STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING

PHASE 2

TO REVIEW THE UNITED STATES BUREAU OF RECLAMATION WATER RIGHTS PERMITS (APPLICATION 11331 AND 11332) TO DETERMINE WHETHER ANY MODIFICATIONS IN PERMIT TERMS OR CONDITIONS ARE NECESSARY TO PROTECT PUBLIC TRUST VALUES AND DOWNSTREAM WATER RIGHTS ON THE SANTA YNEZ RIVER BELOW BRADBURY DAM (CACHUMA RESERVOIR)

WEDNESDAY, OCTOBER 22, 2003
9:00 A.M.

JOE SERNA CAL/EPA BUILDING
SIERRA HEARING ROOM
SACRAMENTO, CALIFORNIA

REPORTED BY: ESTHER F. SCHWARTZ
CSR NO. 1564

APPEARANCES

STATE WATER RESOURCES CONTROL BOARD:

PETER SILVA, HEARING OFFICER
GARY M. CARLTON

STAFF:

ERNEST MONA
ANDREW FECKO

COUNSEL:

DANA DIFFERDING

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REPRESENTATIVES

FOR CACHUMA CONSERVATION RELEASE BOARD & SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, IMPROVEMENT DISTRICT NO. 1:

BEST BEST & KRIEGER
3750 University Avenue, Suite 400
Riverside, California 92501
BY: GREGORY K. WILKINSON, ESQ.
MICHELLE OUELLETTE, ESQ.
and
EDWARD BERTRAND, ESQ.

FOR DEPARTMENT OF THE INTERIOR:

U.S. BUREAU OF RECLAMATION
2800 Cottage Way, Room E-1712
Sacramento, California 95825
BY: STEPHEN R. PALMER, ESQ.

FOR SANTA YNEZ RIVER WATER CONSERVATION DISTRICT:

LAW OFFICES OF YOUNG WOOLDRIDGE
1800 30th Street, Fourth Floor
Bakersfield, California 93301
BY: ERNEST A. CONANT. ESQ.

FOR CITY OF LOMPOC:

SOMACH, SIMMONS & DUNN
813 Sixth Street, Third Floor
Sacramento, California 95814
BY: SANDRA K. DUNN, ESQ.
and
DONALD MOONEY, ESQ.

FOR CALIFORNIA DEPARTMENT OF FISH AND GAME:

OFFICE OF GENERAL COUNSEL
1416 Ninth Street, Twelfth Floor
Sacramento, California 95814
BY: HARLLEE BRANCH, ESQ.

REPRESENTATIVES (CONT.)

FOR COUNTY OF SANTA BARBARA:

OFFICE OF COUNTY COUNSEL
105 East Anapamu Street, Suite 201
Santa Barbara, California 93101
BY: ALAN L. SELTZER, ESQ.

FOR NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION:

OFFICE OF GENERAL COUNSEL
501 West Ocean Boulevard, Suite 4470
Long Beach, California 90802
BY: CHRISTOPHER A. KEIFER, ESQ.

FOR CALIFORNIA TROUT, INC.:

ENVIRONMENTAL DEFENSE CENTER
906 Garden Street
Santa Barbara, California 93101
BY: KAREN KRAUS, ESQ.

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SACRAMENTO, CALIFORNIA

WEDNESDAY OCTOBER 22, 2003, 9:00 A.M.

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MR. WILKINSON: Mr. Silva, we had indicated yesterday that we are going to do Panel IV in two phases. We just about completed the first phase. I just have a couple of clarifying questions for Mr. Mills. Once those are asked and answered, then I think what we will do is have Mr. Conant, who is going to give an opening statement, and then he will bring up the other half of the panel, and when that's done, we can have everybody there for cross-examination.

REDIRECT EXAMINATION OF PANEL IV

BY MR. WILKINSON

MR. WILKINSON: Mr. Mills, do you recall yesterday that I asked you about the provision for 65 days of releases that is included in the Settlement Agreement?

MR. MILLS: Yes, I do.

MR. WILKINSON: I want to clarify. That provision is to ensure that the historical level of releases are made from the project; is that correct?

MR. MILLS: That is correct.

MR. WILKINSON: The purpose is to provide that during such days it is not project water that is being used, instead it would be water right released water; is

that right?

MR. MILLS: That is correct.

MR. WILKINSON: Thank you very much.

That completes the first phase. I guess at this point Mr. Conant wants to come up and make his opening statement and we can bring up the other members of the panel.

MR. CONANT: Good morning, Mr. Silva and Mr. Carlton. This is going to be very brief. I am going to cut out most of my opening statement because I think it has been said. I did want to make a couple points to kind of put the Settlement Agreement in context.

This Board, and this was alluded to in Ms. Struebing's recount of various orders of the Board yesterday. She alluded to it, but this Board held in its Decision 886 in 1958, which was the decision which led to issuance of the permit for the project, the Board held that the Bureau of Reclamation was to release sufficient water from the dam to "maintain percolation of water from the stream channel, that such perk clarification would occur from unregulated flow in order that operation of the project shall not reduce natural recharge of groundwater from the Santa Ynez River." This is Page 33.

This in part was based on the observation by your Board or its predecessor at the time that "the United

States has committed itself to operate Cachuma Project so as not to export water from the watershed of the Santa Ynez River which is or will be required to maintain natural percolation below Cachuma dam." That is Page 29.

So to put this in context, this discussion and at times adversarial proceeding has been going for about 50 years. Actually, this probably started in 1948. To determine what is the appropriate level of releases to ensure from the downstream perspectives that the downstream water rights were not being adversely affected. But on the other hand, the Member Units wanted to ensure that those releases did not unnecessarily compromise the yield of the project.

So we are here today, as you heard, to report that finally this issue has been resolved and with some minor adjustments and other assurances that are provided between the parties to the Settlement Agreement, we are now in a position to say that 89-18 with these minor adjustments adequately protect downstream water rights both as to quantity and quality. So I want to provide that background to put this in context and to emphasize the importance of the Settlement Agreement.

So that concludes my opening statement. So at this time we would ask that the balance of Panel IV come forward, and while they are coming up maybe just to

emphasize or elaborate on what Mr. Wilkinson has indicated. In order to expedite these proceedings, rather than each of us present our case in chief, what we did was coordinated our efforts in terms of the technical testimony that was provided yesterday. And then, as an example, Mr. Shahroody was on our list and on the Member Units', so we coordinated that. And what we now have for the second part of the panel are statements by the various managers. And what we ask them to do is to briefly describe their agency and then why they support the Settlement Agreement.

We were going to do it in the order of starting with Ms. Rees, who you heard from before, representing the South Coast perspective, and then move on to the downstream interests and conclude with the Bureau of Reclamation.

(Discussion held off the record.)

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DIRECT EXAMINATION OF PANEL IV

BY MR. CONANT

MR. CONANT: First we will call Kate Rees.

Ms. Rees, will you confirm that Member Unit Exhibit 221 is your testimony?

MS. REES: Yes, I will.

MR. CONANT: And Member Unit 210 is a

statement of -- excuse me, I have that in reversed order. Statement of qualifications is Exhibit 221.

MS. REES: Yes.

MR. CONANT: And that your testimony is Member Unit Exhibit 210?

MS. REES: That's correct.

MR. CONANT: Could you summarize your testimony, please?

MS. REES: Certainly. Good morning. As introduced, I am Kate Rees, the manager of the Cachuma Conservation Release Board. CCRB is a joint powers agency that was formed more than 20 years ago to jointly represent its member agencies in conserving Cachuma Project water supply and in protecting the water rights and interests for the agency. CCRB's Board of Directors is made up of elected representatives from each of its Member Units. The Bureau of Reclamation holds the Cachuma water rights on behalf of the five Cachuma Member Units. But CCRB is the agency that is responsible for the actions and decisions relative to the terms and conditions if those permits for the South Coast Member Units. And as we mentioned before, the South Coast is Goleta Water District, Carpinteria Valley Water District, the City of Santa Barbara and Montecito Water District.

In addition to the water rights activities are the

interests of CCRB and responsibilities for CCRB also include all of the issues related to downstream releases of water from Cachuma Reservoir for the benefit and protection of steelhead in addition to implementing the management actions in the Biological Opinion and Fish Management Plan. So I am responsible for managing and carrying out these projects on the Santa Ynez River.

As you have heard from earlier witnesses on this panel, the Cachuma Member Units and the City of Lompoc have been long involved in controversy over concerns raised by the City of Lompoc that Cachuma operations were negatively impacting the quantity and quality of downstream water rights releases. In 1995 the hydrologic consultants for the City of Lompoc concluded that the Cachuma Project operations did not have an impact on the quantity of water or on the level of groundwater levels, but that the operations had impacted the water quality of the downstream releases in terms of higher TDS levels than what would otherwise have occurred in the absence of the Cachuma Project.

So negotiations began between the Cachuma Member Units and the City of Lompoc, and these began in 1995. Unfortunately, the negotiations after many long meetings did not reach resolution. And so they eventually turned to a technically and scientifically based hydrologic

modeling process to better evaluate Lompoc's water quality concerns. And yesterday you heard extensive testimony from Mr. Shahroody and Mr. Mills and Mr. Evans relative to that technical committee process about the water quality.

Although the technical advisory team greatly improved the models and gained a much better understanding of the hydrology of the river system, the water quality questions about the impacts of Cachuma remain unresolved. And I think this was pretty discouraging for everyone because we hoped to reach resolution at that time. Then again in early 1999 representatives from CCRB, ID 1, the City of Lompoc and the Santa Ynez River parent district entered into renewed discussions that led to extensive negotiations. We were really bound and determined that we had to figure this out.

This cooperative process ultimately resulted in the water rights Settlement Agreement that we have been discussing for the Cachuma Project operations, that all parties to the agreement and the Bureau of Reclamation will agree will work. It is important to recognize that the Settlement Agreement took years to negotiate and none of the parties can accept portions of the Settlement Agreement without the whole, without the rest of it. It really needs to be a full agreement as approved and implemented by all. By its terms the Settlement Agreement

does not become effective unless the State Board through this hearing process provides for downstream water rights releases under WR 89-18 as modified by the Settlement Agreement. If this does not occur, all those years of negotiation and consensus among all parties on the Santa Ynez River may be lost.

The directors of the CCRB are satisfied that the Settlement Agreement adequately protects Cachuma Project water rights and also provides for protection of public trust resources downstream. They also believe the Settlement Agreement is in the best interest of the CCRB Member Units individually and should, therefore, be fully supported.

On behalf of the Directors of the Cachuma Conservation Release Board, I wholeheartedly support the Settlement Agreement as the appropriate means to protect Cachuma Project water rights and protect public trust resources downstream of Lake Cachuma, and I urge you to also endorse them.

Thank you.

MR. CONANT: Thank you.

Next we will go to the downstream interest, and I will ask Mr. Bruce Wales, who is general manager of the Santa Ynez Water Conservation District, Mr. Wales, could you confirm that SYRWCD Exhibit 2 is a statement of your

qualifications?

MR. WALES: Sir, I believe it's Exhibit 3.

MR. CONANT: Exhibit 3. And would SYRWCD Exhibit 3 be your testimony?

MR. WALES: I believe 2 is my testimony and 3 is my qualifications.

MR. CONANT: Okay. Could you summarize your testimony.

MR. WALES: Yes, sir. Director Carlton, Director Silva, Board staff, it is a pleasure to be here today after many years of work. The purpose of my testimony is threefold. First, to express to you the Santa Ynez River Water Conservation District's support for the Cachuma Project Settlement Agreement. Second, request the Board to approve the revisions needed to your Board Order 89-18 to implement the Settlement Agreement. Number three, to express our support for Alternative 3C in the State Board DEIR.

For background and as been stated previously, our district was formed in 1939 to protect the water rights and supplies if landowners and residents within our district boundaries. And, in fact, our district represents 75,000 people or 95 percent of the population within the watershed. Moving to Exhibit 2A, which is a Power Point map, the district covers most of the land area

within the watershed, especially downstream of Cachuma Reservoir. On the map and on I guess it is beige, the area on the right, as you can see there are two noncontiguous units to our district. The area on the right is federal land around Lake Cachuma and a single ranch, Rancho San Fernando Rey. The gap in between the two sections consists of San Lucas Ranch along the river and a number of properties in the Happy Canyon area immediately to the north. On the east side of the next section you will notice that our district line extends to the northwest which is largely synonymous with Highway 154. Our district runs from that area, along the valley floor and in the foothills to the ocean and surf.

The district includes the service area for Improvement District No. 1, which, although it is made up of substantial agricultural lands, it is loved by our local planners as the inter-rural area and it is in a triangle roughly between Los Olivos on the north, Santa Ynez on the east and the City of Solvang on the west. Also included are the cities of Solvang, Lompoc and a number of unincorporated residential areas served by mutual water companies and community service districts. Also included are about 27,000 acres of irrigated agriculture, consisting of vegetable crops, flowers, grapes for wine and field crops.

I think it is important to realize that our community viability, by that I mean our living conditions of our people and our livelihood, namely our economy, depend upon the development, maintenance and protection of both our surface and our groundwater supplies. Economy is driven by agriculture and increasingly by tourism. The Danish heritage of the City of Solvang has long made it a tourist destination. The City of Buellton has evolved into a highway, a commercial strip to a vibrant community. The City of Lompoc now attracts folks from the north, called snowbirds. They are attracted to the area for the watershed's golf courses and for bird-watching at the lagoon and along the river. Finally, we have a new Indian casino resort in the vicinity of Santa Ynez.

Specifically with regard to the Settlement Agreement, the district worked very hard for many years with CCRB, ID 1, the City of Lompoc to reach Cachuma Project Settlement Agreement. During this period of years, we consulted with the City of Solvang and Buellton and held numerous board meetings to provide our constituents opportunity for input on the Settlement Agreement.

With regard to that agreement I would like to make three points. First of all, as other speakers have indicated, it is truly historic. Second of all it is

comprehensive. Deals with water quantity, water quality, flood protection and it incorporates the regulatory requirements of the Biological Opinion and Fish Management Plan. Thirdly, as Ms. Rees indicated, it is a package deal. It includes provisions not needing approval by the State Board. It includes the Biological Opinion, Fish Management Plan requirements. And finally, it requires some minor modifications to your Board Order 89-18.

In summary and conclusion, I would like to indicate on behalf of the Board of Directors of our district we fully support the Settlement Agreement. I would like to ask you to please approve the provisions of 89-18 so that we can move our Settlement Agreement forward. And because the Settlement Agreement includes the Biological Opinion and the Fish Management Plan, since those plans require or include a three-foot surcharge, we also ask you to find Alternative 3C as the preferred alternative in your EIR. This concludes my testimony.

Thank you.

MR. CONANT: Thank you, Mr. Wales.

Next we call Chris Dahlstrom who is the general manager of Santa Ynez River Water Conservation District, Improvement District No. 1.

Mr. Dahlstrom, could you confirm that Member Unit Exhibit 223 is a statement of your qualifications?

MR. DAHLSTROM: Yes, it is.

MR. CONANT: And Member Unit 222 is your testimony?

MR. DAHLSTROM: Yes, it is.

MR. CONANT: Could you summarize your testimony, please?

MR. DAHLSTROM: Good morning. My name is Chris Dahlstrom. I am the General Manager of the Santa Ynez River Conservation District, Improvement District No. 1, otherwise known as ID 1 in the long name. My areas of responsibility include management of all sources of water supply and water rights within and related to ID 1. Accordingly, I am familiar with water rights issues involved in Cachuma Project as well as the efforts made by the parties in the Settlement Agreement which include ID 1, the parent district, CCRB and the City of Lompoc to resolve the outstanding water rights issues on the lower Santa Ynez River.

This long-term negotiation process resulted in what we know as the Settlement Agreement which was signed by all parties in December of 2002.

As has been explained, ID 1 is located downstream of Bradbury Dam in the Santa Ynez River Watershed. Among other things, the district delivers water to a portion of Santa Ynez Valley. It also acts to ensure that sufficient

water is released from the dam to protect its downstream water rights. ID 1 has a unique position of also being a Cachuma Project Member Unit. As such it seeks to maximize the yield of Cachuma Project and its water for the beneficial use within ID 1 boundaries. ID 1, as I also mentioned earlier, is a party to the Settlement Agreement, which resolves the claim that Cachuma operations negatively impacts the quantity and quality of downstream water rights releases made pursuant to 89-18.

The Settlement Agreement signatories and the Bureau of Reclamation have agreed that the Settlement Agreement will protect the signatories' water rights and water quality downstream of Bradbury Dam provided that the State Board, through its hearing process, grants downstream water rights releases under 89-18 as modified in this significant Settlement Agreement. Specifically, Exhibit A of the Settlement Agreement ensures that steelhead habitat and maintenance flows under the NMFS, or now known as NOAA, Biological Opinion are coordinated with releases for the Above Narrows Account or the ANA.

This will protect public trust resources pursuant to the BO above the Lompoc Narrows while at the same time protecting ID 1's access to ANA water.

Under Exhibit D in the Settlement Agreement, ID 1 has agreed to use good faith efforts to coordinate its

deliveries of State Water Project with those made to the lake. This ensures that water quality that is released in the river conjunctively is of high quality.

The Settlement Agreement also preserves the district's, ID 1's, scheduled deliveries of State Water Project water and Cachuma exchange water. The trustees of ID 1 are satisfied that the Settlement Agreement adequately protects Cachuma Project water rights and ID 1's exchange agreement entitlement, as well as providing for public trust resources. The trustee of ID 1 fully support the Settlement Agreement, as do I, as the appropriate means to protect its project water, preserve 89-18 as modified by the Settlement Agreement and ensure the public trust resources in Santa Ynez River below Lake Cachuma.

Thank you.

MR. CONANT: Thank you. Mr. Dahlstrom, could you confirm that Mr. Lee Bettencourt who spoke yesterday is one of your customers?

MR. DAHLSTROM: Mr. Lee Bettencourt is a customer of ID 1. He is an agricultural customer and domestic customer and is a trustee on ID 1 Board.

MR. CONANT: Thank you.

Next we will call Marlen Demery who is City Manager for the City of Solvang.

Ms. Demery, would you confirm that Solvang Exhibit 1 is a copy of your testimony?

MS. DEMERY: That's correct.

MR. CONANT: Please summarize your testimony, which I think includes your qualifications.

MS. DEMERY: That is correct. Thank you, Board Members. It is a pleasure to be here today. I'm glad that the speakers today have reinforced kind of the magnitude of where we are now, because I didn't really hear that yesterday. We were talking about evapotranspiration rates and probability, and I think the magnitude of what really has been developed here was lost in the data. Sorry, to the data, just statisticians and so forth.

But I worked for a number of these agencies, not directly in the water area, over the past 20 years in Santa Barbara County so I got to hear all the chitchat, if you will, about all the various positions of those agencies, City of Lompoc, Goleta Water District and the City of Santa Barbara. And this is truly historic. Because if you had told me 15 years ago or even ten years ago or even five years ago that all of these parties could agree to something about the operation protocols at Cachuma Reservoir, I would never have believed you. So I think this is really truly historic, and I am glad that at

least this panel has really tried to reinforce how important this is for the entire Santa Ynez Valley and Lompoc Valleys.

The City of Solvang incorporated in 1985 and our predecessor to the City or Solvang was SMID who has permits in Santa Ynez River for water from the Santa Ynez River. We are located nine miles downstream of Cachuma, and we are not a direct party to the Settlement Agreement. However, our constituents of the City of Solvang are fully members of the parent district as well as Improvement District No. 1. Both of those agencies, all of the people that live in the City of Solvang are also customers of those districts. We are also a ratepayer, of course, then of the Cachuma Project.

The City of Solvang has a varied water portfolio, which I think is a prudent thing to do in California. We have water from the Santa Ynez River that is secured under state permits. We also pump water at the ground, out of the groundwater basin. We have rights to Cachuma water and we also have project state water as part of our portfolio.

I had to laugh a little bit yesterday when Kate had her Power Point presentation up showing the rates of the water that the different ratepayers pay on the South Coast for their water, their monthly rates, and how high they

are. Because in Solvang if we are not highest in California, we are very close to the highest water rates in California. Our mythical average single family dwelling pays about $65 a month for water. And so consequently our water usage per capita in the City of Solvang has decreased every year since 1990. And so water conservation through rates is very effective and it works very well. And currently our consumption rates are about 250 gallons of water per capita per day, so it is very low.

Water supply is extremely important to the City of Solvang. And while we are a community that values our current size, we don't intend to grow larger, we do have to ensure that we have adequate water supplies for our build-out of the city, and consequently we need to assure ourselves that our water rights continue to be maintained to support that build-out. We, as Mr. Wales stated earlier, we are very heavily involved in the tourist economy. And the unfortunate part about that is with a transient population they tend to use more water. So in our hotels and restaurants and so forth we have to make sure that we have enough water in the future to continue to maintain our robust tourist economy.

Again, although we are not a party to the Settlement Agreement, we have a very valuable stake in the Settlement

Agreement and are directly affected as a downstream rights holder. Our City Council and the City of Solvang fully support the Settlement Agreement as a fair balance between public trust resources and water rights throughout the area. The City is cognizant that key to the settlement is that the State Board must ratify releases in accordance with WR 89-18, and we urge your Board to do so. That ends my testimony.

Thank you.

MR. CONANT: Thank you, Ms. Demery.

The remaining party, downstream party, would be the City of Lompoc, and they are going to present their statement of support later during their case in chief. So now we will move on to the Bureau.

But before doing so, I want just for the record, I think you mentioned this yesterday, Ms. Rees, could you confirm who the four entities are that make up CCRB.

MS. REES: Certainly. Member Units for CCRB are the City of Santa Barbara, Goleta Water District, Carpinteria Valley Water District and Montecito Water District.

MR. CONANT: Thank you.

MS. REES: You're welcome.

MR. PALMER: The last statement for this panel is going to be Mr. Michael Jackson.

Could you again reaffirm that your written testimony that is subject of this panel is Exhibit DOI-5?

MR. JACKSON: Yes, it is.

MR. PALMER: Please go ahead and summarize your testimony regarding this panel.

MR. JACKSON: Good morning. Reclamation would just like to reiterate its support for the Settlement Agreement for the reasons articulated by this panel. For the reasons being, one, it still provides for and it is quite compatible with continued operation and maintenance of Bradbury Dam and Cachuma Reservoir. It has the Fish Management Plan and the Biological Opinion as one of its baseline assumptions, and we simply request the Board incorporate the Settlement Agreement into our water rights permit as provided for by Ms. Struebing in her testimony yesterday.

Thank you.

MR. CONANT: That completes the direct for this panel.

H.O. SILVA: Thank you.

Do we want to have everybody or do we want to go with --

MR. WILKINSON: I think we should have everyone so everyone who testified yesterday come up to the front.

H.O. SILVA: Do a second tier. Can I just ask

a procedural question, City of Solvang? Are you going to be doing any crosses at all?

MS. DEMERY: No. You don't have to ask anymore. I was here yesterday afternoon.

H.O. SILVA: That helps.

The first cross-examination would be City of Lompoc.

MR. MOONEY: No questions.

H.O. SILVA: Santa Barbara County.

MR. SELTZER: No questions.

H.O. SILVA: Fish and Game.

MR. BRANCH: No questions.

H.O. SILVA: NOAA Fisheries.

MR. KEIFER: Just a couple.

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CROSS-EXAMINATION OF PANEL IV

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Several people on the panel addressed the relationship of the Settlement Agreement to public trust resources including Mr. Dahlstrom --

H.O. SILVA: Excuse me, is the microphone on?

MR. KEIFER: Several members of this panel addressed relationship of the Settlement Agreement or expressed their view that the Settlement Agreement provides sufficient protection for public trust resources.

I will throw this out to either Mr. Mills, Mr. Evans or Mr. Dahlstrom or Ms. Rees.

Does the Settlement Agreement specifically provide any substantial provisions for the protection of public trust resources above Bradbury Dam, Lake Cachuma?

MR. MILLS: For public trust resources above Cachuma?

MR. KEIFER: Yes.

MR. MILLS: No, it does not.

MR. KEIFER: Mr. Shahroody, you discussed yesterday some proposed gauging stations on San Lucas Creek.

MR. SHAHROODY: Yes, I did.

MR. KEIFER: Where exactly is the proposed gauging station on San Lucas Creek?

MR. SHAHROODY: The proposed gauging station will be located, in fact, the Highway 154 crossing of that creek, which is close to the main stem, Highway 154 Bridge. So if you travel on Highway 154, it crosses San Lucas Creek and observations have been made at that point and also at the location of both sides of that highway for livestream conditions. So that would be the location that the station would be established.

MR. KEIFER: What is the relationship between flows measured on San Lucas Creek and flows on the Santa

Ynez River at the Highway 154 Bridge?

MR. SHAHROODY: They're pretty close. We did a correlation analysis on the natural flow condition. Because San Lucas Creek is the largest tributary between the dam and the Highway 154 Bridge, and it is the closest to the observation of 154 Bridge. So the flows from San Lucas Creek would be the primary contributor to the flow in the main stem of the natural flow condition.

MR. KEIFER: That is all I have.

H.O. SILVA: Thank you.

Cal Trout.

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CROSS-EXAMINATION OF PANEL IV

BY CAL TROUT

BY MS. KRAUS

MS. KRAUS: Morning.

My first question is for Mr. Evans. As I understand it, the Settlement Agreement states that the signatories will mutually support before the State Board the terms and conditions of the NOAA Fisheries Biological Opinion and the Fish Management Plan as the preferred operational program for the Cachuma Project. Is that correct?

MR. EVANS: Yes, that is correct.

MS. KRAUS: Does the Settlement Agreement mandate the implementation of the conservation

recommendations identified on Page 82 of the Biological Opinion?

MR. EVANS: No, it does not.

MS. KRAUS: Is there anything else that mandates the implementation of those conservation recommendations?

MR. EVANS: No.

MS. KRAUS: Thank you.

Did the Department of Fish and Game approve the Settlement Agreement as being adequate to protect public trust resources in the Santa Ynez River?

MR. EVANS: I don't believe it has, no.

MS. KRAUS: Did NOAA Fisheries approve the Settlement Agreement as being adequate to protect public trust resources?

MR. EVANS: No.

MS. KRAUS: Was the Department of Fish and Game involved in any of the settlement discussions for the Settlement Agreement?

MR. EVANS: No, they were not.

MS. KRAUS: Was NOAA Fisheries involved in any of the settlement discussions?

