the site, generally have a northwesterly trend similar to the anticline crest. The existing joints or fractures of similar orientation as the observed cracks, as well as the minor, geologically old northwest-trending normal fault mapped to the northwest of the reservoir, suggest that the area has been subject to similar past deformations due to coseismic folding.

The causative mechanism presented by Slosson and Associates, relating the tension cracks to coseismic and aseismic deformation, due to a northwest-trending strike-slip fault below the reservoir, is based on conjecture. There is no conclusive evidence that a northwest-trending strike-slip fault passes through, or exists below, the reservoir. However, there is evidence that a buried thrust fault exists, along which coseismic slip occurred which, in turn, most likely caused deformation on the upper thrust block.

Regardless of the exact causative mechanism, the potential for future tensional cracking in the reservoir is recognized in the Wahler Associates report, and the proposed repair concept using flexible synthetic liner materials to form an impermeable barrier, combined with piezometric level monitoring and leakage warning systems, would not change.

III. MISCELLANEOUS ISSUES

A. Geology

- 1. Evidence to support the existence of the northwest trending fault zone below the reservoir includes patterns of shears observed at the site, the relative location of northwest trending fault zones, regional geodetic measurements, and local topographic conditions common to pressure ridges. (Johnson, p.2)**

Response:

Johnson presents a dynamic model driven by northwest-trending strike-slip shear movement and suggests site specific and regional evidences to support its existence. Namely, it is conjectured that the site is bound by two northwest-trending strike-slip faults and numerous Riedal shears (faults) that cross the site and surrounding populated area. No evidence for the two strike-slip faults was found during our investigation, either at the reservoir site or in an approximately one mile radius embracing the site, or in the literature. Other than one fault feature of geologic antiquity at the northwest corner of the reservoir site, no shear structures were mapped during our detailed geologic mapping that could represent Riedal shears. Furthermore, the northeast- and northwest-trending canyons, surmised to be Riedal shear R2, display no evidence of faulting or disruption. It is reasonable to assume that, if these canyons had formed by fault movement, there would be some evidence of disrupted bedding or shear zones; none was found. These canyons were most likely formed by preferential erosion accompanying Quaternary anticlinal uplift of the Montibello Hills..

2. **The Elysian Blind Thrust fault appears to branch from the Santa Monica-Raymond fault, but it should be extended under or near the reservoir site. This may possibly be causing or adding to the tectonic stresses at the site. (Slosson, p. 4)**

Response:

Recent studies suggest that the magnitude 5.9, 1987 Whittier Narrows earthquake occurred at a depth of 9 miles with a focal mechanism that indicates movement occurring on a northerly-dipping thrust fault, referred to as the Elysian Blind Thrust fault. Focal mechanisms of 59 aftershocks indicated a complex sequence of thrust, strike-slip and normal faulting, all occurring at depth. The spatial distribution of earthquake epicenters suggests a main shock rupture area with about 2 km radius, east of Garvey Reservoir. Because of its geometry, it is conceivable that the Elysian Blind Thrust fault, but not necessarily the 1987 rupture surface, could indeed extend in the subsurface beneath or near Garvey Reservoir, and therefore may likely be causing or adding to the tectonic stresses at the site, which, in turn, could contribute to the causative mechanism of cracking at Garvey Reservoir.

B. Crack Repair

- 1. The impermeable seal never met specifications for an impervious liner and never will unless it is replaced with a true impermeable clay liner. Pressure grouting of cracks in bedrock is okay but not for the impermeable liner. A good low permeable clay liner should be placed as a replacement for the damaged liner. (Slosson, p.2)**
- 2. Pressure grouting a tension crack of a tectonic origin will only provide short-term aseismic mitigation. (Slosson, p. 3)**

Response:

It is obvious from Slosson's comments that they do not understand the proposed method of repair nor the specific reasons thereof. Pressure grouting of cracks in the existing soil liner is not proposed. The crack repair includes: (1) excavation of the crack to the base of the soil liner and backfilling with a compacted soil-bentonite mixture, which will be less permeable and more plastic than surrounding existing soil liner materials, and (2) grouting the open crack that exists in the bedrock formation beneath the liner. The purpose of this repair work is to remove the existing voids in the soil liner and seal the existing voids in the bedrock formation, which would otherwise provide readily available conduits for the migration of water. It has always been assumed that continued tensional stress could reopen existing cracks or create new cracks beneath the reservoir; therefore, the proposed repair scheme provides a flexible Hypalon liner system which will act as the impermeable barrier for the reservoir. This is in lieu of reducing the permeability of the existing soil liner by replacement with clay soil materials.