MR. EVANS: No.

MS. KRAUS: Prior to the final execution of the Settlement Agreement, then, did any of the parties to

the Settlement Agreement consult with either the Department of Fish and Game or NOAA Fisheries regarding the provision of the Settlement Agreement relating to Biological Opinion and implementation of the Fish Management Plan?

MR. EVANS: No, they did not.

MS. KRAUS: Thank you.

Mr. Shahroody, yesterday I asked Mr. Buelna to estimate, based on historic releases, the typical rate duration, rate and duration of the downstream water rights releases, and I believe he indicated that -- he indicated that it did vary from time to time and year to year, but that his general description was the rate would be typically releases at 150 cfs for the first ten days or so and then a ramp down to 25 to 35 cfs.

Would you agree with that description?

MR. SHAHROODY: Not particularly.

MS. KRAUS: Would you describe what you believe to be the typical rate?

MR. SHAHROODY: Depending when and for what area the releases are made. If the releases are made for the reach between the Bradbury Dam and Lompoc Narrows, as what would be referred to as above Narrows area, that would have basically certain rates that we have through experience made as opposed to if the combined releases are

made for the above Narrows and specifically below Narrows to recharge the Lompoc groundwater basin.

MS. KRAUS: Can you, for those two different scenarios, then, can you give a general -- your general impression of the average releases?

MR. SHAHROODY: I can do that. For releases made for the above Narrows area, that primarily occurs to meet the calls and the needs of the water right holders on the river above the Narrows and that primarily is done at rates to take care of the users, depending what location they are. If they are located, let's say, in Solvang area, upstream of Alisal as opposed to if they are located further down west of Buellton, the rates would vary and duration would vary.

Generally I would say for the Alisal area the release would be for a hundred cfs and would continue for a period of time. I would say at that rate for about three, four days and the rate would be cut back pretty close to 50 cfs until the needs are taken care of.

On the second scenario, of course, it is of longer duration. The primary purpose is not only to recharge the above Narrows basin as a protective measure, if you want to call it, so we don't get calls. At the same time to fulfill the obligation of getting the below Narrows account out of the reservoir to the below narrows area.

Because water sitting in the reservoir really doesn't help Lompoc in terms of quality and quantity. That would require longer distance of travel and, of course, larger quantity of water to be sent down specifically for recharge of the Lompoc Basin.

For those in Buellton, that would be correct. We would start at a higher rate than a hundred cfs. We would start at about 150 cfs to have the water basically flow down to Lompoc Narrows into the forebay Lompoc Basin. At that time, of course, there is a time delay involved in terms of when you turn the water down as to see the effect at the front of the water, of course, for the operation. And you would anticipate that will take some time, two days, in terms of time lag and time of travel, if you want to call it. So the flows would be cut back or cut down to about -- we have to follow that ramping rate under the Biological Opinion, specifically follow that, and would go down to a hundred cfs.

Under the 150 cfs, as I said, Mr. Buelna was correct, it would take something on the order of 12 days, 13 days to reach the Narrows. And then, of course, a little more, to have it in the forebay area. After that we will cut it down to about a hundred cfs and generally hold it in the area of about 80 to 70 cfs. And the period of that, we would try to sustain it as long as we can,

that the Lompoc forebay actually could do as much recharge in that area. And generally it could run from sometime in, I would say, just about a couple weeks after the start of the summer -- I am talking about first part of July -- and could extend all the way to October, end of October.

MS. KRAUS: Just to clarify, the duration of the releases made for the above Narrows, the typical duration?

MS. KRAUS: If you're making releases exclusively in the above Narrows area, those, as I said, would be targeted for the water right holders calling for water and depending where you are. It could -- last year for ID No. 1's needs just immediately upstream of Alisal Bridge releases were made about mid June and extended pretty much to July 20th.

MS. KRAUS: Approximately a month?

MR. SHAHROODY: About a month.

MS. KRAUS: As I understand it, the Settlement Agreement adjusts the downstream water rights release schedule to reduce the water supply impact to the Cachuma Project of the target flows that are identified in the Biological Opinion; is that correct?

MR. SHAHROODY: I don't understand. You want to restate it again.

MS. KRAUS: What I understood from the

testimony of the first part of this panel was that the downstream water rights release schedule would take place on a 65-day average over a ten-year period of time. In order to meet the target flows identified in the Biological Opinion and my understanding from that testimony yesterday was that some adjustment was being made to the schedule in order to accommodate those target flows, or an adjustment to the schedule was potentially contemplated?

MR. SHAHROODY: I don't think that would be adjustment in the schedule. The conjunctive use operation of downstream water rights with the fish releases basically tries to repeat the historical release period. I have to clarify that the 65 days is based on ten year moving average. Also, you have to recognize in spill years releases are not made. That is because everything is wet.

So, therefore, the number of days I explained, for instance, is when you average over ten years would be closer to 65 days as opposed to, let's say, 90 days when you're actually making the releases outside of the spill years. There is no adjustment contemplated. Basically repeat the historical practice that has been done over the last 30 years, just to confirm for the settlement parties that is going to take place.

MS. KRAUS: So it confirms for the settlement parties that the downstream water rights releases that have occurred historically will continue in the same manner into the future under the terms of the Settlement Agreement?

MR. SHAHROODY: That is correct.

MS. KRAUS: Thank you.

Again for Mr. Shahroody. If target flows were required at rates greater than those called for by the Biological Opinion and the Fish Management Plan, would it be technically possible to adjust the downstream water rights release schedule to meet those target flows?

MR. SHAHROODY: Well, let me state it in this fashion. Those target flows are set forth in terms of releases made from the project to meet those target flows. The long-term Biological Opinion requires certain target flows for certain reaches, depending what kind of year you have, what kind of hydrologic conditions you have.

What the downstream water rights is doing here under the Settlement Agreement basically is the scheduling. Scheduling will be done in a fashion that while downstream releases are made, therefore, those would satisfy the target flows. Therefore, water does not have to be released from the project. It would be a saving from them, especially in a dry year. It would increase the

longevity of the water in the storage for the purpose of additional releases for fish.

MS. KRAUS: So then is it possible that if more releases for fish were required that the schedule for downstream water rights releases would be adjusted if necessary to meet those flows?

MR. SHAHROODY: As I indicated, to the extent you are making releases like a hundred cfs or 50 cfs, those basically would coincide with -- I don't know what kind of schedule you are talking about. If, let's say, a release was made, instead of ten cfs or 12 cfs for purpose of fish, then if you are making downstream water right releases, that would be inclusive.

MS. KRAUS: So the downstream water rights releases could be used to meet the 12 cfs in your example as opposed to ten cfs?

MR. SHAHROODY: As I said, it is just the nature of downstream water right releases, it is within those 65 days agreement. And when you are making downstream water right releases, it would have to be done in a fashion to meet the downstream water rights. While we're doing that, we coordinate your schedule. At the same time that satisfies downstream -- sorry, the fish flow requirements at the same time too.

MS. KRAUS: I am sorry, I just want to make

sure I understand what you are saying. Was your answer just addressing under the provision of the Settlement Agreement or my hypothetical, that if releases were required beyond what is called for by the Biological Opinion, they could be coordinated with the downstream water rights releases?

MR. SHAHROODY: I was addressing it under the Settlement Agreement.

MS. KRAUS: My question is: If releases were required greater than what is called for by the Biological Opinion, could those releases similarly be coordinated with the downstream water right release schedule to meet the flow?

MR. SHAHROODY: Depends on what you mean by greater. Is it the time? Duration? Magnitude?

MS. KRAUS: A greater rate. Take your example 12 cfs as opposed to ten cfs.

MR. WILKINSON: Mr. Silva, I have let this go on for a little while to see where it is going. It seems to me we are getting pretty far from the Settlement Agreement at this point and probably getting into testimony that will come up in Panel V, and as you see on your screen, Mr. Shahroody is going to be a witness in Panel V. At some point, it seems to me, this gets pretty far beyond the Settlement Agreement.

H.O. SILVA: What do you think?

MS. KRAUS: I can defer this to Panel V.

H.O. SILVA: That would be great; that would make sense.

MS. KRAUS: One last set of questions for Mr. Wales. How much water is currently stored in Lake Cachuma for the Above Narrows Account? Actually maybe as of the end of September.

MR. WALES: The report comes out once a month, and I scrutinize that report at that time. Be pretty busy this month and I don't recall the exact number, but probably on the order of 10,000 acre-feet.

MS. KRAUS: Do you know what the date of the last report was?

MR. WALES: September 30th. The day of last report was dated in October but it was for the month of September.

MS. KRAUS: Similarly, how much water is currently stored in Lake Cachuma for the Below Narrows Account?

MR. WALES: About 6,000 acre-feet, to the best of my recollection.

MS. KRAUS: Thank you.

I have no further questions right now.

H.O. SILVA: Thank you.

Redirect?

MR. WILKINSON: Redirect.

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REDIRECT EXAMINATION OF PANEL IV

BY MR. WILKINSON

MR. WILKINSON: First for Mr. Mills.

Mr. Mills, I believe you were asked whether either the Department of Fish and Game or the National Oceanographic and Atmospheric Administration, NOAA, were consulted as part of the Settlement Agreement. I believe your answer was no.

Is that correct?

MR. MILLS: I believe that was Mr. Evans.

MR. WILKINSON: Mr. Evans, is it true that the Settlement Agreement incorporates both the Biological Opinion and the Fish Management Plan?

MR. EVANS: Yes, it does.

MR. WILKINSON: Is it true, sir, that the measures that are incorporated into the Biological Opinion and the Fish Management Plan were developed in consultation with on one hand with the Department of Fish and Game and on the other NOAA?

MR. EVANS: Yes, that is right.

MR. WILKINSON: Is it true that all of the measures included in the Biological Opinion are supported

by the signatories to the Settlement Agreement?

MR. EVANS: That is correct, yes.

MR. WILKINSON: If a measure is mandatory under the Biological Opinion, it would, therefore, be implemented as part of the Settlement Agreement?

MR. EVANS: Yes.

MR. WILKINSON: And if a measure under the Biological Opinion is considered discretionary and it is a suggestion, it would be treated as that under the Settlement Agreement?

MR. EVANS: Yes, it would be.

MR. WILKINSON: So there is no change made by the Settlement Agreement to either the Biological Opinion or the Fish Management Plan?

MR. EVANS: That is correct.

MR. WILKINSON: Mr. Shahroody, you were asked a couple of questions about the change in the measuring point from San Lucas Bridge to San Lucas Creek; is that correct?

MR. SHAHROODY: In terms of the observation, yes.

MR. WILKINSON: Right, for purposes of observation. Could you tell me what the distance is between San Lucas Creek and the existing measuring point or the preexisting measuring point at San Lucas Bridge?

MR. SHAHROODY: I think it is very close to the confluence of the San Lucas Creek with the main stem and the 154 Bridge. I would say you are looking at three-tenths of a mile.

MR. WILKINSON: Three-tenths of a mile?

MR. SHAHROODY: Something of that order, or maybe -- roughly in that order.

MR. WILKINSON: Apart from the fact that there are fishery releases being made that would tend to keep the area wet at San Lucas Bridge, are there any other problems that you are aware of with the measuring point, the existing measuring point, the existing measuring point at San Lucas Bridge, the 154 Bridge?

MR. SHAHROODY: The problem, of course, exists with respect to the San Lucas Bridge and the main stem is related to the deposits, significant deposits, of material and, of course, the cross-section of the subsurface material gets wide and deep. What happens, therefore, you are faced with what is known as a subflow condition. The surface flow tends to, as it approaches the San Lucas Bridge, tends to basically disappear. That means it dips into the subsurface and subsurface flow, and further downstream, of course, that cross-section gets narrowed down and it would resurface back as a surface flow of the stream.

MR. WILKINSON: So what occurs then at the 154 Bridge is that water which may be flowing in the management reach of the river submerges, continues to flow in the gravels and reemerges downstream of the 154 Bridge?

MR. SHAHROODY: That is correct.

MR. WILKINSON: Mr. Evans, back to you.

Were either the Department of Fish and Game or NOAA asked to approve the Settlement Agreement?

MR. EVANS: They were not.

MR. WILKINSON: You have to speak up just a bit.

MR. EVANS: They were not.

MR. WILKINSON: Has anyone from either agency expressed to you their disapproval of the Settlement Agreement?

MR. EVANS: No.

MR. WILKINSON: Sorry I'm bouncing around a little bit. Mr. Shahroody, back to you.

You were asked a couple questions about the downstream releases, how they are made and so forth and what the impact is on the accounts. There have been suggestions, I believe, in some of the testimony that those releases could be trickled out. Would that be consistent with Settlement Agreement, trickled out for a longer period of time? In other words, the rate of

release would be reduced, but the duration of the release would be a longer period. Would that be consistent with the Settlement Agreement?

MR. SHAHROODY: That is not consistent with the Settlement Agreement.

MR. WILKINSON: What would occur if that were done?

MR. SHAHROODY: If that is done, basically, it would go over a longer duration and it would not meet the requirements, i.e., in the case of recharging Lompoc groundwater basin to meet their water quantity and water quality. Water would be, a lot of time would be hanging in upstream areas, depending, of course, type of year you have, and the impairment caused by Cachuma Project in percolation of water into Lompoc would not be met. That would be one of the primary problems.

Second problem, of course, if it did that, we would run out of the Above Narrows Account and, if we audited the drought period, like the one we talked about, the recent drought of 1987 through 1991 or repeat of '47 through '51, you would not have water to meet the water right holders above Narrows area when they called for the water to be sent down for them.

MR. WILKINSON: Would there also be a problem of certain areas within the above Narrows area of not

receiving the water that is released?

MR. SHAHROODY: That is what I referred to.

MR. WILKINSON: Thank you very much.

That is all I have.

H.O. SILVA: Any recross, City of Lompoc?

MR. MOONEY: No.

H.O. SILVA: Santa Barbara County?

MR. SELTZER: No.

H.O. SILVA: Fish and Game?

MR. BRANCH: No, thank you.

H.O. SILVA: NOAA?

MR. KEIFER: No.

H.O. SILVA: And CalTrout?

MS. KRAUS: No.

H.O. SILVAl: Okay, great.

Thank you, panel.

Let's take -- why don't we take 15 minutes, come back at 10:15, and we will do the last panel.

(Break taken.)

H.O. SILVA: Let's get going.

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DIRECT EXAMINATION OF PANEL V

BY MR. WILKINSON AND MR. PALMER

MR. WILKINSON: Mr. Silva, Mr. Carlton, this is our public trust panel. We've got a number of folks

here who have been involved in the Santa Ynez River issues for quite a while in the biological perspective. We are going to start what Dr. Charles Hansen. I'm going to ask:

Dr. Hansen, is Cachuma Member Unit Exhibit No. 224 a true and accurate statement -- I got it wrong -- copy of your testimony?

DR. HANSEN: Yes.

MR. WILKINSON: A simple question and keep screwing it up.

Is Exhibit No. 225 of the Member Units a true and correct copy of your statement of qualifications?

DR. HANSEN: Yes, it is.

MR. WILKINSON: Finally, Dr. Hansen, is Cachuma Member Unit Exhibit No. 242 a true and accurate copy of your Power Point presentation?

DR. HANSEN: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony.

DR. HANSEN: I would. Good morning. My name is Chuck Hansen. I am a fisheries biologist. I've been involved in addressing Santa Ynez steelhead issues since 1993. I was one of the original co-chairs of the Santa Ynez River Technical Advisory Committee, and I continue to serve on both the Technical Advisory Committee as well as the Adaptive Management Committee.

This morning my testimony is going to address fishery habitat investigations that have been conducted on the Santa Ynez River downstream of Bradbury Dam. My testimony is going to address three basic areas. First is general background on the life history of steelhead. The second are fishery habitat investigations that have been conducted over the past decade downstream of Bradbury Dam, and the third is the identification limiting factors for steelhead and how the information from the scientific studies was used as a foundation for identifying management actions.

Steelhead are an anadromous species, meaning that they live a portion of their life cycle in the marine coastal waters. The juveniles and adults reside in the coastal areas. As the adults mature, they migrate upstream into local tributaries and river systems, such as the Santa Ynez River. The upstream migration of adults occurs typically during the winter and early spring months. It is triggered frequently in response to storm water runoff, the breaching of the bar, the sandbar. The mouth of the Santa Ynez River serves as a complete barrier to migration of steelhead both into and out of the Santa Ynez River.

During the winter period the steelhead migrate upstream into both the main stem and the tributaries.

Spawning occurs in areas characterized by suitable gravels and cool water temperatures. During spawning the female digs a shallow depression in the gravels where the eggs are deposited. The gravel area where the eggs are deposited is referred to as a redd, r-e-d-d. The eggs incubate within the redd for a period of time.

During the spring, late winter or early spring months the young steelhead emerge from the gravels and begin rearing within the freshwater environment, both within the main stem and the tributaries. The juveniles typically rear within the area for a period of approximately one to two years, during which time they forage on macroinvertebrates and insects. As the juveniles continue to grow and mature, they go through a psychological transformation process called smoltification. And it is during this smolting process that it allows the steelhead to physiologically adapt from a freshwater environment to a marine environment.

As they've gone through that smolting process, the juveniles then migrate downstream, typically during the late winter or spring months, in response to storm water runoff and increased flows, migrating back down into the ocean where they resume their life cycle. And it was this life cycle that steelhead, in combination with information on their habitat requirements, that serve as the

foundation and framework for the design of many of the studies that have been conducted on the Santa Ynez River.

The specific objectives of the scientific studies have been primarily to characterize the diversity, abundance and condition of steelhead and other public trust fishery resources within the lower river, to characterize habitat quality and availability, both within the main stem as well as with the tributaries and to identify the factors that affect habitat quality and availability for steelhead and other fishery resources, to identify and evaluate alternative instream flow regimes and to identify and evaluate nonflow measures that would improve or enhance conditions for steelhead. Nonflow measures, for example, would be passage improvements at existing impediments or barriers that might obstruct the upstream migration of adult fish into suitable habitat.

The information from these investigations was used to identify and evaluate various alternative management strategies and actions that were specifically designed to improve habitat conditions to maintain fish in good condition, to protect, maintain and improve habitat conditions for steelhead and to improve overall habitat conditions for a variety of fish and wildlife species within the Lower Santa Ynez River.

The scientific investigations really focused on four

interdisciplinary areas. They included hydrology, water quality, habitat characteristics, both within the main stem and tributaries, as well as information collected on the fishery resources themselves.

In terms of hydrology we utilized the extensive body of hydrologic information that Mr. Shahroody has previously discussed to characterize the seasonal and interannual variability in instream flow conditions within the main stem tributaries. We examined the factors that result in breaching of the sandbar, which I mentioned earlier as a complete barrier to steelhead migration within the river system. We examined strict stage discharge relationships at various locations within the main steam as they affect upstream and downstream steelhead passage. And we examined the WR 89-18 releases to recharge downstream groundwater basins. All as part of the hydrologic backdrop for our investigations.

In 1993 with the adoption of the first MOU for the Santa Ynez River fishery investigations, a fish reserve account was established. The fish reserve account allocated 2,000 acre-feet of water from storage which could be used at the discretion of the Santa Ynez River Technical Advisory Committee to achieve two primary objectives. The first objective was to maintain and protect fishery resources. And the second objective was

to use that water resource to conduct specific experimental studies that would provide information on the relationship between stream flow and habitat conditions within the main stem river.

We used the results of those investigations to identify instream flow regimes. They became part of a Fish Management Plan that Ms. Baldridge will discuss later in her testimony. And the instream flow releases for steelhead are currently being made in compliance with the Fish Management Plan and also the NOAA Fishery Biological Opinion that emerged from those scientific investigations.

We also looked at water quality with a primary focus on water temperature monitoring within both the main stem and tributaries which was identified early in our investigations as a primary limiting factor affecting habitat quality for steelhead. We deployed a network of temperature monitoring units throughout the main stem and the tributaries to characterize seasonal patterns and water temperature conditions, to examine the longitudinal gradient of increasing temperatures moving downstream of Bradbury Dam. We also conducted a literature review to try and identify the thermal tolerance criteria for steelhead. And unfortunately, the majority of work that's been done on thermal tolerance for steelhead has been the result of investigations conducted in the Pacific

Northwest, and hence may not be directly applicable in terms of the thermal tolerance to steelhead that have evolved in more southerly climates. And hence we use the best information we had available, but we consider it to be guidelines rather than specific thresholds or criteria for purposes of looking at thermal conditions within the river and tributaries. We assumed an average daily temperature of 20 degrees and a peak hourly temperature of 24 degrees centigrade as defining suitable conditions for steelhead, keeping in mind that those were guidelines, not absolute criteria.

The results of the water temperature monitoring showed that water temperatures are suitable, given those general guidelines, during the late fall, winter and early spring throughout the lower watershed. Water temperatures are within the range considered to be suitable between Bradbury Dam and Highway 154 during the summer months. However, the temperatures at a number of monitoring locations, as you move further downstream from Highway 154, exceed the general criteria that we had established for juvenile steelhead rearing during the summer months. We also looked at dissolved oxygen concentrations.

We, through our habitat surveys, identified algal accumulations that occurred in the main stem Santa Ynez River downstream of Highway 154 during the late spring and

summer. And results of day and night dissolved oxygen monitoring showed depressed dissolved oxygen concentrations in many of the pools downstream of Highway 154. The WR 89-18 releases proved to remove much of the algae from these pools. And the reduction in algal accumulations directly improved habitat quality and conditions downstream of Highway 154 during the summer with respect to dissolved oxygen.

We have also been monitoring water quality conditions as they affect habitat within the Santa Ynez River lagoons since 1993. Periodic monitoring includes water temperature measurements, dissolved oxygen concentrations, in addition to salinity gradient. We have also conducted extensive water temperature monitoring within the tributaries. The water temperature monitoring that was conducted within the tributaries was used in combination with the habitat surveys to identify those priority areas that would receive first attention in terms of development of the Fish Management Plan. So it was used as part of the prioritization process as well as to identify opportunities and constraints that occur within the tributaries that would affect habitat quality for various life stages of steelhead.

In terms of habitat characteristics, we have conducted habitat mapping within both the main stem and

tributaries. The results of the habitat mapping within the main stem, particularly in the upper reach close to Bradbury Dam, showed that the habitat conditions are generally a diverse mix of habitat types. Riparian vegetation is relatively poorly developed in the main stem downstream of Highway 154. However, habitat conditions and riparian vegetation within the reach from Bradbury Dam to Highway 154 are generally good. And hence, again we identified that as one of our primary management zones for inclusion in the Fish Management Plan.

Portions of the tributaries are well shaded. They provide good cover as well as shading in terms of temperature conditions. It's not consistent throughout the upper tributaries, but certainly many of the tributaries have good established conditions. Pool habitat primarily within the main stem downstream of Bradbury Dam, including both the Stilling Basin and Long Pool provide habitat for juvenile and older adult, older life stages of steelhead as well as a number of other fish species, including large mouth bass, sunfish and other fish.

Gravel of suitable size for steelhead or rainbow trout spawning occurs within the main stem as well as within the tributaries. We have looked at the main stem in terms of passage barriers and really identified two

primary areas of concern. One has to do with low flow conditions occurring within riffle areas; and the second are the beaver dams that have become established on the Santa Ynez River.

To address the main stem passage issue with respect to flow, a whole series of studies were conducted as part of these investigations to identify fish passage opportunities, the stage discharge relationships that provide suitable conditions for passage and those have been embodied as part of the foundation for our investigations. We have also conducted investigations of fish passage within the tributaries, and that's identified a number of passage barriers and passage impediments. Scott Engblom will be discussing those in more detail. Several of those passage impediments became the subject of early implementation actions as part of our program.

In terms of the fishery resource, the fish community within the main stem, particularly in the larger, deeper pools, is dominated by introduced species, including large mouth bass and some of the bluegill and sunfish. All of the native species that were reported from the river in the 1940s were still present in our studies. We have found that rainbow trout and steelhead were most abundant within the reach downstream of Bradbury Dam to Highway 154 and became substantially less abundant within the reaches

downstream of Highway 154, both Refugio and Alisal Reach.

We have observed juvenile rainbow trout steelhead within some of the pools that exist during the summer months in the area downstream of Highway 154. Those fish were observed to survive throughout the summer months in these isolated pools. In some cases experiencing water temperatures that we thought were in excess of the general guidelines that we had originally established, showing the importance of cold water refugia and other micro habitat conditions in terms of habitat conditions in that area. We found that rainbow trout and steelhead are abundant in some of the tributaries and that provided further information in addition to our temperature monitoring and our habitat work to help us prioritize areas for inclusion in the Fish Management Plan. And we found that the tributaries support populations primarily of native species, including in many cases rainbow trout and steelhead.

Spawning surveys have been conducted. And in this case we're observing redds as evidence of spawning. Redds were detected in the main stem in 1998, in 2000 and 2002 although in relatively low numbers. Redd surveys are extremely difficult to conduct during the winter months because of turbidity and high flow. We've also observed steelhead spawning as evidenced by redds in the number of

the tributaries, and we found that the tributaries support a range of age classes of steelhead, including young of the year, which provides further substantiation of successful reproduction in a number of these areas.

We have used the body of information collected over the past decade of investigations to identify these various limiting factors, to identify the opportunities and constraints within various portions of the watershed as they affect habitat quality and availability. We've looked at the various environmental factors that affect those conditions, and we've used that information to help establish the foundation for identifying appropriate management actions to protect and enhance conditions for steelhead. That will be the subject of Ms. Baldridge's testimony. We have also used this body of information to produce a biological assessment that was submitted by the Bureau of Reclamation to NOAA Fisheries as part of the Section 7 consultation and became the scientific foundation in part for the Biological Opinion.

We have also identified through these studies the variability and uncertainty that naturally occurs within a watershed such as Lower Santa Ynez River. Variability and hydrologic conditions within and among years, within and among areas, to address the variability and uncertainty that we recognized in our studies. We have identified the

importance of maintaining flexibility and adaptive management as a key element to the successful implementation of Fishery Management Plan, to be able to use information on an ongoing basis to refine our decisions and improve our understanding. The Scientific investigations that we have described in many cases are ongoing. Monitoring is continuing to occur within the river that provides additional information on the status of the fishery resources from year to year, provides the technical input to evaluate the performance of various management actions, and it provides the scientific input to making informed adaptive management conditions. And it is the bases of scientific investigations over the past decade that has really formed the foundation for the Fish Management Plan, the identification of the actions designed to protect and enhance conditions for steelhead and other aquatic resources within the watershed.

That will conclude my testimony.

MR. WILKINSON: Thank you, Dr. Hansen.

Ms. Baldridge, you're next. I would like to ask you first whether Cachuma Member Unit Exhibit No. 226 is a true and correct copy of your testimony?

MS. BALDRIDGE: It is.

MR. WILKINSON: And whether Exhibit 227 is a true and correct copy of your statement of qualifications?

MS. BALDRIDGE: Yes, it is.

MR. WILKINSON: And finally, is Cachuma Member Unit Exhibit 243 a true and correct copy of your Power Point presentation?

MS. BALDRIDGE: It is.

MR. WILKINSON: Would you please summarize your testimony.

MS. BALDRIDGE: Yes, thank you. Good morning. I am very happy to be here this morning. It's been a long process to get to here and it's been a very rewarding one. When we first started working on the Santa Ynez River, there were no flows below Bradbury and the only habitat there was an isolated pool that was filled with algae. Many of the tributaries were blocked. Hilton Creek used to dry up routinely, and we would find stranded young rainbow trout, steelhead in the streams. So, we've come a long way.

I am Jean Baldridge. I have been working in the Santa Ynez since 1990 when I conducted some studies in the upper basin. In 1993 when the MOU formed the SYRTAC, as it is called, and the consensus process, I provided some assistance for a couple of years. Then in 1995 I came onto the project in a more direct fashion as the project coordinator. My job was to provide assistance to the Department of Fish and Game in overseeing the activities

of SYRTAC and to begin to develop some management alternatives that the SYRTAC looks at for implementation in a management plan.

I currently serve on the Adaptive Management Committee that was created under the 2001 MOU. And I was assisting the Bureau in the Section 7 consultation.

Well, for the first assignment to get to the management activities, the plan was designed -- the goal of the plan was really to take the information we had and search for opportunities for what we could do for the fishery resources in the Lower Santa Ynez River. Very quickly we determined that we needed to focus not only on the main stem but also on the tributaries. That is a key element of the plan, regaining connectivity in those habitats.

I think that the implementation of the plan will be a key step in moving the recovery of southern steelhead forward. We have had a number of activities in other basins that have come about since the listing, and there has been several good projects that are going on within the Ventura River and Santa Clara River, and it looks like we are making some process in reversing some of the trends.

Next slide please.

These are the milestones of our alternatives

development process and evaluation. The fisheries MOU started the whole thing in 1993 and that occurred out of the Board hearings that were in 1990. Dr. Hansen talked about the Fisheries Data Synthesis Report which was published in 1997 and included a compilation of data collected up to that time.

We began to work on the management alternatives report. When I was before the Board last in Phase 1 I talked a little bit about the process of doing that with the consensus committee and the development of the SYRTAC and a number of meetings and public outreach that we had at that time. We had a number of brainstorming sessions to identify the management alternatives. We conducted those both with the technical staff that was working on the project from all of the agencies as well as a significant outreach to landowners and other interested parties that might have ideas. Our feelings were that from wild and crazy ideas sometimes come very implementable ideas, and so we started the very broad net.

We developed over 50 alternatives that were evaluated. We conducted a screen program for those alternatives.

Can I have the next slide, please? I am sorry.

I also want to point out our target species were these -- for these species. We really focused on Southern

California steelhead.

Move on, please. Thank you.

In identifying the plan objective we really wanted to have a locally based plan, and we wanted to make sure that the plan, while improving conditions for fish, also took into account other special values and resources that might be adversely affected. We had a screen program that allowed us to look at that from a management development perspective.

Next slide, please.

In the plan we had a number of activities that came out of the alternatives that we ended up implementing. One of our priorities was to create new habitat, and one of the ways that we would do that was by adding flow to the river and to Hilton Creek. We also wanted to improve access to habitat, particularly in the tributaries and to look at access in the main stem for the fish to move up and reach spawning areas in the upper part of the basin, right below the dam, and then also in the tributaries.

Since much of the drainage is privately owned, as you noticed from previous testimony, our public awareness program and public education is an important component. For many of the projects we need landowner participation for us to conduct, because an awful lot of the streams are located on private land.

We also in the plan are continuing our investigations of the upper basin. We had a number of alternatives that looked at various actions up there. And we have no current recommendations to move forward with those other than to continue the studies.

Next slide.

In creating new habitat we developed the target flow releases that would be downstream of Bradbury Dam. We focused on a management reach down to the 154 Bridge. That area, as Dr. Hansen's testimony, has a good structure, good water temperatures and a real opportunity for us to be able to maintain summer flows in a temperature range that would be suitable.

The target flows that we ultimately came up with, these flows were worked on in what we called our conjunctive use subgroup, which included a wide variety of participants from the TAC. Really tied the flows to what kind of a water year we were having and what kind of storage was available in the reservoir. One of the paradigms that we followed was in wet years we have a lot of better opportunities for fish use in the basin. Our tributaries are flowing. There is a good summer habitat there. When the fish are moving down to the main stem, we provide higher flows so more opportunity for rearing during that time frame. So when we have a spill, over

20,000 acre-feet and the year after that spill when we're still expecting a lot of production in the basin, we'd be providing ten cfs as a long-term target at the 154 Bridge.

During those years we're also providing one and a half cfs down to Alisal Reach to make sure that we are able to maintain continuity in some of the areas for refugia and that we have better conditions in the isolated pools that may be in that reach. In years where we don't have a spill and we are not in a year after spill year, we would be providing five cfs for habitat maintenance in that reach.

As the reservoir levels decline, below 120,000 acre-feet and we start to get into shortages, we have established the fish flow there at two and a half cfs. For Hilton Creek we have a minimum flow of two cfs. This is water that is taken out of the reservoir and put into the upper part of Hilton Creek on Bureau property. That water then travels down Hilton Creek into the Santa Ynez main stem. We provide the flow in Hilton Creek, two cfs, in all years until the pump doesn't work anymore, and that happens about a reservoir level of 30,000 acre-feet.

The values that I've put on this slide, they're the percent of the time those flows are likely to be met, look at how frequently the flows in the river during the implementation of the total of programs. So for example,

if you look at the years target flows, this came out of the information that Ali Shahroody provided to us, 38 percent of the time we would have ten cfs down to 154. 75 percent of the time we'd have one and a half cfs down at the Alisal Bridge. That is how.

The other way we looked at for new habitat is we have an adaptive management account, which is 500 acre-feet which comes from the surcharge which is to be used at the discretion of Adaptive Management Committee for additional flow augmentation either in the main stem or Hilton Creek.

Since Hilton Creek turned out to be such a wonderful place for fish to rear, we looked at opportunities to expand those rearing conditions by creating a channel down the side of the floodplain to help have tributary conditions along there. We are in the process of continuing to investigate that. We have some questions as to how workable that would be given the infiltration rates that occur when flow goes down to the river channel.

This is Hilton Creek before and after the watering program. We had a ceremony in December of '99 and the slide on the left is Hilton Creek before and 20 minutes later is Hilton Creek after the water was turned on.

Next slide. Thank you.

We have also looked at improving access to habitat

through fish passage releases. We did a lot of evaluation of this in concert with NOAA Fisheries when we were working on the Biological Assessment/Biological Opinion. We set 3,200 acre-feet in fish passage accounts just to be released to augment storm flows. We wanted to extend the time that there were higher flows in the Santa Ynez River to provide greater opportunities for upstream passage. So when we have a flow of 25 cfs at Solvang, we know that the watershed has been rewatered, the groundwater tables are up and that we have passage, we have flow all the way to the ocean. We make 150 cfs release from the dam and to have that reach 25 cfs 14 days later.

One of the other major elements of the Fish Management Plan is really access to tributaries. Tributary habitat provides an extremely important opportunity for steelhead and for other native species there, and we wanted to make sure that we were able to correct some passage impediments that have grown out of road construction and others. Many of our problems with passage are road related.

There are two here that I have illustrated. One is in Quiota Creek where we have a lot of low water crossings. This is a county road, so we are working with the county to repair all eight of the Quiota Creek road crossings. We also have a culvert on Hilton Creek which

is the other one at 154; that is a CalTrans project. We are hoping that we also will be able to convince additional landowners to help us work with them, with their low water crossings so we can do a better job of helping them manage their riparian.

Next slide.

We have some projects there that we're contemplating, to look at some site specific issues associated with streams, and then we have some larger opportunities which is gratifying to talk to landowners about conservation easements and leases so we can better conduct the riparian management.

One of our projects is the El Jaro Creek banks. We have a project that Scott will talk a little bit more about, how we are going to try to repair that bank.

Next slide.

As I mentioned, because we have such a high preponderance of private ownership in the downstream section, we spend a fair amount of time working with landowner outreach. We need their permission to do our sampling. We need their permission to continue to do projects. We have public meetings. We have had workshops. We provide grant application assistance if they want to go for some of the federal grants that are available from Fish and Wildlife, NRCS and also the state

habitat improvement programs.

Next slide.

Some of the upper basins actions that we considered during the plan, we were concerned about the stocking of nonnative trout in the upper basin. They've stocked Cachuma in the upper forest service land. So we wanted to see if there was a better way to manage that so we would have protection of the integrity for the downstream stocks. We also looked at a number of opportunities to move fish from downstream, upstream and from fish upstream, downstream and any combination of the two. We evaluated ladders at the dam and the fish bypass channel. And trap and truck seems to be the most feasible opportunity that we had.

Next slide.

So of the implementation challenges that would be associated with trap and truck and some of the other ones were collecting downstream migrants. When migrants are moving downstream, they are difficult to catch. We weren't sure that the ones that we catch would be the right ones, whether we put fish up there would eat the ones we put or they are stocks that have been up there that have had some genetic integration from hatchery stock. So there is genetic questions that we need to resolve, and we are in the process of conducting genetic

analyses up there to try to answer some of those questions.

He also looked at the effects on other species. Since tidewater goby were a listed species, we focused a bit on their potential effects to them. They are down in the lagoon. We did find that they were abundant. When we sampled down there to find steelhead, we exceeded our permit with the first sinkhole. We have also looked at whether our fish passage releases would adversely affect other resources. Since they are released on the back of natural storm events, we don't really find that we would have adverse effects associated with those.

Next slide.

The target flows we expect will benefit the river species and main stem habitat. And within the tributaries Hilton Creek our passage account will benefit specific lamprey which are in the river and other anadromous species. We don't expect other adverse effects on native species based on the implementation of the Fish Management Plan.

When we looked, we had a lot of discussion about success criteria with the plan, as we move forward to develop it. The Fish Management Plan outlines some specific goals and measurable objectives that are based on habitat and improving habitat quality as opposed to fish

or fish populations. We are looking for successful implementation of the measures within the plan and then looking to see if those measures improve habitat quantity and quality.

We do look for habitat utilization, and we do have a significant monitoring program that evaluates where we see fish, when we see fish, when are fish passing. But our success criteria are really based on habitat.

As Dr. Hansen mentioned, and you are going to hear more about this from David Young as we move forward, the Adaptive Management Program is a key element of this program. We have many questions that we are answering. Our passage program is fairly experimental as well as we want to make sure we can identify other opportunities that come to light and be able to incorporate the information from our monitoring program back into the management actions to make sure that we are managing the most effectively.

Next slide.

Another part of the plan which I think is very helpful is we do have an opportunity to develop additional projects. We worked hard with NOAA Fisheries on the Biological Opinion so that we can allow continued development of additional habitat enhancement and improvement projects within the context of both the Fish

Management Plan and the Biological Opinion.

In another project I had the opportunity to work with Dr. Peter Moyle to look at good condition criteria. And in that process we looked at good condition as having three levels. Good condition is, and this is certainly the opinion of the four biologists that worked on this project, and I am sure there will be some biologists that agree with us and other biologists that will have their own definition of good condition.

In here we were looking at individuals where they're healthy and do perceive good predator response, active fish. Certainly the fish in the Santa Ynez have those qualities. We have good, great rates and very active fish.

For a population criteria we looked at providing extensive habitat for all life stages and broad distribution of habitat. So we were able to have the basis for a population. In the Santa Ynez, when we first started working there, what we had is very fragmented population that was basically centered around Salsipuedes Creek. As we've been able to implement the management action associated with the plan for Hilton Creek and look at some of the barriers, we will move much more fully into having extensive habitat for all life history stages. We do have all life history stages currently utilizing both

the Salsipuedes and El Jaro area as well as the tributaries up through the middle portion and in the upper river with Hilton Creek and downstream of 154.

In our community, as Dr. Hansen mentioned, much of the community in the lower river is dominated by introduced species. We also have some niche overlap with the Arroyo chub which is a special species of special concern introduced into the Santa Ynez River as well. I think as the plan was forwarded and we will see that we will get an increase in proportion of the community that is contributed by the native fishes, but I think the exotic species will always be a continuing problem for community criteria and be a condition.

In conclusion, I think that this plan will increase the survival and recovery of Southern California steelhead. That was a quote that came from our Biological Opinion, which we are very proud of. We also think that it will have substantial benefit to public trust resources in the lower river. I think there is high potential for success of the actions. We have tried and true actions that are in place. We have a good monitoring program and adaptive management process that will allow us to make changes and improve those.

I believe the implementation of the plan will improve the condition of the fish population in the Santa

Ynez River.

That concludes my testimony.

MR. WILKINSON: Ms. Baldridge, before moving on to Mr. Young, I would like to go back to Slide 15, if we could. You mentioned as part of your testimony that you are continuing to investigate upper basin trout genetics and historical stocking.

Can you describe for us what some of the issues might be with regard to that?

MS. BALDRIDGE: With the genetics in the upper basin?

MR. WILKINSON: Yes.

MS. BALDRIDGE: In the Cachuma area, Lake Cachuma and in the river reach upstream from there we've had stocking that's been going on since the project was constructed. The Department of Fish and Game has a recreational stocking program that comes from the Filmore Hatchery and then the fish added to the Cachuma have actually been Idaho stock in some years. So you've had a long time of stocking exotic trout, if you will.

We are uncertain exactly whether those fish have blended with the more native stock which is in the tributaries and whether there has been some genetic integration in that reach. As you move further upstream in the basin, you find less and less opportunity for

integration from hatchery stocking. There has been some stocking historically in campgrounds above Gibraltar.

We have a -- there was a Dingell-Johnson funded program that SYRTAC conducted some of the sampling that Jennifer Nielson is working on the data for that. We have additional data collection scheduled for next spring to look at those tributaries, and we have been providing samples to the Santa Cruz lab for known fisheries for many of the genetic samples, both in the lower basin and in here.

We are looking to see what type of genetics we have in those fish up there, how closely they are related to downstream stocks, which is one of the first questions you want to answer as you contemplate different management actions.

MR. WILKINSON: Thank you very much.

Mr. Young, you're up next. Perhaps Mr. Palmer would like to ask you a couple of questions about your testimony.

MR. PALMER: First off, I have an additional exhibit which is Mr. Young's Power Point presentation and I would like to offer that and mark it as DOI Exhibit 15, if I could.

Morning, Mr. Young.

DR. YOUNG: Good morning.

MR. PALMER: Would you please -- is your written direct testimony DOI Exhibit No. 6?

MR. YOUNG: Yes, it is.

MR. PALMER: And your statement of qualifications is DOI Exhibit Number 11; is that correct?

MR. YOUNG: Yes.

MR. PALMER: I just indicated that we are going to mark your Power Point presentation as DOI Exhibit 15. I just hand you a copy of that, and if you could confirm that is, in fact, your Power Point presentation.

MR. YOUNG: Yes.

MR. PALMER: Do you affirm that the testimony you are about to give is true and correct to the best of your knowledge?

MR. YOUNG: Yes.

MR. PALMER: Would you please proceed to give a summary of your testimony?

MR. YOUNG: Morning, Mr. Carlton, Mr. Silva, Board staff. Thank you for the opportunity to appear before you.

Can you hear all right?

My name is David Young. I am an environmental specialist for the south-central California area office for the Bureau of Reclamation. This morning the purpose

of my testimony is to briefly describe the Section 7 consultation process that Reclamation followed, also to describe the working relationship that Reclamation has had with NOAA Fisheries, which spans nearly five years -- nearly nine years, and also to explain the role of the Adaptive Management Committee.

In 1994 and prior to the listing of steelhead as an endangered species, Reclamation requested conferencing with NOAA fisheries. Conferencing is a process provided for under the Endangered Species Act between a federal agency and either the Fish & Wildlife Service or NOAA Fisheries. The purpose is to identify and resolve conflicts between an agency's action and conservation of a species that is proposed for listing.

Reclamation conferred with NOAA Fisheries on two actions, the Cachuma Project contract renewal and the Bradbury safety dam corrective action, seismic corrective action. NOAA Fisheries made some recommendation that Reclamation would enhance steelhead access and use the tributaries in the main stem river, provide flows for habitat, implement habitat modifications and provide a permanent supply of water for Hilton Creek.

As stated in earlier testimony, steelhead were listed as an endangered species in 1997. At the same time Reclamation was implementing conservation recommendations

contained from NOAA Fisheries. Reclamation was in the process of designing a pipeline to deliver a permanent supply of water to Hilton Creek and water from the fish reserve account was committed for fish studies per the Board's order. I want to point out that that water was also providing habitat in the main stem river.

Habitat modifications were also being developed for the Fish Management Plan. At the time Reclamation began reviewing its operation and maintenance of Bradbury Dam and began informal consultation with NOAA fisheries.

In 1998, a biological assessment using information from the SYRTAC studies was submitted to NOAA Fisheries. Originally, Reclamation proposed to submit to NOAA Fisheries the Fish Management Plan as its biological assessments. And as an interesting aside, that document did contain a measure to trap and truck steelhead at Bradbury Dam, but NOAA Fisheries did ask that proposal not be included.

The biological assessment was revised, incorporating comments from NOAA Fisheries and submitted again in 1999. Reclamation continued to work collaboratively with NOAA Fisheries, especially on the question of providing adult passage in the lower river. And a Biological Opinion was issued in September 2000.

Since then, Reclamation has been implementing the

Biological Opinion. Reclamation has provided instream flows for Hilton Creek, which ranged between two and five cfs. In cooperation with Member Units one fish impediment has been modified; that is in South Salsipuedes Creek. Flows were provided for the management area between Bradbury Dam and Highway 154. A draft plan has been prepared that refines the supplemental fish passage releases. Monitoring studies, as outlined in the Biological Opinion, have been conducted and ramping down for water right releases have been instituted when water right releases have been made.

There is some challenges that Reclamation has, especially at the Highway 154 location, you've heard previously, September 2002 on the measuring station was found to be on private land. That is the measuring station for the Highway 154. It was found to be on private land. At that time access to that station was denied by the landowner. As of now there are no suitable measuring locations within the bridge easement, and another process is being considered. It was also, as you heard, a depositional area upstream of Highway 154 Bridge that does affect surface flows. In addition, beaver dams seem to impound water especially at low flows.

Next slide.

There is an Adaptive Management Committee that has

been established by Biological Opinion and in the Fish Management Plan membership of the Biological Opinion include myself as chair, representing NOAA Fisheries is Matt McGoogin. Representing California Department of Fish and Game is Mary Larsen. Representing CCRB is Jean Baldridge. ID No. 1 is Chuck Hansen. Parent district, Bruce Wales. Fish & Wildlife Service, Bridget Fayhee. City of Lompoc, Paul Bratovich.

I will just conclude with summarizing some of the duties that the AMC performs. When necessary the fish passage may be modified. For example, there may be situations during late spring around the month of May wherein releases for passage may need to be modified in order to focus on outmigrating smolts, monitoring critical riffle areas relative to regarding passage flows in the main stem river. AMC is overseeing the monitoring studies for the BO, the day-to-day oversight of the monitoring studies. And AMC is responsible for implementing the Biological Opinion and the Fish Management Plan.

And that concludes my summary.

MR. PALMER: Mr. Young, just one housekeeping matter with your testimony. I believe that you pointed out to me that there was a typo in your written direct testimony.

Do you recall that?

MR. YOUNG: Yes.

MR. PALMER: We have corrected pages to submit, if you want that, we can add it later. I just wanted you to correct that.

MR. YOUNG: On Page 2 there is a spelling error for the word "environmental." Young can't be too humble on these things. There is a formatting error on Page 11, wherein the word "constructing" should precede the phrase "an extension of Hilton Creek."

MR. PALMER: Thank you.

MR. YOUNG: You're welcome.

(Reporter changes paper.)

MR. WILKINSON: Mr. Shahroody, you're up again.

MR. SHAHROODY: I thought after those corrections by Mr. Young I could go home.

MR. WILKINSON: I would like to ask you, first, Mr. Shahroody, is Cachuma Member Unit Exhibit No. 232 a true and correct copy of your Panel V testimony on water supply impacts?

MR. SHAHROODY: It is.

MR. WILKINSON: We've already, I believe, put before you your statement of qualifications. Is Cachuma Member Unit Exhibit No. 246 a true and correct copy of your Power Point presentation?

MR. SHAHROODY: It is.

MR. WILKINSON: Would you please summarize your Panel V testimony.

MR. SHAHROODY: I will make a brief summary of key hydrologic aspects of the Biological Opinion and the Fish Management Plan. I believe already Ms. Baldridge covered some of those. Namely, instream target habitat reaches, in 154 Bridge, Hilton Creek, also in certain years going over to Alisal Bridge. Also, she covered the variable target flows. I'm not going to cover those. And also, she covered the passage release and adaptive management account of 3,200 and, I believe, 500 acre-feet, combined 3,700.

I believe I covered to some extent under Panel IV the conjunctive use of water right releases. I will have more material to show here, and also I covered under Panel IV the ramping schedule for water right releases which follow the BO requirement for ramping.

Next table, I believe, is the same one as Ms. Baldridge covered. I'm not going to go over that. But I do want to talk about the surcharge capacities. But in light have that I would like to touch upon the Cachuma capacity, and that was to some extent covered yesterday. As it was indicated, the original capacity of Cachuma Reservoir when it was built at full level of 750 elevation

with 205,000 acre-feet. Of course, we have had numerous floods since then, since it was constructed.

The 1989 survey showed there was a loss of about 50,000 acre-feet. The capacity was reduced 190,400. The latest survey of the 2000 shows another couple thousand acre-feet of reduction in storage capacity to 188,000 acre-feet. The total loss is just by subtraction of the 17,000 acre-feet in the reservoir.

Having said that, of course, now we are talking about surcharging the reservoir. Surcharging the reservoir that we have been practicing now, using a portion of the flashboard, the existing flashboard of one foot; .75 of that has been surcharged and that is 1998. That was the first opportunity to do that.

Can I have the next table?

That table shows, if comparing the surcharge of .75 against the 750 elevation, you would gain storage of 2,200 acre-feet. As was discussed under the Alternative 3B, the surcharge of 1.8, that will give us an additional 5,500 acre-feet. Of course, the surcharge of three foot gives us 9,300 acre-feet.

I just wanted to get a brief summary of the surcharges would provide water additionally to the storage.

We made analysis of the long-term BO release

requirement and maintenance of the habitat. For that we used a model for the 76 years, 1918 through 1993, and the analysis was made to see what kind of frequency do we get in terms of flows at Bradbury Dam as far as releases go, flow at 154 reach. I'm not going to go -- right below the bridge at 154 reach, what kind of flows we are looking at with the long-term BO and the flows above, just above, Alisal Bridge, again what kind of frequencies. I am going to show those.

This is frequency of the flows for the 76-year period. Those are done on a monthly average basis, and they are cfs. This figure shows releases at Cachuma Dam, and I'm going to basically point out what the differences are for the 50 percent occurrence, if you want to call it, or the median flow.

The bottom line in red that is basically the historical operation. That shows basically the 50 percent or median flow would be less than 1 cfs. The second one, which is the blue dotted line, which is the current operation, that gets it up to pretty close, I would say, three, probably three and a half. But the aggregation of the colored one, rainbow colored on the top, those are for long-term BO which are 3A, 3B, 3C and 4AM. They are basically bumped together for the local condition. We are looking something in the order of six or six and a half

cfs for median flow or 50 percent occurrence.

Next slide.

This is for the same analysis, but now we are moving downstream to the 154 reach to see what kind of frequency of flow we get. I'm not going to bore you with respect to the red and mid dotted one, but I think the interesting one under the long-term BO, which are again in rainbow colors, it basically displays those stair-step-type frequencies, displays to us, yes, to maintain the flows at two and a half cfs under the dry conditions. We are going to have the first stair-step to the left for a certain frequency of the time, we are going to have two and a half cfs.

The next stair-step is the five cfs where there -- we are talking about the average year type that the five cfs is going to be maintained. Then, of course, Ms. Baldridge referred to the situation of spill year and the year after spill. That requirement is that to provide ten cfs at 154 Bridge. That is shown for the short stair-step to the right.

Next slide.

This is going down to Alisal Bridge. It's about ten miles downstream of Cachuma Reservoir. And again, the similar frequency analysis. Again, a median flow for the long-term BO is elevated from, I would say, two cfs,

pretty close to five cfs. There is improvement there, too.

Now I want to touch upon by making those releases to meet the BO, long-term BO flow requirement, what are the impacts on the Cachuma Project. You've heard quite a bit about that, but this is going to be more of a compact presentation. And the test is to see what happens if we have a repeat of 1949-51, the drought that started from '47, the three critical years of '49 to '51, what would be the impact of the project.

The next one. That is fine.

This is, as it was indicated, the model has, of course, the perfect forecast of three years and what would be the shortages. The important thing is to point out the first two columns with the data on it for Alternative 1, which is the historical operation. If you had a repeat of 1951, against a draft of 25,714, they would have experienced shortage of something on the order of 7,000 acre-feet which is about 27 percent. In other words, we are already entering into whether you want to call it current operation, which is Alternative 2, a future operation, we are already entering into it with certain amount of shortage that is expected to experience. So the other shortages are going to incremental.

Just looking at the 1951. Under the 3C, the

shortage would be about 38 percent up to about 46 percent under 3A.

The next two columns are basically the same thing, using three years, three consecutive years, and cumulatively what the amount of shortage would be. Again, if those three years are repeated under historical operation shortage, they would have shortage of 18 percent, including on average for each of those years.

And now going into the future operation, you are looking at shortages on the order of 26 percent to 32 percent.

Next.

I indicated the model has got sort of a perfect forecast as to when the drought starts and ends. For the water supply manager, and we can't really have a model to do the thinking for the water supply managers, they would want to have some reserve set aside. We can't really do that necessarily in the model. But what we did is we said let's assume there would be one additional dry year. It starts 1941, ends up 1951; '52 was wet. We said we will lift the '52 out and put another '51 in. That is the way we made the analysis to see what kind of shortage that will be experienced.

One thing you have to note is that we have to protect the minimum pool in the reservoir. There is a

minimum pool of 12,000 acre-feet. That has to be protected whether you have a real time operation or whether you have a perfect operation. If you did one additional year of a drought, then we are looking at much more shortages, bigger shortages. And that could be in the range of 50 to 60 percent for the one single year, and, of course, the same thing with lower average percent, of course, on annual basis for the next three years.

Next.

Now having current the impacts on the water supplies from the project, but there are also impacts to downstream water rights. I indicated earlier that the downstream water rights releases are managed releases. To some extent the fish releases, of course, would do some recharging, if you want to call it, in the uppermost part of the basin below the dam. But there are other users downstream that we have to manage water for them. If you notice, Alternative 1, the average downstream water right releases is about 6,300. As we go toward the other alternatives, that amount of water gets reduced. And the significance to downstream water right users is the ability to manage if we hit a drought period, because we have to have a carryover of water in the storage to manage those calls due to the drought.

So what I am trying to say, we would have a smaller

amount of water to manage, and that could be reduced as much as by 10 percent if you went to the 3A or 3B or 3C alternative or also 4A and B. So there is that management aspect that downstream water users have to deal with.

Having talked about releases from the project to maintain flows, habitat flows, under the long-term BO. Also having talked about the conjunctive use of water right releases for that purpose. Of course, there is another component here which is referred to as leakage from the dam. I will touch upon that. I do want to show some graphics in terms of project's contribution based on the long-term BO using the 76 years of hydrology.

What are the project contributions to maintain the BO flow requirements? As you see, it varied from one year to another year because that is a function of hydrology. On an average the project contribution directly for the maintenance of those flow requirements, habitat flow requirements, averages out about 2,185 acres per year. The next one, as we talked about because the conjunctive use operation of downstream water right releases, the project does not have to make the release. The water right releases were through the proper scheduling would actually take care of the BO flow requirements.

In doing so, just to take care of what BO requires as far as maintenance of flow goes, not just the

downstream water right releases, all the way down to Lompoc releases, just for that, that means the project does not have to make a release of about 1,220 acre-feet per year on average. That would be the contribution of the downstream water right releases.

The next slide basically shows the combined contribution from the project and downstream water right releases for the maintenance of the habitat under long-term BO, which is 3,400 acre-feet. There is one additional component in terms of the modeling analysis that I have to also point out. That is basically in the next table. And as I indicated, what is referred to as the leakage from the dam.

This is a leakage I have to indicate is programmed in the model and that is based on leakage rate experience historically, not necessarily from the abutments or from the nature of the construction. This is related to radial gates. We have 30 feet of radial gates. Water is impounded behind it, and it is a function of head. The seals around the gates historically, I think I have to say, Bureau finally took care of that. Used to leak.

So the higher head you have, the higher leakage you have. So we programmed that since it is coming through the hydrology committee modeling process. Over the years that was programmed. But the recent years the Bureau

actually took care of that leakage and sealed it up. But to the extent it is sealed, since that 500 acre-feet average is counted on to maintain the habitat in the model. That means the project has to willfully release that amount, 500 acre-feet from project.

So what is referred to as leakage from the dam would become actual release from the project. So when we add these three components together, we are talking about 3,900 acre-feet of the contribution to the maintenance of the long-term BO habitat maintenance.

That sums up my presentation.

MR. WILKINSON: Thank you, Mr. Shahroody.

The next witness is John Gray.

Mr. Gray, I would like to ask you, first, whether Cachuma Member Unit Exhibit No. 230 is a true and correct copy of your testimony?

DR. GRAY: Yes, it is.

MR. WILKINSON: Is Cachuma Member Unit Exhibit No. 231 a true and correct copy of your statement of qualifications?

DR. GRAY: Yes, it is.

MR. WILKINSON: Finally, Mr. Gray, is Cachuma Member Unit Exhibit No. 245 a true and correct copy of your Power Point presentation?

DR. GRAY: I believe so, but it came to my

attention last night that I may have two slides in my presentation today that differ. I've added two photographs that are at the end of my presentation that may not be in the exhibits submitted to the Board. That just came to my attention last night.

MR. WILKINSON: With respect to those, we will provide copies to the Board and staff, if that's all right.

Would you please summarize your testimony, Mr. Gray.

DR. GRAY: Good morning. My name is John Gray. I am a consultant with the URS Corporation. I have been an environmental consultant for about 22 years in Ventura, Santa Barbara County, working for public agencies. In this matter I have been working with Reclamation and COMB since 1992 on Cachuma Project in various capacities. This morning I would like to talk about three specific public trust resource issues.

The first is the effect of the proposed surcharging on oak trees on the shoreline of Cachuma Lake. The second is the effect of downstream releases for fish on sensitive wildlife species that occur along the lower river; and thirdly is the effect of the proposed surcharging on recreational facilities and uses at the county park at Cachuma Lake.

The source of my information and my testimony is twofold. One is my participation in environmental studies that were provided to Reclamation which in term were given to the State Board staff in support of your Environmental Impact Report. Those studies and that information was provided to Reclamation in the year 2000, 2001 and was given to the State Board for your use. I was also the project manager that prepared the Environmental Impact Statement/Impact Report for Reclamation and COMB on their Fishing Management Plan which was issued several months ago for public review. And then, the second source is I have been working on the Santa Ynez River and the several reservoirs and lakes in the watershed since 1989 for other public agencies.

The first topic is surcharging and its effect on oak trees. To quickly summarize what you've heard earlier, the current lake elevation without any storm or wave action currently is 750 and three-quarters feet. With the surcharge it would be increased to 753. On average that surcharge event would occur every three years. That is when there is high runoff years. On average the duration of that high water elevation would be approximately four months, happening in the spring and early summer. Of course, at any time presently or with the proposed project there would be wave actions or high inflows that could

increase the elevation of the lake beyond those levels. Those would be temporary increases in the elevation that would subside as the wind died down and the storm inflows subsided.

This higher surcharge, the higher lake elevation would affect oak trees. Oak trees surround the perimeter of the lake. They are very abundant in certain locations. In order to address the potential impact of the surcharge, we conducted some investigations in the year 2000 to estimate the number of trees that would be inundated by a three-foot increase in the lake elevation. And in addition we looked at a three-foot wave action zone based on different studies and observations by individuals at the lake. It was determined that an additional three feet would be a reasonable estimate of where high wave actions could affect the shoreline.

What we did is conducted boat surveys to count trees, and we made several observations. One of the key ones is that we noticed, and not surprisingly, that almost no trees are within the current inundation zone. In other words, over the past 50 years that trees that were inundated have perished or were removed. We also noticed there is only a small percentage of trees that appear to be affected by wave action or by inundation above the maximum lake level. So there is an effect on trees above

the current lake level, but that effect appears to be minor.

Next.

I have a couple of slides that I would like to show you that give you an idea of the oak tree conditions along the shoreline. As many of you know who have been to the lake, there are areas, canyons, that have abundant oak trees. Most of them are coast live oak. There are valley oaks in the meadows and blue oaks on certain slopes.

Next slide.

In many cases the oak trees go right to the edge of the shoreline.

Next slide.

In this instance there is actually an oak tree that is rooted at the current maximum level of the lake and appears to be many decades old, has persisted despite inundation at that level.

Next slide.

In other cases trees that are rooted at the lake level have toppled primarily due to erosion of the shore that dropped the trees.

Next slide.

We did develop an estimate of impacts to oak trees. We, again, looking at the inventory of the trees along the shoreline, we assumed that all the trees that would be in

an inundation zone, 753, would perish over time. And based on observations we made at the lake itself, we think that that impact would take many years. My professional estimate is it would take at least 20 years for all those trees to become in poor health, topple or perish. There would be 339 oak trees that would be in that zone. About that in the wave action zone we are estimating about 25 percent of those trees would be adversely affected and either perish or become in poor health. And the total number of trees that would be affected over time due to the surcharge would be 452 trees, almost entirely all coast live oak.

In order to mitigate this impact, working with Reclamation we developed an Oak Tree Restoration Program. The program is designed to replace the oak trees prior to the loss. It is a long-term program. It is designed to allow improvements in propagation and maintenance methodology as the program is implemented. And as many of you know, oak tree restoration can be very successful. It can be poor. It all depends upon the amount of care and the site conditions and your ability to improve your methods as you learn more about restoration. This program is designed with that in mind.

We'd be using state of the art restoration methods and we would have a long-term maintenance program. That

ultimate goal is to replace all the trees at a two-to-one ratio with the target of 20 years there would be twice as many trees growing in good health than there were that was affected by the project.

We have proposed a planning scheme that is described in the Draft EIR for these hearings. The primary restoration site selected is the county park. They identified many areas within the park where oak tree recruitment from natural processes is no longer occurring. There are some very large oak trees that look like they may be getting close to the end of their life and there is a concern that there is not going to be recruitment and oak trees will eventually be scarce in the county park.

There are suitable conditions to plant oak trees there. One of the benefits of planting in that area is that we have facilities and personnel to maintain and protect the trees, to increase its success.

In addition, we have identified other locations federal lands surrounding the lake where additional trees could be planted as required: Storke Flats, Santa Ynez Point, Bradbury Dam. I will show you those on a near photo briefly. We have a planting scheme that is phased. There would be an immediate planting of trees to replace one-half the trees we estimate to be lost. Over 200 trees would be lost, and we would plant to mitigate for that

immediately. Over the next ten years Reclamation would monitor the number of trees that are down due to surcharge event through boat surveys and replace those trees as they are counted.

At the ten-year period there would be a final planting to accommodate all the trees that are going to be estimated to be lost. At that point -- go back just for a second -- at that point the planting would be completed, but there would still be another ten years of maintenance and monitoring in order to achieve the two-to-one replacement at the end of 20 years.

This is an air photo of County Parks. As you can see, much of the area has opened, barren areas that the density of trees was much higher many decades ago. We have identified a very detailed manner where trees could be planted at different densities and indicated where those sites are suitable and where lower densities would be appropriate.

Next slide.

I would ask you to bear with me here. I would like to point out with a laser pointer those other locations which should require you to turn around and see these sites I'm going to indicate. I mentioned Storke Flats. That is an area where oak trees could be planted if there is insufficient area in County Parks. Santa Ynez Point,

at least this area here, has oak trees and there is available area for additional planting. Bradbury Dam has also suitable areas. And if need be, we have areas on the north shore where oak trees could be established, although the logistics are a little more challenging.

Next slide.

As I mentioned, our goal is two-to-one replacement in 20 years. At this point we are estimating the mortality that we would encounter through this program would be about 33 percent. That is based on some observations and experience by County Parks in their own oak tree restoration program they implemented several years ago. It could be higher; it could be lower. That is our initial assumption. So we would plant three to one. But if it is determined that we were having a higher mortality, we have the ability to adjust that replacement ratio and increase it to whatever is necessary to guarantee that two-to-one replacement.

My next topic is to discuss impacts of downstream releases for fish on sensitive wildlife species. I'm thinking four species to discuss. These are species that occur in the watershed in many cases downstream of Bradbury Dam. The California red-legged frog is a federal threatened species that occurs in ponds and perennial reaches of the river and in particularly in many of the

tributaries downstream of the dam. The southwestern pond turtle occurs throughout the watershed in perennial water pools and including the lake. Two-striped garter snake is throughout the watershed and occurs in dense riparian areas where there is seasonal water. And the southwestern fly catcher is a breeding bird that is a migrant. It comes in and breeds on the lower river and then leaves. It has two large populations on the lower river. One near Buellton and another large population downstream of Lompoc.

The proposed releases for fish under the Biological Opinion would extend the period of low flows for longer period of time compared to just historic conditions and over a longer portion of the river. That effect, of course, would attenuate with distance, so that downstream of Alisal Bridge that effect would not be as great or would not be measurable.

But it is my opinion that that increase in low flows in duration and extent would enhance aquatic and riparian habitats for those species, primarily by increasing their wetted surface. That would allow plants to extend their growing season, higher productivity rates that, of course, means the willows and sycamores and cottonwoods would increase in size and coverage, provide more shade. Insects would have more habitats, wetted habitats,

in-plant habitat to thrive and that would have a beneficial affect on all the ecosystem, but also the aquatic species which I mentioned.

There has been a concern expressed about a downside to having releases on some of these species, and in particular the concern about the ongoing future water right releases for the Below Narrows Account. They would pass through an area where the willow flycatcher nest, both in Buellton and Lompoc, and the nests of the flycatcher are established and maintained during a period when Below Narrows Account releases may be made, and that is during the period May through June. The bird builds nests on small willow trees and usually three to 12 feet above the water. Usually established close to the water because they are feeding on insects and want to be close to their food source.

In uncertain conditions Below Narrows Account releases may pass through the Buellton area. Those flows have potential to actually flood the base of those plants. It could physically disturb or move those stems in which nests have been established. That issue was addressed in the Environmental Impact Report, and we came to the conclusion that this would not be significant impact for several reasons.

Both based on observations and hydraulic modeling,

the nature of the flows in the Buellton area where the birds are nesting is very shallow, graded flows that are unlikely to exceed 12 inches. The hydraulic forces of those flows are not going to be sufficient to knock down trees. They may shake limbs. They may cause some disturbance to nesting, but we believe that wouldn't be significant impact looking at the entire population.

Most of the releases for the Below Narrows Accounts would occur after July when the birds have left their nests, and, of course, the releases don't occur every year.

Thirdly, the observations over the past ten years is that the flycatcher population is striving, increasing in its extent the number of birds, and it appears to be making use of favorable flow conditions on the river.

My last topic is to discuss the impacts of surcharging on recreation at Cachuma Lake. As you may know already, Santa Barbara County operates the county park at Cachuma Lake under a 50-year contract with Reclamation. That contract expired in January of this year, and the County is now operating under a two-year interim contract with Reclamation. The primary attractions at the lake, not surprising, are fishing, camping and nature tours. And in recent years has been approximately 900,000 visitors each year.

Surcharging will have an effect, of course, on the facilities. And we have to keep in mind several factors when we discuss those impacts. First of all, we have to look at the static water level. As I mentioned, a three-foot surcharge would take it to 753. If there are wave actions from storm flows or high winds during storms, you could have that increase in the lake level and then rest and that could be as much as three feet. The impact, of course, of surcharging would not occur every year. It would depend on the rainfall and runoff conditions, and on average it would happen every three years for approximately four months. When discussing impacts, it is important to distinguish critical versus noncritical facilities. Critical facilities at the county park, of course, are those that provide for public safety and health. And noncritical facilities are those facilities that are a convenience and an amenity to the public. An impact on those facilities would not represent a hazard to public health and safety.

Lastly, when we are talking about impacts, we should acknowledge that there have been high water levels at the lake associated with storms since 1969, the last large flood event in the watershed. There has been four, five occasions in which water levels have exceeded 753 at Cachuma Lake, and County Parks has had to accommodate

those short-term increases in the water level.

The critical facilities that would be affected by the 753 lake level elevation with wave action, of course, is the drinking water intake and treatment plant that is at the park that provides water for visitors and employees. The base elevation of that plant is 753, so it would be affected immediately by a higher lake level. There are two sewer lift stations that could be affected if there was a high wave runoff, and those facilities would have to be shut down if the water got to the 756 level.

In addition, there are several other facilities, although they are not critical, they are important to the operation of the park. They would be affected by a three-foot surcharge and a wave run up. The boat launch, the top of that launch is at 750. It would be affected immediately. The marina path and floating docks where private parties have boats and people can rent boats, they're at 753. Those would be affected by a surcharge. And the marina shop is very close to that elevation.

Next slide.

This a photo of the marina and the launch. You see in a distance the boat launch. The top of that is at 750. The marina has a path that goes to the floating docks. That's at 753 and the shops are off to the right and in

the shade. The bottom of those buildings is at 756.

Next slide.

This is the water treatment plant. Floor elevation at 753. And it's an exposed point at the parks, so it would be vulnerable during the surcharge.

Reclamation has recognized that these facilities can be relocated and these impacts can be avoided and mitigated. The County would have to relocate those facilities pursuant to their requirements under their agreement with Reclamation. The greatest challenge, of course, is funding. The capital outlays that the County at this time does not have in their budget for Cachuma Lake, but the County has initiated actions over the past several years to relocate these facilities through grant funding and getting funds through Reclamation and their own funds.

The lift stations have been fully designed and funds are available for construction, and it is my understanding the County will be able to complete the relocation of the two lift stations by the end of next year. The County is currently looking at design options for the water treatment plant and seeking capital funds through Proposition 50, and the County has funds for construction of a boat launch, but is having to redesign that to accommodate the surcharge and if that is completed in a

timely manner, that could be accomplished in the next several years.

At this point it's been my understanding and observations that the County, COMB and Reclamation are in discussions about a type of base surcharge that would allow the County to complete their relocation of the facilities while still allowing the surcharge to occur in a timely manner.

That concludes my testimony.

MR. WILKINSON: Just following up on that last comment. If a 1.8 foot surcharge were permitted or by the Bureau of Reclamation immediately, would there be any critical facilities in your view that would be affected at the county park?

DR. GRAY: With a 1.8 foot surcharge the water treatment plant would not be inundated with static water level, and the sewer lift stations would not be affected. The boat launch facility would be rendered inoperable. It would flood the top of the boat launch.

MR. WILKINSON: However, the boat launch facility, I recall from your slides, are not a critical facility?

DR. GRAY: That's correct.

MR. WILKINSON: Thank you.

Our next witness is Mr. Scott Engblom. Mr. Engblom

has been the project biologist for many years on the Santa Ynez River.

And I am going to ask you first, Mr. Engblom, is Member Unit Exhibit No. 228 a true and correct copy of your testimony?

MR. ENGBLOM: Yes, it is.

MR. WILKINSON: Is Member Unit Exhibit No. 229 a true and correct copy of your statement of qualifications?

MR. ENGBLOM: Yes, it is.

MR. WILKINSON: Finally, is Member Unit Exhibit No. 244 a true and correct copy of your Power Point presentation?

MR. ENGBLOM: Yes, it is.

My name is Scott Engblom. I have been a fishery biologist and have been a member of the Santa Ynez River Technical Advisory Team as project biologist for the last ten years, and I am currently staff for the Adaptive Management Committee, also. Currently employed at the Cachuma Conservation Release Board.

I am here to talk about the monitoring requirements and implementation of what we have done and some of the projects that we have completed in the lower basin.

This is a map of the lower basin. As you can see we have a number of projects, some of them that we have

already completed and others that we are in the process of completing. Starting from the downstream most end of the Salsipuedes Creek-Highway 1 crossing project. It is a fish passage enhancement project completed in 2002. And it's -- we have another one upstream of there that is very similar that is going to be completed also this year, but in the last two years it has already shown some passage of adult and juveniles during low flows, which is what it was designed to do. It's been a good project.

Moving up into the basin a little bit, we have been in discussions with landowners, as Ms. Baldridge discussed earlier, with respect to conservation easements and demonstration projects. Saturday we had a discussion and first initial meetings with some of the landowners, talking about ways to reduce sedimentation inputs into the creeks, particularly on El Jaro Creek, and it was a good meeting in the fact that we got some good participation with some of the more, for lack of a better word, conservative minded landowners. It was good, a lot of good questions. It was a good presentation, good meeting.

We are also in discussion with some landowners to look into possibly purchasing or leasing conservation easements to again make habitat improvements along those lines.

Moving further up into the basin, at Quito Creek

there is a series of nine road crossings that cross the creek in about three miles, a linear distance of about three miles, and eight of those crossings are going to be repaired, three by the county and five by Cachuma Conservation Release Board. Those -- we're hoping to get those completed. It's looking like we might have to wait until next year. We're trying to get them done this year to try to take advantage of any high flow events that we have.

Again moving further up into Hilton Creek, where since 1999 the Hilton Creek watering, actually since 2000, Hilton Creek watering system has been on line and it's been producing great results with respect to fishery resources, steelhead in particular, in the basin. There is a couple other projects in Hilton Creek that look at eliminating or repairing one fish passage impediment that is right below the lower release point and also the Lake Cachuma surcharge which would benefit both passage and rearing flows.

Some of the duties that we have been conducting in the main stem and tributaries, we have been conducting migrant trapping efforts from pretty much January through the end of May of each year. Also, we have been conducting biweekly spawning surveys in both the main stem and the tributaries. That really helps in the fact that

when some of these high water events that we get, we are really not able to trap effectively because the high flows are just -- we can't keep the traps in. So we use these biweekly redd surveys to go through and find out what fish we missed, see where they have been spawning and localizing some of the areas for further evaluation.

We are looking at some of the habitat at Hilton Creek as we are providing water for it to see how it relates to the water releases we are providing. We are looking at evaluating aquatic habitats throughout the region, its quantity and quality over time. We are looking into the refuge pools through our integrated network, monitoring the seasonal patterns and diel variations in water quality through the year.

Slide, please.

Again, as mentioned, we are looking at the seasonal water quality suitability for steelhead in all these areas. Both in the lagoon and the Lake Cachuma we are conducting quarterly water quality profiles. For Cachuma it is more along the lines of how the water -- how the temperature and dissolved oxygen relates at different depth and how those waters from the lake are released into Hilton Creek, making sure we are getting nice cool water into the area where the fish are inhabiting.

In the lagoon we are looking at doing quarterly

measurements through there. We are also monitoring during the migration time, finding out when the sandbar opens and when it closes in relation to storm events, to try to find out how quickly or slowly the steelhead are moving upstream once the lagoon opens in relation to stream flows. We're conducting weekly flow measurements in the main stem and Hilton Creek as part of our target flows. And we are evaluating, once we get all of the tributary enhancement projects and some of the other ones on line, evaluating those on a regular basis.

This is a photo of a typical migrant trap that we have. This is in Salsipuedes Creek in 2001. There is two traps, each one facing a different direction to capture upstream or downstream migrating fish, and they have been really successful in flows, at least in Salsipuedes Creek, in flows of about 50 to 70 cubic feet a second we are able to trap. On this picture, if you look to the right, there is a light that is up there that we use when we go out and trap at night. During the high flow events, water flow can sometimes get above where that light is, so it is important we pull our traps out.

This next slide is showing some of the captures we had since '95 in both Hilton and Salsipuedes Creek. You will notice in '98 and 2000 we did not get very good results simply because of regulatory issues with

biological opinions from both NMFS and Fish & Wildlife Service, which is a little unfortunate. They were -- particularly '98 was a good marine year.

Another thing to note on the graph from 2001 to 2003 this is when we have been providing flows into Hilton Creek. We've been getting adults and juveniles migrating back and forth through the system, and it's proved really well.

MR. WILKINSON: Before we leave that slide, can you tell us in a little more detail what those regulatory issues were in '98?

MR. ENGBLOM: They both -- both of them had to do with biological opinions, getting the necessary scientific collection permits to conduct the studies for steelhead in that one in particular. The other biological opinion was for the red-legged frog. We were catching a few in the traps.

MR. WILKINSON: Before we move on, I want to also clarify that these activities that you are describing are being conducted on behalf of and being paid for by both CCRB and Improvement District No. 1?

MR. ENGBLOM: That is correct.

The next few pictures are some of the steelhead that we have collected in the streams. We typically get a couple very large fish a year, several that we capture,

and we know there are others moving up through just by the evidence of some of the redds that we have seen.

This is a female that is migrating downstream. You can see they do get beat up a little bit as they are stuck in the redds and everything, and I will allude to some of the benefits of our fish passage enhancements because it is really going to help those fish in particular.

Our downstream migrants, we have collected a number of smolts over the years. Particularly the last three years we have really good results. We have seen smoltification happening in Salsipuedes Creek on a regular basis. One interesting thing to note on this graph is, of course, the 2001 to 2003 period in Hilton Creek where we have provided water, we are actually beginning to get smolts heading out of there, and it's been really nice to see. And again, in 2002 this is the third driest year on record, and it kind of illustrates at least how some of these downstream migrants are keying on the flow events to trigger the smoltification when they start heading downstream to the ocean.

For those of you that hadn't really seen a smolt or to distinguish between them, this is what a typical rainbow trout looks like. You can see the parr marks. There is a red lateral line that generally is really colorful as we expect on rainbow trout. Once they start

to smoltify, it's like night and day. They will turn almost completely sober. Their scales get really deciduous. You can literally run your thumbnail across them and they will come off. The tail, the caudal fin, gets a very dark margin on it. They are pretty evident to see.

As I mentioned earlier, we're conducting our redd surveys on a biweekly basis. This is to help us determine when the fish are moving in and if we are missing any during our migrant trapping. They are conducted in the main stem and all the tributaries, Hilton, Quiota and Nojoqui, Salispuedes and El Jaro Creeks. They are used to determine spawning locations. We have seen areas where they regularly return to, and we also use these sites where we have spotted redds and documented them to evaluate later during our snorkel surveys.

Next slide, please.

This is a graph or a table showing where we have seen redds within the main stem and the tributaries. Anything less than ten or so, I label it present. Anything more than that, I label as many. You can see there is a lot of variation over the years. There is some difficulties going through there and conducting the surveys, particularly during the high winter flow events when we have a lot of turbid conditions and high flow. It

is difficult to see. But, again, we use our snorkel surveys to go through. Once we see evidence of young of the year, we know some of the -- there's been some spawning.

Next slide.

Our snorkel surveys are conducted June, August and October. And as I just mentioned, our June surveys are used to determine and evaluate the success of the winter spawning, and also allows us to go through and see those areas that we have missed. We have seen them in both main stem and tributaries just by evidence of young of the year. We conduct them in August and October to evaluate the success of the summer rearing.

This is a slide of Salsipuedes Creek where we have been conducting measurement from '95 to 2001. Unfortunately, after 2001 we were not allowed back in there, but we are still working with some of the landowners to gain access. You can see the high variability and what we have seen throughout the course of the time.

And this is a slide of Hilton Creek since the supplemental watering has been conducted, and you will note we have had roughly between 500 and almost a thousand young of the year produced every year in the creek. And another interesting thing to note about this graph is you

will note the difference between the blue line and red line. As time goes on you will see one shrinking and the other growing, and it is an effect of the small fish growing into the next size class range, which shows we are providing very good conditions for these fish, generally very robust condition and plenty of food available. It's been a really good project.

These next few slides will talk about some of the projects that we have completed in the Salsipuedes and also in Hilton Creeks. This is a fish passage project that some of you had seen during our tour. It was a concrete apron that -- many concrete aprons in road crossings. At the downstream edge you will get these sort of phenomenon that happen. The purpose was to construct essentially a smaller or conveyance channel for the fish to get up through in low flows.

The important thing for at least the Southern California watershed is that the storm events that come through are very flashy; they are not very predictable in the runoff events, and little minor -- won't say minor -- impediments such as this really creates a delay. So if the fish are coming in from the ocean and they reach this, if the flows have dropped down to the point where they can't get through, they have to wait until the next storm event, which could be weeks or up to a month or even

longer. So it is, without repairing those things, it was really delaying the fish ability to get up into their spawning habitats, and also leaving quick enough to make it back out in subsequent rain events.

This next series of slides just shows the work in progress at the time, and this is what the completed project looks like. We had some pretty good successes. We have documented migration both in 2002 and 2003 during flows that would not have been able to pass these fish at this time. Last year we had one of the largest fish that we have collected during the course of the studies, a 27-inch female that made it up through there at a flow of about six cfs. That fish would have been stranded in that lower pool right there until the next flow would have happened.

The other project that we have completed is the Hilton Creek watering system, was completed in the fall of '99, and we've been providing water since about 2000. The goals of it is to provide excellent summer rearing condition for steelhead by releasing some pool water from the lake into Hilton Creek. We have been providing passage and spawning opportunities for the fish in the creek, and they have responded to that very well. What other things that the water has done also is that it has enhanced habitat within the existing channel. I have some

slides that show the amazing riparian growth that we have seen through there. It is crazy how much has gone on in the last few years. It also provides a stable rearing habitat in a fluctuating environment.

A lot of these rooted riparians, trees and such, are just holding in in the substrate and creating a lot of good rearing habitat in a vertical production.

The series of slides is showing construction of Hilton Creek pipeline. This is another one to Stilling Basin.

This short series of slides shows some of the riparian growth we have had through there. This is preproject, 1998. High storm events that were going through the agency. You can see what it has done to the channel, bank failures and everything. This was taken a year later. You can notice the beginnings of riparian growth really taking off. And this is last year. And it's even right now, this year, it's even taller and bigger and more impressive.

As I mentioned earlier, we've documented some successful spawning and rearing within the creek. By each June you are seeing between roughly 500 and a thousand young of the year. In the slide there is a -- in 2002 we noted that some of the predatory birds had found our pool habitats, and they were going in and eating the fish in

there pretty hard. We have since -- the riparian vegetation has grown up quite a bit which has eliminated that and we have thrown in some bird exclusion devices which is essentially tape instream across some of those pools that doesn't allow the birds to get in there as easily.

It's created a beneficial stream side vegetation as shown in other slides, increased food availability for the steelhead. And as the riparian vegetation gets larger and larger, it is going to help keep those water temperatures nice.

We have a series of future projects as I had shown in my first slide. We have Quiota Creek Fish Passage Project. All the road crossings we are looking to address. There is another one that we are starting this year that is directly upstream of Salsipuedes Creek at Jalama Bridge, which is going to be almost identical in appearance to the one which is connected just downstream to the Highway 1 Bridge. Also sediment control projects with the landowners or demonstration projects with that. And we are also looking into addressing some of the passage barriers and impediments in Hilton Creek at Cascade Chute and also at the 154 corridor.

This is some slides showing some of these projects that we are looking to address. Salsipuedes Creek and

Jalama. And this is one of the demonstration projects that I mentioned that we talked with landowners on Saturday. We are going to be laying a series of rocks and enhancing the floodplain by eliminating the scour that is directed into that bank by some of the high flow events that pass through the system. And here is the Hilton Creek cascade Chute project. We are looking to address some of those within the next year or so and get those on board also with enough habitat in some of the upper areas.

And here is one further up on the culvert of the Highway 154 Bridge. That is the CalTrans facility; we are looking to get that on line eventually, also.

That concludes my testimony.

MR. WILKINSON: Thank you, Mr. Engblom.

Mr. Silva, Mr. Carlton, we have one more witness. It's a Bureau witness. I think Mr. Jackson would not take more than about five minutes. So if we can put Mr. Jackson on now that would complete the direct.

MR. PALMER: Mr. Jackson, just confirm that your summary is again based on your testimony that is DOI Exhibit 5; is that correct?

MR. JACKSON: Yes, it is.

MR. PALMER: Go ahead, summarize your testimony for this panel.

MR. JACKSON: Before I get started, I would

like to say that I reserve my remaining 13.8 minutes for this panel. I hope not to use that much.

Reclamation's project description pursuant to its biological assessment and consultation process and the Biological Opinion included various beneficial projects identified in the Fish Management Plan, such as barrier avoidables in strategic locations at Hilton Creek watering system. The quality of which, Mr. Silva, Ms. Differding, Mr. Mona and Mr. Fecko, had a chance to observe during the September 8 Board sponsored site visit. I vividly recall even one rattlesnake was very appreciative of the habitat improvements.

The Secretary's transmittal to the Commission on Public Lands, previously identified as Exhibit DOI-1B, included a number of recommendations related to fish. The Division of Fish and Game and U.S. Fish & Wildlife Service initially saw a year-round minimum flow of 15 cfs for related -- for steelhead and hatchery development purposes. However, these aspects were not included in the project authorization as this rate of flow would require about 33 percent or 10,000 acre-feet of the annual yield, which would have resulted in the project not being feasible and subsequently not being authorized.

The transmittal also included recommendations on the project from the state engineer with regard to fish

releases. Recommendation No. 5 can be found on Page 18 of the Secretary's transmittal and states in pertinent part:

> Yearly release in such for storage in the interest of fish life should be on a temporary basis only and one which would result in no impairment of the water supply for higher uses, namely municipal, domestic and irrigation. (Reading)

Given this historical backdrop, we view our approach as progressive and concurrently view NMFS nonjeopardy Biological Opinion as embracing Reclamation's project description as indicated by the BO's 15 reasonable and prudent measures and companion implementing terms and conditions, none of which unduly compromise the authorized purposes of the project. Perhaps even more significant is that NMFS' remarks, located in the impacts on ESU survival and potential for recovery section for the Biological Opinion on Page 67 say, and I quote:

> Therefore, the proposal project is likely to appreciably increase the likelihood of survival and recovery of the ESU by increasing its numbers and distribution. (Reading)

The last sentence goes on to say that monitoring will be needed to confirm this expected population trend.

In this regard our observation is to date give us optimism for a promising future.

We are also working on clearing the way for other projects as well, such as a three-foot surcharge and resulting 9,200 acre-foot of additional storage proposed in our biological assessment for steelhead purposes and duly noted in NMFS Biological Opinion.

Looking again to the Secretary's transmittal, I would bring your attention to the thoughts of the Secretary of the Army on Pages VII and VIII which say in pertinent part:

> The desirability of ultimately developing the Cachuma Reservoir to its maximum, feasible physical limit in order to ensure the greatest practical beneficial use of the water resources of the Santa Ynez River Basin. It is believed, therefore, that careful consideration should be given in the design of the structure to the possibility of raising the dam in the future to its maximum feasible height. (Reading)

The Secretary's transmittal also includes conclusions and recommendations of the National Park Service, which on Page 43, Item I, states:

Recreational development should not be undertaken below elevation 773, which is five feet above the maximum water level. (Reading)

Furthermore, recreation is an incidental use of the project as indicated in both the authorization and in Reclamation's water rights supplement Application No. 11331 at Paragraph 3 and would also point out that our permit allows us to store up to 275,000 acre-feet. Reclamation recognizes that in addition to the positive benefits of a larger lake surface, that there would also be adverse impacts to the existing recreational facilities. Reclamation and Member Units are working with the Santa Barbara County Parks to address the issue and even have contributed funds to that effort.

I would like to compliment and would like to continue to foster our relationship with the Parks service, including Ms. Coleen Lund and Jeff Stone and looking forward to building upon a relationship with Ms. Terri Maus-Nisich. Reclamation contends that these and other factors support our belief that public trust resources are protected through the implementation of the Fish Management Plan and Biological Opinion.

As to Board's Draft EIR, Reclamation recommends that the Board elect Alternative 3C as a preferred alternative

because this alternative is most consistent with the authorized purposes of the project, the Fish Management Plan and the Biological Opinion and the Settlement Agreement.

In summary, for the foregoing reasons as hopefully displayed in our testimony as well as the testimony of other panel witnesses, there are a number of natural, physical and contractual aspect, and constraints that challenge Reclamation's prudent operation of the Cachuma Project on a daily basis. Reclamation requests the Board approve our consolidated place of use petition, adopt the Settlement Agreement for downstream water rights on the Santa Ynez River below Bradbury Dam and approve the proposed modifications to terms and conditions of the Permits 11308 and 11310, DOI Exhibit 10 while recognizing the benefits of the measures outlined in the Biological Opinion as appropriate to address public trust resource issues and for the protection of downstream water rights.

Thank you.

MR. WILKINSON: Mr. Jackson, one clarifying question. Is it the case or is it your understanding that the entirety of the 9,200 acre-feet of water that would be made available in three-foot surcharges included within Alternative 3C, the entirety of that would be used for fishery purposes?

MR. JACKSON: That is my understanding.

MR. WILKINSON: Thank you.

H.O. SILVA: I think we are done. Great timing. Why don't we break for lunch till about 1:30 by that clock, and then we can get started on the cross.

(Luncheon break taken.)

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AFTERNOON SESSION

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H.O. SILVA: If we could reconvene. We will begin cross-examination now of Panel V.

City of Lompoc?

MR. MOONEY: No.

MR. CONANT: I have for Santa Ynez.

H.O. SILVA: That's fine. I'm sorry, I figured you were with the panel.

MR. CONANT: Not on this panel.

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CROSS-EXAMINATION OF PANEL V

BY SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

BY MR. CONANT

MR. CONANT: Thank you. Just a clarifying question for Mr. Jackson.

I think at the very end of the last presentation Mr. Jackson may have said that Reclamation was seeking to have the Board approve the Settlement Agreement in its entirety. I assume what you meant was that the Board approve the changes to the orders which were displayed by Ms. Struebing yesterday and are reflected in Exhibit C of the Settlement Agreement; is that correct?

MR. JACKSON: That is correct.

MR. CONANT: Thank you.

I had a few questions I wanted to ask regarding the Adaptive Management Committee which was referred to by several of the panelists. I think these questions will be directed primarily to Mr. Young and Ms. Baldridge and Dr. Hansen. And in order to ask these questions I need to introduce an exhibit which is not in evidence yet. This would be SYRWCD Exhibit No. 4.

Any of you who would care to respond to these questions. This purports to be -- entitled Adaptive Management Committee Roles and Responsibilities. Bears a date down in the left-hand corner of April 22, 2002.

My understanding from your prior testimony is that the Adaptive Management Committee was established under the Biological Opinion and also under the Fish Management Plan; is that correct?

MR. YOUNG: Yes.

MR. CONANT: Turning to Exhibit No. 4, the roles and responsibilities document, has this document been approved by the AMC?

MR. YOUNG: Yes.

MR. CONANT: Could you elaborate a little bit on the interaction between the Consensus Committee and NOAA, which I think is mentioned in the last paragraph of Page 1? Or asked more specifically when does the Consensus Committee and NOAA get involved in approving an

action of the Adaptive Management Committee?

MR. YOUNG: NOAA Fisheries is involved as a member of the Adaptive Management Committee. The Consensus Committee is an oversight committee to the Adaptive Management Committee.

MS. BALDRIDGE: Let me just add to that. We have a consolidated Adaptive Management Committee under the Fish Management Plan that grew out of 2001 MOU. That committee includes a couple of members that aren't named on the Adaptive Management Committee under the Biological Opinion. NOAA Fisheries' participation is at staff level, and if we make decisions that would require NOAA Fisheries approval as an agency, that would then go back to Long Beach for consideration from the Bureau to NOAA Fisheries under the Biological Opinion.

MR. CONANT: Thank you.

About how many -- doesn't have to be a precise number, but about how many times has the AMC met since it was formed?

MR. YOUNG: Since the formation in the Biological Opinion?

MR. CONANT: Yes.

MR. YOUNG: Perhaps six to eight times.

MR. CONANT: This could be by phone or in person, I assume?

MR. YOUNG: Yes.

MR. CONANT: Are there any committees or subcommittees that have been established under the AMC?

MR. YOUNG: Yes.

MR. CONANT: Have they had meetings and, if so, approximately how many?

MR. YOUNG: The hydro group or subcommittee of the AMC has met approximately 14 to 16 times.

MR. CONANT: Turning to Page 3 of this document, which I assume is part of the roles and responsibilities, a document that you've indicated has been approved by AMC. As I interpret this chart, it indicates a particular action to be taken in terms of preparing some document or carrying out some study or performing to management activity. Then there is a time frame for its implementation, frequency, a column for priority and then reasoning and then there is citation that appears to be the Biological Opinion or the Fish Management Plan and then there is an item called oversight.

Is that -- what is meant by oversight?

MR. YOUNG: Can I refer to a figure?

MR. CONANT: Sure.

MR. YOUNG: There is a Figure 1 in your exhibit.

MR. CONANT: It would be the page right before Page 2 of 5?

MR. YOUNG: Yes. In the upper right-hand corner there is a box labeled regulatory oversight, and it identifies different agencies that have some role to play regarding regulatory oversight for projects under the adaptive -- that would be implemented under the Fish Management Plan and the Biological Opinion.

MR. CONANT: Turning back to this chart we were just referring to, turn to Page 4, and at the page of Page 4, the last item listed is periodic review information on providing passage above Bradbury Dam. And then under column labeled priority, it indicates that that is a low priority.

Could one or several of you advise us why that particular item is listed as a low priority item?

MR. YOUNG: Yes. It was ranked low priority because in the Biological Opinion it was identified as a conservation recommendation. And in the Fish Management Plan NOAA Fisheries asked that truck and trap be excluded from the Fish Management Plan during its early formation of the plan.

MS. BALDRIDGE: Just to add to that. When we were looking at priorities in the AMC discussions we wanted to put things that we needed to accomplish in the

near term under the Biological Opinion had the highest priority. Then we had some additional meeting level priorities that we were establishing for implementing action that we thought would have a direct benefit for fish.

The upper basin studies were ongoing as studies. So the actions weren't implemented. The studies were going forward for that purpose. As David indicated, it was lower priority in our process because originally NOAA Fisheries was uncertain whether it would fit in with their policies to do that.

DR. HANSEN: I agree with Ms. Baldridge. However, it is also a low priority from the standpoint that we are in the process of conducting some additional studies in the upper part of the watershed. There is additional information that is being developed on various kind of passage opportunities, trap and truck and other types of opportunities elsewhere across the Pacific northwest and in other investigations.

Until some of that information really becomes available, it's difficult to accelerate the priority of a particular issue, such as the evaluation of information on passage upstream of the dam. So in part we are waiting on information before we make that further determination.

MR. CONANT: That is all I have.

Thank you.

H.O. SILVA: Thank you.

City of Lompoc.

MR. MOONEY: No.

MS. KRAUS: I did not hear what this was labeled as in terms of a number.

MR. CONANT: It would be SYRWCD Exhibit 4.

MR. BRANCH: I didn't get that exhibit.

H.O. SILVA: Santa Barbara County.

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CROSS-EXAMINATION OF PANEL V

BY COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: Afternoon. I would like to first address some questions to Dr. Gray to clarify some of his written testimony and reconcile that with the oral testimony today.

First, Dr. Gray, in assessing the effects of the proposed three-foot surcharge, I would like to understand you have identified the three-foot still water or static rise in elevation as the, I quote, direct inundation zone?

DR. GRAY: That's correct.

MR. SELTZER: On top of that you identified an additional three-foot zone subject to waves, storms and flooding as a wave action zone; is that a correct

characterization?

DR. GRAY: That's correct.

MR. SELTZER: Have you reviewed the Cachuma Lake surcharge analysis prepared by Flowers & Associates in the December 2000 as part of the DEIR or referenced in the DEIR, Exhibit 7 to the County submittal?

DR. GRAY: Yes, I have.

MR. SELTZER: Have you discussed that study with Eric Covell, its author?

DR. GRAY: In passing, not in great detail.

MR. SELTZER: Do you agree with Mr. Covell's analysis of the three-foot elevation he also estimated as the wave action zone in that report?

DR. GRAY: I agree that there is a three-foot wave action zone based on both the analysis in that report and also discussions with concessionaires and county park representatives that observed wave action during storm events.

MR. SELTZER: Based on your experience in environmental analysis and preliminary design as both a project manager and an environmental consultant, is it correct to state that in planning to protect critical park facilities from the three-foot surcharge option it would be prudent to design those critical facilities to avoid both the direct inundation zone and the wave action zone?

DR. GRAY: Speaking as a planner, I would say that would be prudent. Not speaking as an engineer.

MR. SELTZER: In addition to the three-foot still water rise in lake elevation I think as Mr. Buelna testified yesterday and I learned, dam operations can be managed to allow the lake to rise another two feet during storm flows to reduce flooding, to reduce downstream impact; isn't that correct?

DR. GRAY: I am not sure I'm qualified to answer that question.

MR. SELTZER: If that was the case, if there was a storm surge that the lake could accommodate and the operations could be modified so that yet another two feet could be accommodated behind the dam, would it be prudent for responsible agencies, whoever they might be, to consider the lake elevation of 758 as a design elevation for critical facilities?

DR. GRAY: As a general rule, I would expect that the design engineer to look at those constraints and those water elevations that are likely to occur and then to make a decision based on the risk that they are willing to take with those water elevations. It's not a standard engineering criteria because lake level can vary considerably probably due to both dam operations and natural events.

MR. SELTZER: On Page 11 of your written testimony you state that, and I will quote: Two sewer lift stations will be relocated in 2004 using a combination of grant funds from Reclamation and Proposition 12 and county funds. I think you also testified to that orally today.

Is that correct?

DR. GRAY: That is my understanding.

MR. SELTZER: Isn't that a predicted fate, not a certainty?

DR. GRAY: That is a date that I understood from county park staff is a reasonable projection of when those projects would be completed.

MR. SELTZER: In order to reasonably project a completion date, isn't it necessary to consider the time needed to first obtain a complete and certified environmental impact report for the project?

DR. GRAY: That is a question that County Parks would have to answer. They would have some obligation under CEQA to conduct an environmental review. It could be accomplished in several different ways. Some may not require the production of an environmental impact report. So I can't speculate on what County Parks would want to do to meet that obligation.

MR. SELTZER: As the person responsible for

assisting in the preparation of the COMB Bureau Fish Management Plan EIS/EIR, based on your opinion, in order to relocate sewer lift stations would an environmental document in the nature of an environmental impact report under California law be required?

MR. WILKINSON: Objection. Asked and answered.

H.O. SILVA: He already answered the question.

MR. SELTZER: I am not sure he did. He gave me his opinion based on his expertise.

MR. WILKINS: What else would it be?

MR. SELTZER: The question was would an EIR. It's a different question. Would an EIR be required for a sewer lift station?

H.O. SILVA: Pretty close.

MR. WILKINSON: Asked and answered. Objection.

H.O. SILVA: Well, I think it is fairly close.

DR. GRAY: I can answer. In my opinion, a relocation of sewer lift station would not normally require an environmental impact report because it is a very small facility and at least the main system is in paved areas without habitat or archeological sensitivity. So a negative declaration, possibly CEQA exemption might be appropriate.

MR. SELTZER: Would your answer be different if it was part of -- a component of a larger project?

DR. GRAY: If the relocation of sewer lift station were included in a larger environmental impact report, the CEQA obligations that the county has could be accommodated through that environmental report.

MR. SELTZER: In order to predict the project completion date, isn't it also necessary to basically consider the project's need to obtain funding for design and construction of the particular project?

DR. GRAY: Yes.

MR. SELTZER: Wouldn't one also consider the time necessary to obtain permits from responsible lead agencies for that project?

DR. GRAY: Yes.

MR. SELTZER: In the particular case of the county park facilities at Cachuma Park, wouldn't one also take into consideration the time necessary to obtain a land tenure or lease arrangement with the landowner before one would invest the type of money necessary to relocate those facilities?

DR. GRAY: I can't express an opinion about county policy on that matter.

MR. SELTZER: Do you know -- Strike that.

In Table 3 of your testimony, attached to your

written testimony, it states that the sewer lift station No. 2, that with respect to that lift station, construction funds from Proposition 12 are available. I see you are looking at that.

Is that correct?

DR. GRAY: That is my understanding.

MR. SELTZER: Isn't it true that Proposition 12 requires grantees of up to and including $100,000 to have land tenure for at least ten years?

DR. GRAY: I don't have direct knowledge of that.

MR. SELTZER: Do you know whether grants exceeding a hundred thousand dollars under Prop 12 require land tenure or lease arrangement of at least 20 years?

DR. GRAY: I don't have knowledge of that.

MR. SELTZER: In addition to funding, isn't the completion of the sewer lift station dependent on completion of the environmental review by COMB and the Bureau for its Fish Management Plan EIS/EIR?

DR. GRAY: I don't believe it is. I believe County Parks could proceed independently with their own CEQA environmental review.

MR. SELTZER: It would be dependent on, is it not true, permits from the Regional Water Quality Control Board?

DR. GRAY: Yes.

MR. SELTZER: And the County's Department of Health Services?

DR. GRAY: Yes.

MR. SELTZER: Have you reviewed Coleen Lund's written testimony, County Exhibit 4, regarding the construction timeline necessary for the sewer lift station relocation?

DR. GRAY: I have briefly reviewed her testimony.

MR. SELTZER: Do you think that her estimate of 15 to 18 months to complete that work once an environmental document is complete is a reasonable schedule?

DR. GRAY: I believe it's a reasonable estimate, my knowledge of the county process and what's required.

MR. SELTZER: On Page 10 of your written testimony you identified the sewer lift stations Nos. 2 and 3 among the facilities that would be inundated by a three-foot surcharge with no -- excuse me, that would not be inundated by a three-foot surcharge with no wave action; is that correct?

DR. GRAY: Yes. I think for the record we should clarify that these facilities are located at 758

and 759. The concern is the surface water getting within 50 feet of the lift stations. So it is not an inundation impact. It is a concern about the proximity of surface water.

MR. SELTZER: You anticipated my question. To clarify your written testimony I think you included these lift stations among the other facilities, the relocation of which depends on the amount of risk the County's willing to accept.

Isn't it true, as you just indicated, relocation is not solely based on risk, but it is also a permitting requirement under the Uniform Plumbing Code and the requirements of the permitting agency that there be a 50-foot setback?

DR. GRAY: That is true for the lift stations.

MR. SELTZER: In slide 24 of your presentation today you identified the boat launch ramp facility as a key noncritical facility; is that correct?

DR. GRAY: That's correct.

MR. SELTZER: In your written submittals which was attached to CCRB's submittal to the Board on October 15th, wasn't Slide 24 in a different form, have different text?

DR. GRAY: In the -- you're talking about the Power Point presentation?

MR. SELTZER: The Power Point presentation, Exhibit No. 245, Slide 24.

DR. GRAY: As I think I indicated earlier, there was some confusion about what form of this presentation was actually submitted to the Board. So I don't have that copy of what was submitted to the Board with me. If you have that slide, you can show it to me.

MR. SELTZER: Fortunately, I only have one with me. If you would put on the existing Slide 24 as submitted. It's Exhibit 245.

While getting that slide up, can I ask you the boat launch ramp, that is elevation 750, isn't it?

DR. GRAY: The top of the ramp is at 750.

MR. SELTZER: I am not sure we got our answer on record. Having reviewed the Slide 24 that I showed you, does that refresh your recollection whether your original submittal with the written testimony, the Slide 24 in Exhibit 245 is different than the one you showed today?

DR. GRAY: Yes, it is.

MR. SELTZER: Originally you identified the boat launch ramp as a critical facility affected with wave action at elevation 7450, and on the chart today it was identified as a key noncritical facility affected by three-foot surcharge.

Could you explain the difference in your characterization?

DR. GRAY: In the original submittal I was using the term "critical" in a different form than I was using in my presentation this morning. The original use of the word "critical" was intended to impart a critical facility relative to the operation of the park as well as public health and safety.

In my presentation this morning I made that distinction that when I use the word "critical," I am referring to public health and safety, and any other facility out there would be a noncritical facility that is there for visitors' services and entities and not critical for public health and safety, and that is the distinction.

MR. SELTZER: But when you call it a key noncritical facility, it is your testimony that it is critical to the operation of the park?

DR. GRAY: That's true.

MR. SELTZER: In terms of the boat launch ramp, you reclassified that as a key critical nonfacility for operation of the park. That facility is in the direct inundation zone for a three-foot surcharge, correct?

DR. GRAY: Correct.

MR. SELTZER: Do most of the people who visit Lake Cachuma Park go to the lake, go there for boating and

fishing on the lake?

DR. GRAY: More than half the visitors are there for boating activities.

MR. SELTZER: Are there any other locations to access the lake other than the boat launch ramp for those recreational opportunities?

DR. GRAY: There are three boat launches in that same vicinity that are used during lake levels and that is the only authorized public access for boats.

MR. SELTZER: So if the boat launch is inundated by a three-foot surcharge, there is no other access to boating and fishing on the lake; is that correct?

DR. GRAY: Not that is currently authorized by County Parks.

MR. SELTZER: Which would be true even if a 1.8-foot surcharge was authorized; isn't that correct?

DR. GRAY: The 1.8-foot surcharge would inundate, render the boat launch inoperable.

MR. SELTZER: And if the surcharge occurs, it is your testimony that it would occur on the average of every three years and persist for four to five months; is that correct?

DR. GRAY: That's correct.

MR. SELTZER: And isn't it true that that

surcharge would generally occur between April and July, maybe March and August?

DR. GRAY: That is correct.

MR. SELTZER: Aren't these the months when the park receives its highest boating use and revenue?

DR. GRAY: It is my understanding that the highest revenues are in the month of August, later in the summer.

MR. SELTZER: I assume we will address that later.

Are you aware the County is requesting that the local agencies, the state agencies and federal agencies cooperate together to provide a phased surcharge that would allow some time for the County to relocate the boat launch ramp and then additional time to relocate its critical park facilities?

DR. GRAY: Yes, I am.

MR. SELTZER: And in doing so, if the County was willing to accept, and it is, a 1.8-foot surcharge upon the relocation of the boat launch ramp, wouldn't the water treatment plant still be at risk since it would be in the wave action zone?

DR. GRAY: Well, depends on what amount of risk you are willing to take. Depending on that viewpoint, you may not believe it is at risk.

MR. SELTZER: With respect to the --

MR. WILKINSON: I would like him to be able to finish his answer, Mr. Silva.

MR. SELTZER: Did I interrupt you?

DR. GRAY: No. Fine, thanks.

MR. SELTZER: I didn't think I did.

With respect to the water treatment plant specifically, though, because of the electrical systems that are in that facility, wouldn't any inundation of a certain period of time, short period of time, place that facility at risk, damage it, cause a dangerous condition?

DR. GRAY: If water were to reach the floor elevation, that would be a dangerous situation.

MR. SELTZER: Just turning briefly to the oaks mitigation issues. I just want to try to understand that the mitigation program you have described proposes a three-to-one ratio to offset expected mortality for replantings; is that correct?

DR. GRAY: That is not entirely correct. We are anticipating a 33 percent mortality in the county park setting. So we would initiate our planting with that ratio in mind, that that ratio may change if we have higher mortality, depending on the outcome of the first couple of years.

MR. SELTZER: Did you consider the County's

oak tree protection and regeneration program standards in developing the three-to-one ratio and two-to-one planting goal?

DR. GRAY: I am familiar with them, and I did consider them.

MR. SELTZER: The mitigation program calls for planting half of the trees immediately and the final planting of observed lost trees after a ten-year monitoring period; is that correct?

DR. GRAY: That's correct.

MR. SELTZER: Is there any concern on your part that the ten-year period is adequate when I believe your testimony is that the loss of trees in the wave action zone will occur a longer period of time, probably 20 years or more?

DR. GRAY: The intention was to watch the loss of trees over a ten-year period, and at the end of ten years make your final planting. At some point you need to stop planting. You need to nurture and take care of trees. So we are suggesting at ten years do the final planting, and at that point you monitor and maintain and nurture the trees for another ten years until you have a 20-year period. At that point you would have fulfilled your obligation to replace the trees two-to-one.

MR. SELTZER: Do you believe -- isn't it true

that it takes about 30 years for coast live oaks to mature to a point where they produce acorns?

DR. GRAY: No. I believe there are some trees that mature sooner than 30 years.

MR. SELTZER: I'm not going to quibble with you.

I would like to direct my cross-examination to Mr. Jackson for a moment.

I believe -- I couldn't hear it clearly, but I believe you testified at the end of the panel discussion that the 1948 report and findings to Congress recommending authorization of the Cachuma Project contains a recommendation that park facilities be at an elevation of 773 feet. Did I hear you correctly?

MR. JACKSON: The specific quote was the National Parks -- in that report you referenced the National Park Service on Page 43 at Item I states: Recreational development should not be undertaken below elevation 773, which is five foot above maximum water level.

MR. SELTZER: Five foot below maximum water level?

MR. JACKSON: Five feet above, 773.

MR. SELTZER: Isn't the current crest of Bradbury Dam at 763 feet?

MR. JACKSON: I'll take your word on that. I forget what the number is.

MR. SELTZER: If that is the crest, then the maximum elevation of the lake would be somewhat below that, correct?

MR. JACKSON: Yes.

MR. SELTZER: So the 773 elevation is really not a relevant figure at this time for the location of park facilities because the lake never reached that elevation; isn't that correct?

MR. JACKSON: I wouldn't say it is not relevant. If the park facilities were there now, we wouldn't have the issue of inundation.

MR. SELTZER: Was the requirement to be at elevation 773 a requirement of the project's authorization?

MR. JACKSON: No. That was a recommendation of the National Park Service.

MR. SELTZER: Was it the basis of the siting of the park facilities?

MR. JACKSON: I have no idea what basis the park used 50 years ago.

MR. SELTZER: Are you aware that the National Park Service performed a study recommending that the boat launching facility be at 750-foot elevation before those

facilities were constructed?

MR. JACKSON: No, I am not aware of that.

MR. SELTZER: Under the lease agreement with the County, effective since 1958, doesn't the County have authority to construct, maintain and operate the park facilities that are located there?

MR. JACKSON: Yes.

MR. SELTZER: And didn't the Bureau have an obligation to reject any county plan for park facilities under the lease agreement before they were constructed?

MR. JACKSON: I would assume yes.

MR. SELTZER: Just going to conclude. Yesterday I asked you a question, and I am going to ask if it is still your intent to renegotiate a lease renewal with the County that provides for park facilities?

MR. JACKSON: Yes, that is our intention.

MR. SELTZER: We would assume that those facilities will remain at an elevation below 773 feet; isn't that correct?

MR. JACKSON: I don't know the answer to that.

MR. SELTZER: That is my cross-examination.

H.O. SILVA: Thank you.

Fish and Game.

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CROSS-EXAMINATION OF PANEL V

BY DEPARTMENT OF FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Good afternoon. I would like to start with Mr. Engblom.

You have some graphs on Table 5 and on Page 20 of your testimony that depict levels of capture of upstream and downstream migrant steelhead at Salsipuedes and Hilton Creeks; is that correct?

MR. ENGBLOM: Page 5, Page 20, yes, that is correct.

MR. BRANCH: Would I be correct in saying that these graphs show a significant variation in capture numbers between years?

MR. ENGBLOM: Yes, that is correct.

MR. BRANCH: Would I also be correct in saying that these trapping results are adjusted to account for variation and period of time that the traps were actually operated during migration season of each year?

I can ask that again.

Would I be correct in saying that the trapping results in these graphs are adjusted to account for variation and period of time that the traps were actually operated during migration season of each year?

MR. ENGBLOM: These are the numbers that we

captured each year.

MR. BRANCH: Would you perhaps get more accurate results from year to year if you depicted figures as capture per unit of time of trapping, might these be more consistent numbers instead of a dramatic variation?

MR. ENGBLOM: The period of time that our traps are in are particularly from January through the end of May. So I believe that the time frame is consistent.

MR. BRANCH: Thank you.

Good afternoon, Mr. Hansen. Would I be correct in saying there is a less than optimal riparian vegetation to Santa Ynez River below Highway 154 in terms of being a component of quality steelhead habitat?

DR. HANSEN: Yes. The vegetation downstream of Highway 154 is fairly far out on the banks and would be less than optimal.

MR. BRANCH: Might I be correct in saying that an increase in flows in that area below the 154 might have a positive effect on the quality of riparian vegetation as was the case in Hilton Creek when flows were increased?

DR. HANSEN: I really don't have the expertise regarding the riparian community. It does respond to variations in flow. Certainly an important factor, but the width of the channel and other factors in those reaches have a bearing on the biological value of that

riparian habitat within those reaches.

MR. BRANCH: Is it generally true that when you increase flow in a stream you might see a reaction in increase in riparian vegetation?

DR. HANSEN: It certainly responds. Increases in flow to a certain point do provide for better riparian vegetation as we have seen in Hilton Creek. As flows increase above a certain threshold, then you can actually start to see decreases in riparian vegetation as a result of scouring and other physical processes.

MR. BRANCH: In general, does additional riparian vegetation create cooler water temperatures in a stream if it overhangs the stream?

DR. HANSEN: Given all the various aspects in your question, it does. But it depends on the ability, depends on the height of the vegetation and depends on the width of the channel, depends on its ability to effectuate overhang on the channel and provide effective shading. Various among different types of vegetation species. But in general we like to see greater riparian vegetation as it provides for better shading, better cover, other biological processes.

MR. BRANCH: On Page 12 of your testimony you refer to thermal tolerance criteria. Parenthetically you say: Frequency of average daily temperatures greater than

20 degrees Celsius in frequency of maximum daily temperatures greater than 25 Celsius.

Is that correct?

DR. HANSEN: That is correct.

MR. BRANCH: How did you determine these criteria?

DR. HANSEN: We determined these through a couple different processes. One was we reviewed the information available from various laboratory studies that have been conducted for decades on the response of different life stages steelhead to temperature conditions. Growth, for example, under different diets. We also examined literature that was available on the acute thermal tolerance, of temperatures that resulted in mortality for species. We consulted with biologists knowledgeable regarding this issue throughout California. There has been extensive work done on this issue in the Sacramento River Basin, for example, on the American River, on the Mokolumne River. Elsewhere within the Central Valley system as well as coastal tributaries. And then we had some extensive debates internal to the Santa Ynez River Technical Advisory Committee.

And the reason for those debates is severalfold. One is that much of the literature that we have available comes from studies conducted on bigger river systems, more

northerly climates. We were concerned about a clinal gradient in terms of tolerance of the species, meaning that species that evolve further in the south where they may be exposed to more elevated seasonal temperatures may have evolved a greater thermal tolerance than would the individuals that were tested in some of these experiments.

And the other aspect is that the response of a species to temperatures is an extremely complex set of interactions, biological interactions including prey availability, how frequently the temperatures fluctuate, how long the duration of temperature exposure is, the quality of habitat. So it is extremely difficult, as I mentioned in my testimony, to come up with a set criteria that says 20 degrees average daily is it. We used it really as a guideline.

MR. BRANCH: Let me ask you a follow-up. Is it possible that ideal thermal tolerance for steelhead may be below this range that you set out?

DR. HANSEN: Oh, I wouldn't be at all surprised that it is below this range. Our concern on the Santa Ynez was that it may be --

MR. BRANCH: That is what I asked.

MR. WILKINSON: I would like to have the witness be able to finish his answer, if that is all right, Mr. Silva.

H.O. SILVA: Well, I think it is up also to counsel. If he feels he's answered the question.

MR. BRANCH: That was the question I was going for. If he keeps going, it is going to be a long narrative, and I think we are short on time.

H.O. SILVA: That is fine. I agree. If you feel he answered the question, I am fine.

MR. BRANCH: Thank you.

Is there scientific evidence that southern steelhead have a greater temperature tolerance than northern steelhead? You may have already answered this.

DR. HANSEN: Only incidental information. We find southern steelhead in areas where we would predict based on more northerly experiments that those would be stressful or unsuitable conditions, but we don't see that on a real frequent basis. The information, I think, is inconclusive.

MR. BRANCH: On Page 12 of your testimony you state that, quote: Temperatures are within acceptable ranges at all locations downstream of Bradbury Dam during the late fall, winter and spring.

Correct?

DR. HANSEN: Correct.

MR. BRANCH: Is that statement based on a thermal criteria we have been discussing?

DR. HANSEN: It is based on those thermal criteria in combination with the results of our temperature monitoring.

MR. BRANCH: In your opinion, with the implementation of the Fish Management Plan actions would habitat within the lower Santa Ynez River drainage be sufficiently connected to provide reliable, contiguous rearing habitat for juvenile steelhead?

I can read that again.

DR. HANSEN: If you would, please.

MR. BRANCH: In your opinion, would the implementation of the Fish Management Plan actions, would habitat within the Lower Santa Ynez be sufficiently connected to provide reliable, contiguous rearing habitat for juvenile steelhead?

DR. HANSEN: Let me answer it in two parts. One is --

MR. BRANCH: I was afraid you would say that.

DR. HANSEN: I can go for three if you want.

MR. BRANCH: Two is okay.

H.O. SILVA: Maybe just ask again, no question. Just kidding.

DR. HANSEN: In terms of the main stem we've identified a primary management reach extending from Bradbury Dam down to Highway 154. There are years in

which there are isolated pools that occur in the Alisal and Refugio reaches downstream of Highway 154 that are not interconnected during the juvenile rearing period. There are also areas within the tributaries, Salsipuedes Creek for example, where there is extensive juvenile rearing. But during that rearing period there is not flow within the main stem Santa Ynez River that would allow connections.

The primary focus of much of our work, though, was to provide those connections during the periods when adults were migrating upstream and juveniles were migrating downstream so that we could have the interconnection and allow for the anadromy of those fish to move from main stem of the tributaries to the ocean.

MR. BRANCH: Thank you.

On Page 6 of your testimony you state, quote: The overall goal of these studies has been to identify reasonable flow and nonflow measures that will improve habitat conditions for steelhead migration, spawning and juvenile rearing in the Santa Ynez River, and as tributaries within the context over all management objectives in competing demands on the Santa Ynez River.

Is that correct?

DR. HANSEN: That's correct.

MR. BRANCH: Are you aware that the balancing

process to determine reasonable use under Article X. Section 2 of the California Constitution is exclusively within the jurisdiction of the State Water Resources Control Board?

MR. WILKINSON: I think that calls for a legal conclusion.

MR. BRANCH: I am just asking if he is aware. I am not saying he's making the determination.

H.O. SILVA: I vote the same. If you feel you can't answer the question, say so. If you want --

DR. HANSEN: I am generally aware, but I have limited knowledge of that.

MR. BRANCH: On Page 7 of your testimony you state that the cooperative scientific studies, which began in 1993 and are continuing, have been used to develop a program of recommended actions which will meet the overall objectives of the Santa Ynez River in terms of fishery and aquatic resources for presentation to the State Water Resources Control Board.

Is that correct?

DR. HANSEN: That is correct.

MR. BRANCH: I wanted to clarify the statement a little bit. Are you saying that past scientific studies that have already been carried out have helped to determine some recommended actions, which when implemented

will absolutely meet the overall objectives for the Santa Ynez?

DR. HANSEN: I would, as a scientist, be less emphatic that they will specifically meet those. We have some continuing uncertainties. There are some variabilities inherent in the system. We are using the data to the best of our ability to identify reasonable and prudent measures for approaching and addressing those. The Adaptive Management Committee is part of the framework as is the Consensus Committee for trying to continue the flexibility and to address those issues as they arise in the future.

MR. BRANCH: So it would probably be prudent, in your opinion, to continue with the studies, accumulate future data, compare it to overall objectives and then make a judgment call as those processes go on; would that be correct?

DR. HANSEN: I think it is a fundamental part of what we have testified to today.

MR. BRANCH: Thank you.

Ms. Baldridge, on Page 3 of your testimony you state that the actions, and I believe this is also in the Fish Management Plan, the actions recommended in the plan referring to the FMP, are also consistent with those presented in CDFG's Steelhead Restoration and Management

Plan for California.

Do you recall that?

MS. BALDRIDGE: I do.

MR. BRANCH: I wanted to clarify the statement a little bit. I am assuming you have read the steelhead plan?

MS. BALDRIDGE: I have.

MR. BRANCH: Are you saying in this statement that the proposed Fish Management Plan actions are consistent because they are not in conflict with that plan?

MS. BALDRIDGE: They are consistent and it's my recollection -- it's been a while since I looked at Mr. McEwan's report -- that they address some of the elements that he identified as important for the Santa Ynez.

MR. BRANCH: They address some of those recommendations?

MS. BALDRIDGE: That's correct.

MR. BRANCH: Would you say they accomplish all the recommendations?

MS. BALDRIDGE: No, they do not.

MR. BRANCH: There is one particular recommendation that you may or may not recall. Tell me if you don't recall. I'm afraid in my asking the question I

know the answer. The first recommendation in the steelhead plan states the feasibility of providing adults and juvenile passage around Bradbury should be investigated and implemented accordingly?

MS. BALDRIDGE: I am aware of that element in Dennis' plan.

MR. BRANCH: Are you saying that the feasibility of providing such passage has been investigated with any finality at this point?

MS. BALDRIDGE: No. I think I testified we are continuing to consider those opportunities in the upper basin. We evaluated that, a screening conceptual level plan and we found that there was significant challenges associated with trying to move forward with the passage under the Fish Management Plan. We have reserved that as continuing investigations.

MR. BRANCH: Have you set a date certain yet for a deadline on determining the feasibility?

MS. BALDRIDGE: We don't have a deadline in determining feasibility. We do have -- we have initiated some additional studies to investigate some of the genetic and biological issues associated with the upper basin which we felt from the AMC level would be the first step.

MR. BRANCH: Is there a completion date?

MS. BALDRIDGE: For the genetic study or for

those studies --

MR. BRANCH: I am looking mostly at studies on feasibility passage, I guess. Has any progress been made and do you anticipate a date in the near future that that will be complete?

MS. BALDRIDGE: I think maybe the way to answer your question is we are doing it in steps. We have our first step, which is collecting additional genetic information. We have had some trouble in getting genetic information.

MR. BRANCH: Sorry, I just wanted to clarify a little bit. When you say "we," who do you mean?

MS. BALDRIDGE: I would say in this case it would be the AMC and SYRTAC, the studies that we have initiated, that we have collected data for, Scott's collected a number of the samples of the people who participated. It is difficult to get genetic analysis back very quickly because most of our geneticists are very busy dealing with other endangered species elements everywhere, and so we have had a delay in getting a return on those analyses. We are currently waiting on analyses coming back from the DJ process -- project, excuse me, that the Fish & Wildlife Service has in place. We have additional collection scheduled for this spring.

Our upper basin studies, with the exception of the

genetic analysis, which is hard to commit to when that would be, would be completed within the next 18 months. So we will have the evaluation of the upper basin habitat that we'll overlay on what the Forest Service have already done with that.

MR. BRANCH: You are talking about upstream habitats, but I am talking about feasibility of providing some sort of fish passage operation in particular. Has that --

MS. BALDRIDGE: That would be undertaken after we understood a little bit more about the biological context for that.

MR. BRANCH: On Pages 42 to 45 of your testimony you discuss good condition under Fish and Game Code Section 5937, correct?

MS. BALDRIDGE: Yes.

MR. BRANCH: I would like to clarify some of your statements. On Page 44 of your testimony do you state that completion of FMP actions, Fish Management Plan actions, would meet the, quote-unquote, habitat criteria under the population level as established by Moyle, correct?

MS. BALDRIDGE: That's correct.

MR. BRANCH: You put up a slide earlier for your testimony that illustrates some of these aspects of

good conditions.

Do you recall that?

MS. BALDRIDGE: I do.

MR. BRANCH: Is it possible to put that slide up? I think it might have been Slide 22 of her testimony. If it is going to take a long time, I can move on.

H.O. SILVA: You want to come back to that question?

MS. BALDRIDGE: I have a copy of that slide in front of me.

MR. BRANCH: On the slide you prepared under the population criteria you gave two elements, extensive habitat and I think broad distribution of habitat?

MS. BALDRIDGE: Yes.

MR. BRANCH: Isn't it true that Moyle states that all life history stages and their required habitat should have a broad distribution to sustain the species indefinitely?

MS. BALDRIDGE: That may be a more accurate statement of the paper that I worked on. I was his coauthor.

MR. BRANCH: Isn't it correct that you do not state in your testimony that a viable population size will be achieved as a result of the proposed FMP actions?

MS. BALDRIDGE: I don't state that a viable

population would be achieved in that.

MR. BRANCH: Isn't it correct a viable population size must be met in order to have good condition under the Moyle criteria?

MS. BALDRIDGE: A viable population criteria really came from the Derawon [phonetic] --

MR. BRANCH: Wait a minute. I asked a yes or no question.

MR. WILKINSON: Excuse me.

H.O. SILVA: I think you are asking pretty complicated questions. If you want to restate it, I couldn't follow your question either. Just reask it again and see what I rule here. I want to know where you are going.

MR. BRANCH: I will read it slowly.

Isn't it correct that a viable population size must be met -- a viable population must occur in order to have good condition under the Moyle criteria?

MS. BALDRIDGE: Moyle criteria. The viable population is a goal that is achieved. It is also expressed through habitat in the system that Peter and I were working in.

MR. BRANCH: That sounds like a yes to me.

MR. WILKINSON: You answer your own questions, too.

H.O. SILVA: I think she was trying to answer the question. To me they are very complicated questions. I don't think it is a yes or no.

MR. BRANCH: Go ahead.

MS. BALDRIDGE: I'm sorry, I lost my train of thought.

MR. BRANCH: So have I, actually. Let me just go to the next question. Maybe it will be a little easier.

Isn't it correct that all three tiers of the Moyle criteria must be met to have good conditions?

MS. BALDRIDGE: Yes.

MR. BRANCH: What -- in the FMP what are the pleasurable criteria to determine when a viable population size is achieved?

MS. BALDRIDGE: We don't know what a viable population would be in the Santa Ynez River. That would be part of the work that NOAA Fisheries would do as they proceed with their recovery plan. We would assign those numbers and the values of the population. We don't know right now. We do have measures that will be expanding habitat within the Santa Ynez River drainage. We also have the opportunity to monitor what those populations are. So we will have important information to go to to provide to other agencies who are making those

determinations.

MR. BRANCH: Very good.

Currently in the FMP those criteria have not yet been developed; that would be correct?

MS. BALDRIDGE: Criteria for?

MR. BRANCH: Viable population size.

MS. BALDRIDGE: No, they have not been.

MR. BRANCH: I can address this to maybe anybody on the panel.

Does anyone have an estimate of the total steelhead population in the Santa Ynez River, approximately?

Ms. Baldridge, do you?

MS. BALDRIDGE: I have a guess. Would you like my guess? I don't know if it is an opinion. It is a guess.

MR. WILKINSON: Can I just ask for clarification of a question? Are you focusing on a particular part of the life cycle? Adults? Juveniles? Smolts?

MR. BRANCH: If she has a guess for each, that would be great.

MS. BALDRIDGE: I don't. I don't have a guess for each. In the NOAA document that went through the status review there is very low populations that were in the Santa Ynez River and in the ESU. We still have very

low populations. We are still in the process of increasing those populations, but we have made progress associated with that. Progress is tied to hydrologic cycles as well as an opportunity to implement the plan. And although it grieves me to say the plan has not been fully implemented as yet, it has not -- we have not been able to implement very important components of that plan.

MR. BRANCH: Thank you.

There currently is no way to measure flow at the Highway 154 Bridge; is that correct?

MS. BALDRIDGE: I think I would have Ali Shahroody answer that question. He is much more familiar with that.

MR. BRANCH: Again the question for Mr. Shahroody. There is no way to measure flow at the Highway 154 Bridge; correct?

MR. SHAHROODY: First of all, you're talking we don't have a flow in surface. There is no way to do that, to the extent that it dips. Underneath there is a subflow. Unless someone wants to make a determination of water moving in subsurface, which then appears again, to that end there is no way. They have no setup, the means to do that.

To the extent there is a surface flow, there is no established gauge, and what we have observed is it just

acts as more of a sheet flow. You can make a measurement with a meter, a pigmymeter [phonetic] for that matter, but I don't think it is going to be that accurate.

MR. BRANCH: Thank you.

Getting back to Ms. Baldridge. On Page 14 of your testimony you say that the Bureau Member Units are investigating an alternative monitoring program for Highway 154 Bridge. Is that correct?

MS. BALDRIDGE: That's correct.

MR. BRANCH: How long has this investigation process been going on?

MS. BALDRIDGE: I would have to defer to David Young for an answer.

MR. YOUNG: Repeat the question, please.

MR. BRANCH: How long have the investigations for an alternative monitoring program at the Highway 154 Bridge been going on?

MR. YOUNG: Since after September 2002.

MR. BRANCH: A little over a year.

MR. YOUNG: Yes, or less.

MR. BRANCH: Or less?

MR. YOUNG: It was after.

MR. BRANCH: Do you now have an alternative monitoring program in place or is the investigation still going on?

MR. YOUNG: The investigation is still going on. I refer you to another person on the panel who could provide some more information to that.

MR. BRANCH: That is okay. Thanks.

Back to Ms. Baldridge, pass the microphone.

Can you reliably measure flow in the Highway 154 to the Solvang reach of Santa Ynez River currently?

MS. BALDRIDGE: Can we reliably measure flow in that reach? I don't have firsthand knowledge of really good measuring locations. I would imagine there would be locations. Scott could provide you with a definitive answer.

MR. BRANCH: On Page 15 of your testimony you say there is work on the way to improve the reliability of the gauge in that stretch.

MS. BALDRIDGE: That is the work that USGS is doing.

MR. BRANCH: But in your testimony, because you say that is work underway to improve the reliability of the gauge, it does seem to imply that it is unreliable at this point in time?

MS. BALDRIDGE: The gauge has a problem with low flow measurement currently. Ali Shahroody can give you more detail if you'd like.

MR. BRANCH: I will pass.

You say on Page 15 of your testimony that you began meeting the target flow requirements in September 2000; is that correct?

MS. BALDRIDGE: That's correct.

MR. BRANCH: Does that refer to the target flows in the Fish Management Plan as a whole?

MS. BALDRIDGE: That refers to the target flows in the Fish Management Plan and also in the Biological Opinion. They are the same.

MR. BRANCH: How do you know if target flows have been met if you can't measure at Highway 154?

MS. BALDRIDGE: There was a time period when we did measure at 154. We didn't discover we were on private property for the first two years.

MR. BRANCH: In 2000 you were able to measure?

MS. BALDRIDGE: 2001 we were able to understand that the flows -- the release patterns that we had were meeting our target flows at 154 Bridge due to the measurement that Mr. Engblom made on a weekly basis.

MR. BRANCH: What was the time period that you could measure at 154?

MS. BALDRIDGE: I am going to have to ask Scott to answer that question.

MR. ENGBLOM: I don't recall exactly. There was -- we were confronted by the landowner at one point.

MR. BRANCH: Do you know when that was?

MR. ENGBLOM: It was at least a year ago, maybe a year and a half ago or so. We were uncertain at that point where the actual easement was, and we had the county surveyors come out and verify that for us.

MR. BRANCH: Thank you. Can you pass the microphone back to Ms. Baldridge. Since there is currently no way to measure flow at Highway 154, I would be correct -- would I be correct in saying that you don't know if you're meeting all the target flows in the FMP?

MS. BALDRIDGE: Since there is currently no way to measure at 154, we cannot verify that we are meeting those flows from a measurement perspective. We do know from the amount of water that we are releasing downstream, based on the water that we've released in the past, that Bureau's even overreleasing currently to make sure that they have sufficient waters in that reach. I am sure David Young would be glad to elaborate on that.

MR. BRANCH: You can't verify with a gauge?

MS. BALDRIDGE: We cannot verify with a gauge.

MR. BRANCH: On Page 18 of your testimony you state that the temperature criteria were recommended in the fisheries technical report prepared by Entrix in 1995, correct? It's a couple of paragraphs down.

MS. BALDRIDGE: The temperature criteria that

were used in that report, they were recommended -- they were recommended in other forms as well.

MR. BRANCH: You say that these were based on CDFG standards for Central and Southern California?

MS. BALDRIDGE: That's correct.

MR. BRANCH: Are you aware that DFG does not have any published temperature standards for those areas?

MS. BALDRIDGE: Yes, I am aware of that. The reason that that statement is there is that those were temperature criteria that were suggested be utilized in hydroelectric relicensing projects by CDFG as those processes went forward. When we had the SYRTAC committee, as Chuck mentioned, we had a lot of debate over the temperature criteria, and that is what we ended up deciding on in part because they were recommended by the Department of Fish and Game in those other forms.

MR. BRANCH: For a different project, correct?

MS. BALDRIDGE: Correct.

MR. BRANCH: Page 45 of your testimony you state that with the continued execution of plan, referring to the Fish Management Plan, the native fish community can meet most of the criteria developed by Moyle, correct?

MS. BALDRIDGE: Correct.

MR. BRANCH: You are, therefore, saying that with the execution of the plan the native fish community

will not meet all of Moyle's criteria?

MS. BALDRIDGE: That's correct because the exotics in that system, I don't think there is any way to get rid of the exotics. They are continuing to be there and they will continue to be a large component of the fish community.

MR. BRANCH: Therefore, since all three tiers must be met and they are not, would I be correct in saying that steelhead in particular will not be in good according to Moyle's definition after execution of the FMP's recommendations?

MS. BALDRIDGE: Recall that the definition, the community definition, there is a community one; it is not just steelhead. It is the composition of the fish community.

MR. BRANCH: Let's talk about the fish community, it would not be in good condition?

MR. WILKINSON: Again, I would appreciate it if counsel would allow the witness to finish her answers to the questions.

H.O. SILVA: I thought she did. You were asking a question.

MR. BRANCH: It is moving on to the fish population in general. They would not be in good condition according to Moyle's conditions?

MS. BALDRIDGE: That's correct.

MR. BRANCH: I have no further questions.

H.O. SILVA: I was going to say I think for the witnesses I know you trying to answer and in some cases you are going beyond what is being asked. I would just ask you to answer the questions as concisely as you can. I know you're trying to be helpful in some cases, but just listen to the question and answer what they are trying to ask you. Do the best you can.

A lot of you are trying to be very cooperative, but you are being overly cooperative. I think that is what you were talking about.

MR. BRANCH: Right. I was just trying to zoom in on the answer.

H.O. SILVA: I agree.

MR. BRANCH: Thank you.

H.O. SILVA: NOAA.

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CROSS-EXAMINATION OF PANEL V

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: My first question is directed to Mr. Young. You discussed the Section 7 consultation process between NOAA Fisheries and Reclamation, correct?

MR. YOUNG: Yes.

MR. KEIFER: Did NOAA fisheries indicate the reasons for their desire not to pursue trapping and trucking of steelhead at Bradbury Dam during the consultation process with Reclamation?

MR. YOUNG: Yes, during the initial informal consultation.

MR. KEIFER: Can you tell us what those reasons were?

MR. YOUNG: I can vaguely recall some terminology that trapping and -- providing passage for steelhead above Bradbury Dam would require excessive resources and extraordinary effort, phrases to that nature, to that vein, that NOAA Fisheries did not want to entertain at that time.

MR. KEIFER: Do you recall seeing any correspondence from NOAA on that issue?

MR. YOUNG: Yes.

MR. KEIFER: See if this sounds familiar: Issues such as trapping and trucking of steelhead and a steelhead hatchery require careful, long-term development and assessment and are not appropriate for consultation at this time.

Does that sound familiar?

MR. YOUNG: Yes.

MR. KEIFER: So there is no mention of

excessive resources?

MR. YOUNG: Probably not in that letter.

MR. KEIFER: Mr. Engblom, I have a few questions for you.

You highlighted some of the restoration actions that are occurring on Hilton Creek?

MR. ENGBLOM: Yes, that's true.

MR. KEIFER: Was that your slide or somebody else's slide with that wonderful picture with everybody with the hand on the valve?

MR. ENGBLOM: That was taken during the ceremony to open up the valve.

MR. KEIFER: I just want to express our appreciation of that picture. That was wonderful.

MR. ENGBLOM: I didn't take it, though.

MR. KEIFER: Well, the smiles were quite gratifying. But my question to you on Hilton Creek is: What percentage of historical steelhead habitat in the Santa Ynez River does Hilton Creek represent?

MR. ENGBLOM: On the lower river? The entire river?

MR. KEIFER: The entire Santa Ynez River Watershed.

MR. ENGBLOM: I don't know. I imagine it is small compared to the entire watershed.

MR. KEIFER: Compared to what steelhead have historically had access to, would 2 percent sound like a reasonable number?

MR. ENGBLOM: I'm not sure. It's small.

MR. KEIFER: Less than 2 percent?

MR. ENGBLOM: I don't know. I don't know the direct comparison of all the tributaries.

MR. KEIFER: Fair enough.

You discussed the monitoring program. How many adult sea-run steelhead have been detected by the monitoring program since its inception?

MR. ENGBLOM: We have physically captured or observed?

MR. KEIFER: Either, both. How about taking them one at a time, captured.

MR. ENGBLOM: I would hazard to say probably perhaps 20 to 40.

MR. KEIFER: How many years was this?

MR. ENGBLOM: From 1995 to 2003.

MR. KEIFER: So 20 to 40 fish over eight years. What is the maximum number of adult steelhead detected in a single year? I think you mentioned a figure of one to two as average. What is the maximum you've done in any single year?

MR. ENGBLOM: I believe it would be probably

on South Salsipuedes Creek and Hilton Creek, each one, probably three, four. It is difficult to determine as far as capturing them. Our redd surveys go through and we will see fish that have gone through, but we haven't collected the genetic samples to determine what exactly that they are, if they are sea-run.

MR. KEIFER: Fair enough.

My next question for Ms. Baldridge.

You have submitted in your written testimony a discussion of success criteria for the Fish Management Plan. Did the success criteria include specific numbers of returning adults, sea-run steelhead?

MS. BALDRIDGE: They do not.

MR. KEIFER: In your written testimony, and I hope not to tread over ground already plowed by Department of Fish and Game, you characterize two fish passage options at Bradbury Dam as infeasible. With respect to those fishing passage issues, have you identified specific objective measurable criteria for determination of feasibility anywhere in your written testimony?

MS. BALDRIDGE: The feasibility analysis that I reported there was the one that was conducted under the alternatives, the evaluation for the alternative management actions, and it was in a report that we published in, I think, '98.

MR. KEIFER: So in your written testimony you didn't identify any specific objective measurable criteria for determining feasibility?

MS. BALDRIDGE: We had a number of elements that we would use in that report which included institutional issues, cost issues, whether it was feasible. When we looked at the feasibility of laddering the dam, we found that it was pretty high for that. The other option, which looked like it was pretty promising, was the option through Hilton Creek.

MR. KEIFER: I haven't asked about the Fish Management Plan yet. Just with respect to your written testimony have you identified any specific objective measurable criteria for determining feasibility of any fish passage options at Bradbury Dam?

MS. BALDRIDGE: I am trying to answer your question in a very short and direct manner. The criteria that we used were criteria associated with categories, they weren't criteria that you would do for an engineer feasibility study.

MR. KEIFER: Is that what you used, is it in your written testimony?

MS. BALDRIDGE: I didn't use any engineering feasibility criteria. The ones that I did use was in the fish alternative report which is part of this record.

MR. KEIFER: Did you define feasibility anywhere? In the Fish Management Plan, I know you referenced that. My question is for your written testimony, did you define feasibility?

MS. BALDRIDGE: No.

MR. KEIFER: Is feasibility specifically defined anywhere? And I believe it is Appendix E that addresses in great detail that Fish Management Plan passage issues.

MS. BALDRIDGE: No.

MR. KEIFER: Feasibility is not defined?

MS. BALDRIDGE: I don't recall it being defined.

MR. KEIFER: There is not a list of specific, objectively measurable criteria for determining feasibility?

MS. BALDRIDGE: No.

MR. KEIFER: Thank you.

My next question is for Mr. Shahroody. Pass the mike down.

Did your analysis of impacts of fishery release on project water supply take into account the 2,000 acre-feet of infiltration into the Tecolote Tunnel?

MR. SHAHROODY: It did. That is the total project yield, 25,714, which includes 2,000 acre-feet of

Tecolote Tunnel infiltration.

MR. KEIFER: My next question is for Mr. Hansen.

Have there been any specific field studies of tributaries above Bradbury Dam conducted?

DR. HANSEN: Let me defer that to Ms. Baldridge.

MS. BALDRIDGE: The SYRTAC participated with Forest Service in some studies they were doing up there. We provided them some field staff to do that. Our tributary investigations that Mr. Engblom will be conducting will be coming up this March.

MR. KEIFER: That addresses the future. Can you elaborate on what the Forest Service was looking at?

MS. BALDRIDGE: The Forest Service was looking at habitat characterization in the upper basin. We provided field support to several different upper basin studies that have looked at both habitat --

MR. KEIFER: Can you name specific tributaries that the Forest Service looked at?

MS. BALDRIDGE: No, I cannot, I'm sorry.

MR. KEIFER: I have one more question for Mr. Hansen.

Did you consider changes in riparian vegetation below Bradbury Dam as a result of land clearing for

agricultural or urban development?

DR. HANSEN: We recognized that those occur. I am not quite sure what you mean by did we consider them.

MR. KEIFER: That is fair enough. I think that is all I have.

H.O. SILVA: Thank you.

Take five minutes here real quickly. Nobody go anywhere.

(Break taken.)

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CROSS-EXAMINATION OF PANEL V

BY CALIFORNIA TROUT

BY MS. KRAUS

MS. KRAUS: Mr. Young, I will start with you. Can you tell me how many times the Adaptive Management Committee has met between 2001 and April 2003?

MR. YOUNG: You mean the full Adaptive Management Committee?

MS. KRAUS: I guess I am actually not clear on what the other options would be with respect to the Adaptive Management Committee. If you want to explain those, then I can clarify.

MR. YOUNG: Which question would you like me to answer first?

MS. KRAUS: When you asked me the full

Adaptive Management Committee, what is the other option?

MR. YOUNG: The hydro subgroup as it is called.

MS. KRAUS: That is the only other subcommittee?

MR. YOUNG: Yes.

MS. KRAUS: Why don't you first tell me the full Adaptive Management Committee.

MR. YOUNG: We have met since publication of the Biological Opinion probably four to six times.

MS. KRAUS: Do you know since 2001 how many times?

MR. YOUNG: Probably the same. I don't believe we met during the time period of September 2000 to December of 2000.

MS. KRAUS: With respect to the hydro subcommittee, how often have they met since 2001?

MR. YOUNG: As I stated previously, about 14 times.

MS. KRAUS: Is that since 2001?

MR. YOUNG: Yes.

MS. KRAUS: Your testimony and your written testimony referenced that Reclamation has had, quote, difficulty maintaining target flows at Highway 154; is that correct?

MR. YOUNG: Yes.

MS. KRAUS: This statement, is it referring to target flows for rearing?

MR. YOUNG: One of the purposes of the target flows for the Biological Opinion is to provide rearing habitat between Bradbury Dam and Highway 154. That is known as our management reach.

MS. KRAUS: So when you say -- when you mention in your testimony that Reclamation has had difficulty maintaining target flows at 154, that is target flows for rearing at 154, then?

MR. YOUNG: I would answer that the difficulty we have is in verifying target flows at Highway 154.

MS. KRAUS: Has there been any period of time when Reclamation has not maintained target flows at Highway 154?

MR. YOUNG: I can't recall of any circumstance where prior to September 2002, when Reclamation learned through monitoring that the target flows were not being met, that Reclamation did not respond to make adjustments.

MS. KRAUS: I am not sure that you actually answered my question. Has there been a time where the target rearing flows, the target flows at Highway 154 have not been met?

MR. YOUNG: There are times when the target

flows at 154 have not been met.

MS. KRAUS: Can you identify when that occurred?

MR. YOUNG: Based on my recollection, beginning in 2003, sometime during the summer, the target flows -- well, other than the fact of not being able to monitor and have a quantitative answer, I would have to say probably sometime during the summer of 2003.

MS. KRAUS: When you say during the summer of 2003, does that mean since that time the Bureau has not been maintaining target flows at 154?

MR. YOUNG: Reclamation has provided releases from Bradbury Dam in amount of water and in excess of the amount of water that prior to the summer of 2003 were meeting the target flows. So we have not adjusted the release from Bradbury Dam below releases we made prior to the summer.

MS. KRAUS: During those times where the target flows have not been maintained?

MR. PALMER: Objection. He has not said that.

MS. KRAUS: I thought that he did say that in the beginning of the summer of 2003.

H.O. SILVA: He did say that they had not been met.

MR. PALMER: It wasn't his last answer.

MS. KRAUS: I wasn't following up on the last answer. I was asking --

H.O. SILVA: Just ask the question.

MS. KRAUS: My question was: The times -- at those times when the target flows were not being met at Highway 154, do you know what the flow was?

MR. YOUNG: We have measurements in the reach on Reclamation property, instream flow measurements.

MS. KRAUS: During any of those times when the target flow's not being met at Highway 154 -- let me start that over.

For any of those times where the target flows were not being met at 154 -- I am having trouble formulating this one.

Were there times when there was no flow at Highway 154?

MR. YOUNG: Yes.

MS. KRAUS: When were those times?

MR. YOUNG: I'm sorry?

MS. KRAUS: When did that occur that there was no flow at Highway 154?

MR. YOUNG: No surface flow during the summer of 2003.

MS. KRAUS: Has the Bureau ever increased water releases in order to meet target flows at Highway

154?

MR. YOUNG: Yes.

MS. KRAUS: When did the Bureau do that?

MR. YOUNG: You mean within what time frame we are talking about?

MS. KRAUS: That is what I am asking: When were the times that flow was increased to meet target flows?

MR. YOUNG: Most of the time since the issuance of the Biological Opinion target flows have started at five cfs and have sequentially dropped down from five to two and a half to one and a half cfs. So can you elaborate on your question? I am not clear on what you're asking.

MS. KRAUS: As I understand it, there may be times you have to release more from Bradbury from one of the release points near Bradbury in order to actually obtain the target flow at Highway 154?

MR. YOUNG: Are there times? I'm sorry, one more time.

MS. KRAUS: I am giving you context. In order to meet the target flow at 154, you may have to increase the amount of water released from Bradbury; is that correct?

MR. YOUNG: That's correct.

MS. KRAUS: Have there been times when the Bureau has done that?

MR. YOUNG: Yes.

MS. KRAUS: Can you identify when those times occurred?

MR. YOUNG: Probably the most recent example has been -- I would have to refer back to the data from the website as to what our releases are. I can't answer exactly when we made those changes.

MS. KRAUS: Does the Biological Opinion have provisions in it that allow Reclamation to not meet target flows at 154?

MR. Young: Yes, it does.

MS. KRAUS: What are those provisions?

MR. YOUNG: The Biological Opinion specifically states that during the interim period, that is before the surcharge, that low target flows could cause the river to go dry or the flow would be interrupted, but that the effects analysis of the Biological Opinion did take that into account and still produce a nonjeopardy opinion.

MS. KRAUS: So the flow schedule that is identified in the Biological Opinion for the interim period prior to surcharge does allow there to be no flow at Highway 154?

MR. YOUNG: The Biological Opinion does.

MS. KRAUS: Does the Biological Opinion have provisions in it that allow Reclamation to not meet the target flows at 154 if beaver colonies or dams impede flows above 154?

MR. YOUNG: No, just low flows. So if beaver dams do create low flows, I would presume that would be a trigger.

MS. KRAUS: Does the Biological Opinion have provisions in it that allow Reclamation to not meet the target flows at Highway 154 if flows go subsurface near 154?

MR. YOUNG: During the interim?

MS. KRAUS: Yes. Actually interim and post surcharge.

MR. YOUNG: We have no data relative to post surcharge, so I can't answer that. Relative to subsurface flows, it is my opinion that is the same thing as no flow as described in the Biological Opinion because that occurs during the low target flow of 1.5.

MS. KRAUS: Does the Biological Opinion have provisions in it that allow Reclamation to meet the target flows if there is a loss of public access at the Highway 154 monitoring station?

MR. YOUNG: I am not aware of that.

MS. KRAUS: The provision that you mentioned in the Biological Opinion that does allow for low surface flow and, therefore, not meeting the target at 154, can you identify where that appears in the Biological Opinion?

MR. YOUNG: If I am provided a copy, I probably could.

MR. YOUNG: I refer you to Page 65, Paragraph 4, or -- yeah, Paragraph 4.

MS. KRAUS: Can you read the piece that you think says that?

MR. YOUNG: Maintaining the proposed flow targets for steelhead will provide increased low flow summer rearing habitat when compared with recent or historical conditions. This will provide the benefits identified above, including increased food, covered shelter, dissolved oxygen and lower temperatures near the dam. However, as some low flows, areas of the river known to contain steelhead are likely to return to fragmented flow or complete lack of flow based upon the proposed project. A lack of flow in the areas is likely to continue to reduce the survival chances of steelhead farthest

from the dam (3.5 to 10 miles) if steelhead are present. As noted, this adverse effect is most likely to occur during the interim period, prior to the approval and implementation of the 3.0-foot surcharge. Proposed long-term flow targets will increase the survival chances of steelhead in the main stem, improving the Santa Ynez population viability. These effects are expected to continue in the main stem for the duration of the project. (Reading)

MS. KRAUS: Thank you.

Is it correct that this provision states that a lack of flow in areas is likely to continue to reduce the survival chances for steelhead furthest from the dam?

MR. YOUNG: That's correct.

MS. KRAUS: Does the Biological Opinion identify any location in the main stem other than Highway 154 at which target flows must be met during the interim period prior to surcharge?

MR. YOUNG: I would have to search. I am not real sure.

MS. KRAUS: Does anyone else on the panel know the answer?

MR. JACKSON: Can you ask the question again, please?

MS. KRAUS: Does the Biological Opinion identify any location in the main stem other than Highway 154 at which target flows must be met pre surcharge?

MR. YOUNG: Do you have a page in mind?

MS. KRAUS: I can direct you to the page where I think the answer is. On Page 6 and 7.

MR. YOUNG: Thank you.

It will take me a minute to read.

Yes, on Page 7. Did you want me to read it?

MS. KRAUS: Are you answering to my question that, yes, there is another site?

MR. YOUNG: Yes.

MS. KRAUS: For presurcharge?

MR. YOUNG: This pertains to post surcharge. Sorry, I don't see one presurcharge.

MS. KRAUS: So the Biological Opinion only identifies one implementation site in the main stem for target flows presurcharge; is that correct?

MR. YOUNG: That is my opinion.

MS. KRAUS: Thank you.

Mr. Shahroody, with respect to downstream water rights, has there been a study for modeling to evaluate the impacts of releases at lower rates for a longer

duration than under the Biological Opinion, than called for under the Biological Opinion?

MR. SHAHROODY: The answer is no because it is all based on experience of 30 years.

MS. KRAUS: Thank you.

In your testimony for Panel V you prepared this table which is marked as Cachuma Member Unit Exhibit 245, Slide 14, identifying the simulated impacts to water right releases for water years 1918 to 1993. And actually, my question: Did you prepare this?

MR. SHAHROODY: Table 3-4?

MS. KRAUS: Yes.

MR. SHAHROODY: Yes, I did.

MS. KRAUS: In preparing this table did you include increased water conservation measures that could potentially reduce impacts to downstream water rights?

MR. SHAHROODY: These are based on the model runs, period of 1916 to 1993, hydrology and demand for water in Santa Ynez Valley from the dam down to the Narrows. Because as far as the demand goes for the consumptive use, phreatophytes, bank retention, bank releases, those are all worked in. But to answer your question again, there is not an analysis made that if the demands is going to be reduced by any conservation that analysis has not been made and these are based on water

right demands.

MS. KRAUS: Thank you.

Ms. Baldridge, earlier in response to Mr. Branch from Fish and Game's questions you indicated that you utilized Fish and Game criteria regarding temperature. That had been utilized for FERC relicensing?

MS. BALDRIDGE: I believe my testimony was that the criteria came around by a number of methods, that Dr. Hansen testified earlier, recall the extensive review that was done in dialogue. In addition to that, we also have a suggestion from the Fish and Game representative on the SYRTAC at the time that we consider that criteria from their other processes. So it is not fair to say it was only on that particular one.

MS. KRAUS: I was not actually trying to suggest that. I was trying to confirm that you did consider that criteria from Fish and Game.

MS. BALDRIDGE: Yes, we did.

MS. KRAUS: And it was criteria for FERC relicensing?

MS. BALDRIDGE: That's correct.

MS. KRAUS: Were those FERC relicensings -- sorry, were the criteria utilized for those FERC relicensings for anadromous fisheries?

MS. BALDRIDGE: I don't know the answer to

that question.

MS. KRAUS: Referring to your written testimony on Page 19, just below the table, you state that the data collected to date show it is not possible to maintain water temperatures suitable for support of rainbow trout/steelhead during the summer months downstream of the priority main stem reaches.

Is that correct?

MS. BALDRIDGE: That's correct.

MS. KRAUS: What do you base this conclusion on?

MS. BALDRIDGE: It was based on the SYRTAC studies that were conducted.

MS. KRAUS: What studies are you referring to?

MS. BALDRIDGE: I am referring to the temperature monitoring studies that have been done by the SYRTAC and particularly those that were done during the 89-18 releases.

MS. KRAUS: Can you explain how your conclusion is consistent with the observations of the Santa Ynez River from 1995 and 1998 that are referred to on Page 13 of Mr. Hansen's testimony? Specifically Mr. Hansen's written testimony indicates: Despite elevated water temperatures during the later summer, that steelhead were observed to be successfully oversummer.

MS. BALDRIDGE: I'm sorry. We do observe steelhead. I think we have looked at some thermal refugia that occurs in that those. The testimony that I have here indicates that temperatures do get quite warm in the Santa Ynez River at even higher flows as you move downstream.

MS. KRAUS: Your conclusion, however, is that it is not possible to have water temperatures that are suitable for steelhead?

MS. BALDRIDGE: Based on the criteria that we used which is 20 degrees C daily. I think in our testimony in the panel, I think it was Dr. Hansen and probably Scott also discussed the fact that we have residual pools that occur in these areas. Some of them have upwelling; some of them don't. We observed steelhead to be in those pools and to make it through the summer period. We also have some uncertainty about what the exact thermal requirements might be for Southern California steelhead.

MS. KRAUS: I understand. And if there is uncertainty, how can you conclude that it is not possible to maintain water temperatures that are suitable for steelhead?

MS. BALDRIDGE: The conclusion that I have here that it is not possible to maintain the summer water temperatures are contingent upon the 20 degrees C or 24

degrees maximum daily flows. That temperature monitoring that we have done shows that those values are exceeded and it is not possible to change that with additional flow.

MS. KRAUS: Those temperature values are general guidelines?

MS. BALDRIDGE: They are general guidelines.

MS. KRAUS: They are not definitive determinations whether or not steelhead of the Santa Ynez River can survive within those ranges -- outside of those ranges, sorry?

MS. BALDRIDGE: We have used those as general guidelines.

MS. KRAUS: Do you have specific numeric targets and dates for spawning and rearing habitat with respect to your success criteria?

MS. BALDRIDGE: We have specific criteria associated with our tributary actions. For example, we have an upper moving passage barrier. We anticipate that that is going to open a particular amount of habitat. The other habitat values we are looking for particular quantity and quality of habitat in the main stem of the management reach, we have those. They are lineal distances.

MS. KRAUS: Where are those identified?

MS. BALDRIDGE: Some of those are identified

in the Fisheries Management Plan, I believe, where we are looking for improvement in associated habitat.

MS. KRAUS: Can you tell me where in the plan?

MS. BALDRIDGE: If I can take a moment to check.

I don't see them published in the plan. It must just be in our working papers.

MS. KRAUS: Are those -- any of those working papers been submitted as part of the record for this hearing?

MS. BALDRIDGE: I don't believe they have been.

MS. KRAUS: I think I recall one of your --

MS. BALDRIDGE: I'm sorry, some of them are embedded in the text in the implementation part. For example, on Page 5-3 we have Hilton Creek watering system, where it looks like we are providing reach lower 1,382 to 2,980 of Hilton Creek, 2.9-mile section of 154 reach.

MS. KRAUS: I believe that you identify habitat improvement as one of your success criteria?

MS. BALDRIDGE: That's correct.

MS. KRAUS: Within that category of habitat improvement do you have specific numeric targets with respect to spawning and rearing habitat?

MS. BALDRIDGE: For the improved condition?

No, we have not. We have been monitoring those as Scott does his habitat assessments.

MS. KRAUS: Do you have specific numeric targets for steelhead population size?

MS. BALDRIDGE: We do not.

MS. KRAUS: Do you agree that whatever criteria are used to measure success, they should be monitored through field observation and data collection?

MS. BALDRIDGE: I do.

MS. KRAUS: Page 10 of your testimony states that much of the State Highway 154 reach is inaccessible private property; is that correct?

MS. BALDRIDGE: That's correct.

MS. KRAUS: Is this the same area that you have identified as one of your primary main stem management reaches to benefit steelhead?

MS. BALDRIDGE: Yes, that is correct.

MS. KRAUS: I think in response to questions raised by NOAA Fisheries you indicated that the Adaptive Management Committee and the SYRTAC were doing some upper basin studies. Is that correct?

MS. BALDRIDGE: That is correct.

MS. KRAUS: I just want to clarify that because in your written testimony on Page 31 you state that the Member Units are currently undertaking a

three-part study of information on the upper basin and subsequently that the SYRTAC data and feasibility constraints were updated by Reclamation and Cachuma Member Units.

Can you clarify whether it is the SYRTAC that is conducting these studies or whether it is the Member Units?

MS. BALDRIDGE: The funding comes from the Member Units for the studies to be conducted. So we need to submit a program through them for their approval. They have approved the program, so that program will come back now to AMC to be discussed and it will be implemented. Part of it has been implemented to look at hatchery planting records which is something AMC has discussed previously.

MS. KRAUS: Thank you.

On Page 24 of your testimony, in Section 4.6, tributary habitat, that first paragraph, you reference some studies and indicate that the results of these studies show that opportunities to enhance habitat in the main stem are limited to a few miles below Bradbury Dam; is that correct?

MS. BALDRIDGE: That's correct.

MS. KRAUS: Of the studies that you referenced, you identify SYRTAC unpublished data?

MS. BALDRIDGE: Yes.

MS. KRAUS: What is this unpublished data?

MS. BALDRIDGE: I believe that is the data that Scott Engblom has in his files that he provided to a number of parties prior to this hearing.

MS. KRAUS: Has the material -- has this unpublished data been submitted as part of the record for this hearing?

MS. BALDRIDGE: I don't know the answer to that.

MS. KRAUS: Referring next to Pages 43 through 44 of your testimony, beginning at the bottom of the Page 43, you state that the criterion of healthy individuals is met based on Cachuma Project biologist snorkel survey data since 1983. And then you again reference several studies, one of which again is SYRTAC unpublished data.

What is -- is this unpublished data the same data that you referenced before, and so again you don't know whether it has been submitted as part of the record for this hearing?

MS. BALDRIDGE: I do not, but I can ask Scott.

MR. ENGBLOM: Ask the question again, please?

MS. KRAUS: The SYRTAC unpublished data that is referenced a couple times in Ms. Baldridge's testimony, Ms. Baldridge has indicated that it is your data in our

files. And my question is whether that data has been submitted as part of the report for this hearing?

MR. ENGBLOM: They would be in the compilation reports, and I am not sure if those have been submitted or not.

MS. KRAUS: Do you know which compilation reports?

MR. ENGBLOM: No, I don't. There has been numerous ones.

DR. GRAY: If I may. Compilation reports were referenced in the Draft Environmental Impact Report, and those reference material are part of the record, I believe.

MS. KRAUS: I think the Draft EIR has not actually formally been submitted to the record because they were missing information.

Is it possible that the data is in the most recent compilation report? Is there a recent compilation report?

H.O. SILVA: I think our counsel here can help a little bit.

MS. DIFFERDING: We recently received from the Bureau all but one of those compilation reports, at least those that are referenced in back of the Draft EIR. So those will be offered into evidence in November once we have gotten all that we can get. So hopefully we will get

the one that's missing, and the rest we do have in our file presently.

MS. KRAUS: Can you tell me which one is missing?

MS. DIFFERDING: I can. We do not have the 994 report, and I assume that is for data collected in 1993.

MS. KRAUS: Thank you, and I am done with my questions.

H.O. SILVA: How long is your redirect?

MR. WILKINSON: I am not sure.

H.O. SILVA: Staff has questions first. I'm sorry, I keep forgetting.

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CROSS-EXAMINATION OF PANEL V

BY BOARD STAFF

MR. FECKO: Mr. Shahroody, I would like to start with you, please.

The slide that is up on the overhead here is Table 4-16 from the State Board's Draft EIR, and it looks at some shortage numbers for single critical drought year of 1951, and the second part of the table is the critical three-year period. On Page 9 of your testimony you have a Table 3-1, which is similar but has some variations in the cumulative shortage and the critical drought period.

Do you see that?

MR. SHAHROODY: I see that.

MR. FECKO: In the three-year period it appears that in most years there is a 2- to 3,000 acre-feet variation, and it causes quite a variation in the percentage of shortage. I am wondering if you have a way of explaining why there is a difference and why there is a variation there?

MR. SHAHROODY: I do. The source of data both for Table 4-16 of the Draft EIR and my testimony, Table 3-2, the source is the same, which has been used. And as you indicated, there is no difference for a single year, which is 1951, which is the Draft EIR and my testimony, Table 3-2. The difference is in the three years, three consecutive years which is 1949 to '51. And the reason for it I think is pretty simple. This should have been communicated.

The Draft EIR utilizes three consecutive years of water years. What I have done here in my Table 3-2 looked at the 36 consecutive months, starting from May of 1949. Because we're looking at a time period independent of whether it is calendar year or water year, what would be the maximum shortage over three consecutive years starting from May, and May has some precedence. Cachuma Project, at least until recent time, used to use on May 15th

through May 14 of the next year as water year, which is odd. But basically fits the hydraulic situation in Santa Ynez River Watershed because all of their runoffs are from rain, not snow. So rain basically would stop, runoff would be ceasing to small amounts by sometime in early part of May. They would know how much water they would have.

For the three consecutive years we mimicked that from May until the April of next year and then, of course, flipped it over three times.

MR. FECKO: Let me put something else up.

MS. DIFFERDING: I have a question, too, along the same line. Are you talking Table 3-1 or 3-2 right now? Because you just said that the numbers for a single year are the same, but the numbers for a three-year period are different. That's true of Table 3-1, but not true of Table 3-2.

MR. SHAHROODY: Thank you for the correction.

MS. DIFFERDING: Are we talking about 3-1 now?

MR. SHAHROODY: We are talking about 3-1. Thank you for the correction. I don't think we're talking about 3-2 at all.

MR. FECKO: Here is an output from the model. This is for -- doesn't show it, unfortunately. This is for basically Alternative 1. We are looking at '49, '50

and '51. So basically in this you've added in the shortage for '52.

MR. SHAHROODY: Correct.

MR. FECKO: You are looking at May to May?

MR. SHAHROODY: Correct. It's the year with the longest months.

MR. FECKO: Maybe we need to -- maybe the title should be a little different, but that is okay. Actually you are looking at 36 consecutive months.

Let's move to Table 3-2 now. This is a similar table except that I believe you described it as there is a reserve set aside because the model understands that the next year is a wet year, but an operator in real time does not know that the next year is a wet year. So the operator has to plan for perhaps another short year; is that correct?

MR. SHAHROODY: Correct.

MR. FECKO: What I am trying to understand is how -- what is the coefficient of that reserve? How does one arrive at that number?

MR. SHAHROODY: Did not use a coefficient. We used, as I indicated in my Panel IV testimony or Panel V testimony -- it's running together -- what we did, we said we would assume that there would be an additional 1951, additional year of drought. So instead of 1952, we just

inputted the data of 1951 twice, and then we did make the analysis of the computer run with one controlling element to achieve the 12,000 acre-feet of minimum pool at the end of the second year of 1951. That would then give us the results on the Table 3-2.

MR. FECKO: The one year and three year, the same criteria?

MR. SHAHROODY: Correct.

MR. FECKO: That is why if you just add another 1951 on the end, it doesn't really give you a fair -- you have to know you are protecting the minimum pool?

MR. SHAHROODY: You have to do that. And, of course, the computer doesn't have its own mind. The easiest is to duplicate 1951 twice.

MR. FECKO: Thanks.

MS. DIFFERDING: Just one follow-up question. For your Table 3-2, then, again for that cumulative three-year drought period where you're starting in May of '49 and looking at 36 consecutive months?

MR. SHAHROODY: I believe so. I don't have the basic data in front of me.

MS. DIFFERDING: So currently we don't have anything in the record or that has been identified as an exhibit that supports these numbers; it is just a summary of a model run you've done with some different

assumptions?

MR. SHAHROODY: That's correct.

MR. FECKO: I have one question for Ms. Baldridge, if I might. I understand there is no target number for the number of steelhead in the lower basin; is that correct?

MS. BALDRIDGE: That's correct.

MR. FECKO: That work is being done by?

MS. BALDRIDGE: That would be part of the recovery planning process that NOAA Fisheries is undertaking.

MR. FECKO: Do you have any idea -- perhaps it is better to ask them. Do you have any idea what the timeline is on that?

MS. BALDRIDGE: I don't.

MR. FECKO: Thanks.

H.O. SILVA: Okay, now you can do your redirect.

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REDIRECT EXAMINATION OF PANEL V

BY MR. WILKINSON

MR. WILKINSON: Mr. Shahroody, let me take up the last point first. Do you have those model runs at your office?

MR. SHAHROODY: For the?

MR. WILKINSON: For the table runs in your testimony.

MR. SHAHROODY: The Table 3-1, the model runs were provided as a source data, provided to the State Board staff. I believe that was transmitted via E-mail dated July 24th, 2003. But I believe your question is, which I need to answer, regarding Table 3-2 in my testimony. The answer is that we do have those outputs and we can provide it very easily and very quickly.

MR. WILKINSON: I am a little bit confused. What was provided to the staff by E-mail?

MR. SHAHROODY: What was provided to staff were yield of Cachuma Project on monthly basis for the period 1918 through 1993 for each of the EIR alternatives and also there is a compilation of shortage for the same period of the monthly basis which then you can extract from it the perfect forecast if you want to for 1949 through '51.

MR. WILKINSON: With the data that was transmitted to staff via E-mail, is it possible to reproduce Tables 3-1 and 3-2?

MR. SHAHROODY: It's possible to produce 3-1.

MR. WILKINSON: But not 3-2?

MR. SHAHROODY: Correct.

MR. WILKINSON: I guess the question I would have then for staff is: Can we provide this to you if you believe that it is important to have in the record? You've gotten Mr. Shahroody's conclusions. Do you want us to provide it in an exhibit format? We will provide copies to all the parties if they choose to have it. I didn't realize that was going to be a critical issue. We have the conclusions, but not the underlying data.

MS. DIFFERDING: It's your exhibit. I was just asking questions for the basis of it. Personally I don't feel the need to get that information.

Andy?

MR. FECKO: I actually think that we have enough. And now knowing what the assumption is, I think that gives me a fair idea of how it was produced. I don't really need to see it.

MR. WILKINSON: I just want to make sure that you feel on this point we have a complete record. I don't want to see a data gap later on.

MR. FECKO: I think the tables we have are adequate.

MR. WILKINSON: Mr. Gray, I would like to redirect a few questions to you. Much was made of an earlier Power Point slide that you had prepared that described the certain facilities of the County at this

park. Do you recall that?

DR. GRAY: Yes, I do.

MR. WILKINSON: I believe on that earlier slide you had listed as a critical facility both the boat launch ramp and marina; is that right?

DR. GRAY: That's correct.

MR. WILKINSON: And then you changed that; is that also correct?

DR. GRAY: That's correct.

MR. WILKINSON: And you listed the boat launch ramp and the marina as a key -- what was the term?

DR. GRAY: Noncritical.

MR. WILKINSON: -- noncritical facility. Do you have any recollection of how the County describes those facilities?

DR. GRAY: I believe the County characterizes the boat -- excuse me, the water treatment plant and the lift stations as critical facilities, and the boat launch as a noncritical facility.

MR. WILKINSON: Just to remove any doubt about that, I would like to show you the testimony of Terri Maus-Nisich which is one of the County's exhibits. I am referring to Page 3.

Would you be kind enough to indicate to the Board how the County characterizes the boat launch ramp and the

marina in its own testimony?

DR. GRAY: On Page 3 of the testimony the boat launch and the marina are listed as essential operational facilities.

MR. WILKINSON: Thank you.

I think in your testimony, Mr. Gray, you indicated that the boat launching facilities are a key noncritical facility. I think you were asked approximately how many boaters are there in a year at the county park facility.

Do you recall that question?

DR. GRAY: I don't believe I was asked how many boaters. I believe the question was is boating one of the major activities.

MR. WILKINSON: My recollection is that someone at least has suggested that maybe half of the visitors to the park are boaters?

DR. GRAY: It is my understanding that over half the visitors --

MR. WILKINSON: Over half?

DR. GRAY: Over half are fishing or boating activity.

MR. WILKINSON: Is there a fee charged to launch a boat at the park?

DR. GRAY: Yes, there is.

MR. WILKINSON: What is the fee?

DR. GRAY: I don't know that.

MR. WILKINSON: Would it be about $10; is that something that --

DR. GRAY: That would sound reasonable to me, but I don't know for a fact.

MR. WILKINSON: Let's assume for the sake of argument it is a $10 fee. If over half of 900,000 people -- let's do -- do you have any idea how much revenue that might generate in a year?

DR. GRAY: I can do the math.

MR. SELTZER: The attorney is testifying at this point, but maybe he can wait for the County.

H.O. SILVA: He is. I think it is speculation. You can get a lot of testimony in the next panel.

MR. WILKINSON: I will save those questions because I am real curious about some of the revenues that have been reported here.

You were asked also, and I think counsel was kind enough to lay this out for us, that there may be certain preconditions to the County constructing a new boat launch ramp at the park; is that correct?

DR. GRAY: That's correct.

MR. WILKINSON: I think you indicated that there might have to be permits that would have to be

acquired?

DR. GRAY: That's correct.

MR. WILKINSON: Also a new contract with the Bureau of Reclamation?

DR. GRAY: I don't know if that is prerequisite for the County to proceed.

MR. WILKINSON: Do you know whether the County has identified that as a prerequisite?

DR. GRAY: Yes, they have.

MR. WILKINSON: And also the availability of funding. Is that also a prerequisite?

DR. GRAY: Yes.

MR. WILKINSON: Do you have any idea what kinds of permits would be required to reconstruct the boat launch ramp?

DR. GRAY: I would be speculating, but I believe the County would have to issue some kind of land issue permit for that facility. I don't know if the state would have to issue a permit for boating and waterways for that type of facility. That is a possibility. And then there may be Reclamation approvals from the federal side for the facility.

MR. WILKINSON: Could there also be a Corps of Engineers' permit required?

DR. GRAY: I believe that is true, yes.

MR. WILKINSON: That could take some period of time, could it not, to require all those permits?

DR. GRAY: Well, I don't know about what period of time it is, but any permitting process is a little daunting.

MR. WILKINSON: You've had quite a bit of experience in acquiring permits?

DR. GRAY: It is more than a couple months.

MR. WILKINSON: Be fair to say that it might be closer to a couple of years?

DR. GRAY: I don't believe that is necessarily true.

MR. WILKINSON: Is your understanding of the County proposal that the two-year construction period that they have proposed for the boat launch ramp would commence after the permits are acquired, after a new contract is negotiated with the Bureau of Reclamation and after funding is acquired?

DR. GRAY: Based on my reading of the testimony, I am unclear about that matter. I can't answer it.

MR. WILKINSON: You are not under the impression, are you, that the County would try to do its construction of the boat launch ramp before those items are obtained?

DR. GRAY: No.

MR. WILKINSON: With respect to the issue of oak trees, Mr. Gray, do the County standards that have been talked about have any requirement for a final mitigation ratio?

DR. GRAY: My understanding of the County's requirements for oak tree mitigation is that they would like to achieve a one-to-one replacement of trees and that their initial planting ratio would account for mortality that would be expected over a long period of time. According to their ordinance, there would be a five year planting period and maintenance period, and after that time the trees would be self-sufficient but continued mortality, and that in their initial planting ratio there would be a one-to-one replacement achieved.

MR. WILKINSON: Is the one-to-one replacement ratio that the county apparently requires in its standards the same as the replacement ratio that is being proposed as part of the Fish Management Plan?

DR. GRAY: No. We are proposing an actual two-to-one final replacement of trees. That is our goal.

MR. WILKINSON: Our replacement ratio is about twice the final replacement ratio that the County standards provide for?

DR. GRAY: That is my understanding of the

County goal is one-to-one replacement. Our goal is two-to-one.

MR. WILKINSON: Thank you.

Dr. Hansen, you were asked about further studies and future studies that should be continued with regard to fishery resources on Santa Ynez. One question that occurred to me when that question was asked of you, do we have a vehicle in place at this time for carrying out future studies on Santa Ynez River fisheries?

DR. HANSEN: We do. We began in 1993 with the Santa Ynez Technical Advisory Committee and Consensus Committee providing that vehicle. That responsibility now lies with the Adaptive Management Committee. They are in process of conducting studies, so it is an ongoing process. It involves multiple stakeholders, multiple agencies and seems to be functioning well. So that would be the vehicle I would propose.

MR. WILKINSON: Ms. Baldridge, would you agree with that, that the AMC is the suitable vehicle for future studies on the Santa Ynez River fishery?

MS. BALDRIDGE: I would.

MR. WILKINSON: Can you tell me who is on the Adaptive Management Committee?

MS. BALDRIDGE: I believe David Young's presentation had a slide on who is involved in that. We

have Mary Larson from Department of Fish and Game. We have Matt McGoogin from NOAA Fisheries, Paul Bratovich representing Lompoc. Chuck Hansen for ID 1 and I represent CCRB. David Young chairs the committee and we have Bridget Fayhee from Fish & Wildlife Service.

MR. WILKINSON: So we have both federal fishery agencies, Department of Fish and Game, the Bureau of Reclamation and the stakeholders; is that correct?

MS. BALDRIDGE: Yes.

MR. WILKINSON: On the AMC.

Thank you.

I think you were asked a question about why is it important to complete the genetic studies first before we look at fish passage on the river. I am not sure that answer came through.

Can you give us -- maybe elaborate on your answer as to why it is important that the genetic studies be completed before we get into an examination of passage opportunities around the dam?

MS. BALDRIDGE: Some of the questions that have come up around the genetics are the fish above the Santa Ynez similar enough to fish below the Santa Ynez that we can intermix those populations. So we have been doing a number of genetic studies where we have the opportunity -- some of them started back in 1996, where we

had the opportunity to collect some fish from the Upper Santa Ynez River and have those genetics checked.

The technology for genetics work has improved from the time we were doing them, mitochondrial DNA work. Dr. Jennifer Nielson has been doing most of that genetics work for us on the Santa Ynez River. We have a couple of additional collections, so we are trying to understand the genetic structure above and below populations. The above populations have also had potentially other fish planted over the top of them which may have adversely affected the genetic structure in the areas where fishing planting has occurred.

So we are trying to understand what happened and what tributaries would be affected and how to overlay a map of populations based on their genetics in the river. We think it is important to understand that because if the area around Cachuma has been adversely affected by planting, we wouldn't want to take fish from below the river and put them up there so they could intermix with different populations.

MR. WILKINSON: Please complete your answer.

MS. BALDRIDGE: If the populations above Gibraltar where there has been less stocking are similar to populations down below, then it would make it much easier to reconnect those populations if they have similar

genetics and structure.

MR. WILKINSON: If the fish above the dam do not have a similar genetic structure to the steelhead that exist below the dam why is that a problem if we move some of those fish form below the dam above the dam?

MS. BALDRIDGE: Part of the work that has been done in a number of areas with listed species works very hard to preserve the genetic integrity of that species. We would end up mixing fish that aren't alike. It may not be what NOAA Fisheries would approve of. We don't want to create integration or adversely affect the genetic structure of listed populations by mixing it with other fishes that are different.

MR. WILKINSON: You were also asked a couple of questions about whether any of our studies have determined a viable population size, and I believe your answer was that, no, they have not.

Is that correct?

MS. BALDRIDGE: That's correct.

MR. WILKINSON: Is that the kind of determination that would ordinarily be developed as part of the recovery planning process that is the responsibility of NOAA Fisheries?

MS. BALDRIDGE: That is a vehicle for developing population estimates.

MR. WILKINSON: You were also asked whether certain specific measurable criteria have been developed, and I think population size was one of those.

Do you recall that question?

MS. BALDRIDGE: I do.

MR. WILKINSON: What was your answer with regard to that?

MS. BALDRIDGE: We have not developed a population size.

MR. WILKINSON: Do you know whether that is also the responsibility of NOAA Fisheries under the recovery planning process?

MS. BALDRIDGE: Under the recovery planning process they do develop what is called delisting criteria, which are population levels, and as part of that process the viable population is identified.

MR. WILKINSON: Let me show you, Ms. Baldridge, a copy of the Endangered Species Act. I would like you to read a portion of it. I am having you read a portion that is Section 4 of the Endangered Species Act. It is 4F relating to recovery plans.

MS. BALDRIDGE: Incorporate in each plan objective, measurable criteria. So I am reading B and then skipping down to I. Objective, measurable criteria which when met would result in a determination in

accordance with the provision of the section that the species be removed from the list.

MR. WILKINSON: Do you think viable population size or is it your understanding that the viable population size might be one of those objective, measurable criteria?

MS. BALDRIDGE: It might be, in my opinion.

MR. WILKINSON: Thank you.

Mr. Engblom, you were asked a question about how many adults have been captured over the period of years that we have been studying the river.

Do you recall that question?

MR. ENGBLOM: Yes, I do.

MR. WILKINSON: I think you had a fairly specific answer. Is it your view that we are capturing all of the fish, all of the adult fish that are moving up the Santa Ynez River?

MR. ENGBLOM: No, we are not capturing them all.

MR. WILKINSON: Are we capturing -- can you estimate what portion of the adult steelhead we might be capturing?

MR. ENGBLOM: It is difficult to simply base it on the hydrology and the use of traps and our need to pull them out of the river during some of the very high

flow events.

MR. WILKINSON: Thank you.

Ms. Baldridge, you were also asked about the issue of good condition, and I believe you identified a problem with exotic species and predation and results from those species?

MS. BALDRIDGE: Yes.

MR. WILKINSON: I think it was your testimony because of the exotics that exist in the river and the problem of predation as related to them that it might be difficult to meet the community level criteria?

MS. BALDRIDGE: My testimony was that because of the exotics that are there and the large amount of habitat that is available for them in the basin that the proportions between native fish populations and the exotics would never be in balance from a good condition perspective as defined in the paper Peter and I worked on.

MR. WILKINSON: Is it your view that more flow would be a way of removing the exotics from the lower river?

MS. BALDRIDGE: No.

MR. WILKINSON: How would you try to remove exotics if that becomes a requirement?

MS. BALDRIDGE: We have programs that have not always been successful in removing exotics through

trapping, electric fishing, different types of collection methods. There are times when you can try to interrupt their life history cycles, but since they -- some of their important life history overlap with what we are trying to do for native species.

MR. WILKINSON: Would Rotenone be a possibility for removing exotics?

MS. BALDRIDGE: It would be if you wanted to remove everything.

MR. WILKINSON: We tried that in Lake Davis, didn't we? Not we, the state.

MS. BALDRIDGE: No comment.

MR. WILKINSON: Was that from the Department of Fish and Game?

MR. BRANCH: Objection.

H.O. SILVA: Sustained.

MR. WILKINSON: Mr. Jackson, do you know whether flows have recently been measured in the Santa Ynez River?

MR. JACKSON: Yes, they have.

MR. WILKINSON: Can you tell me by whom and what those measurements showed?

MR. JACKSON: My understanding is that ID No. 1 does have a cooperative relationship with one of the landowners with property on the vicinity of the river.

And we have recently requested that they go out and try to help assist us in developing some correlations between releases from the dam and flows in the river, in particular in the vicinity of Highway 154 due to the subsurface flow when the water goes down and pops up in other places as well as beavers that have recently been found in the stream causing disruption.

We try to compare -- before we found out that we were on the private landowner's property to compare these measurements at Highway 154 and the dam, we found it to be so far about a two-to-one ratio. So we are releasing historically eight cfs. We are seeing four cfs show up at 154 on the surface. So currently we were releasing about six cfs last week and in an area about three-tenths of a mile upstream from Highway 154, I think we received about 3.7 cfs in the river. If the two-to-one correlation holds and our target is 1.5, then theoretically we can release about approximately three cfs from the dam and see one and a half cfs show up at 154.

However, because of the uncertainty, we are keeping the release a little higher now to illustrate our commitment to meet the target flow.

MR. WILKINSON: In fact, the releases are about double what your theoretical calculation would require them to be?

MR. JACKSON: Yes.

MR. WILKINSON: Mr. Young, for you, what is the purpose of the target flows with regard to the management of the reach?

MR. YOUNG: The target flows are to basically verify the habitat between Bradbury Dam and Highway 154. The intent for the target flows -- the intent of the biological assessment that was prepared was to provide habitat for fish between Bradbury Dam and Highway 154.

MR. WILKINSON: It was not simply to provide habitat at the 154 Bridge, it was throughout the entire reach?

MR. YOUNG: Correct.

MR. WILKINSON: Do you have any information to indicate that, in fact, flows of 1.5 cfs were greater or occurring throughout the management reach?

MR. YOUNG: Yes.

MR. WILKINSON: And what does that information show?

MR. YOUNG: It shows that when -- the information indicates there is nearly a two-to-one relationship between the release from Bradbury Dam and a part of having measurement in the main stem river near San Lucas Ranch. I believe that is the location that Mr. Jackson referred to.

MR. WILKINSON: Was it your opinion, then, that flows meeting the Biological Opinion requirement are being provided throughout the management reach with the exception of the measuring point at the 154 Bridge?

Mr. YOUNG: That is my opinion.

MR. WILKINSON: You were asked a question, Mr. Young, whether the Biological provides for target flows below the 154 Bridge. I was looking at the Biological Opinion when you were answering. I would like to show you a copy of it. I am referring you to Page 7. I wonder if you can take a look at the material that appears roughly in the middle of the page.

Does that indicate that, in fact, there are flows that are to be provided below Highway 154? This is in the pre -- I guess it was called the interim period.

MR. YOUNG: What I am reading is a list of priorities for releases. Would you like me to read this?

MR. WILKINSON: Please. Yes, I would.

MR. YOUNG: First priority for flow enhancement will be Hilton Creek. Second priority will be the main stem between Hilton Creek and Highway 154. Third priority will be the area between Bradbury Dam and Hilton Creek confluence, including the Stilling Basin and Long Pool. Fourth priority will be the area downstream from Highway 154 to the Solvang area.

MR. WILKINSON: Would you read the last one again?

MR. YOUNG: Fourth priority will be the area downstream from 154 to the Solvang area.

MR. WILKINSON: Thank you.

I think that is all I have.

Thank you.

H.O. SILVA: Why don't we -- I need to take a short break. Why don't we come back right at ten after.

(Break taken.)

H.O. SILVA: Recross.

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RECROSS-EXAMINATION OF PANEL V

BY SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

BY MR. CONANT

MR. CONANT: I will direct this to Ms. Baldridge and Mr. Young.

During the process of developing the Fish Management Plan, did Department of Fish and Game ever indicate to you that there was a violation of 5937?

H.O. SILVA: Can you speak into the mike. I'm having a hard time hearing.

MR. CONANT: Let me try it again.

During the preparation of the Fish Management Plan, did the Department of Fish and Game ever advise that there

was a violation of Section 5937 or anything to that effect?

MS. BALDRIDGE: Not that I recall.

MR. CONANT: Dr. Hansen, during cross-examination and at other times when this panel has been in place there has been discussion and reference to the paper that Dr. Moyle and Ms. Baldridge authored. Is the definition in that paper of good conditions universally accepted by fishery biologists?

DR. HANSEN: No. I think the paper Peter and Jean wrote provides insight into their thinking regarding the issue of good condition, but there are other criteria that biologists also use to evaluate the condition of populations. And I site an example in Dennis McEwan's testimony. He emphasizes the importance of anadromy and the ability of steelhead to successfully migrate from the freshwater to the marine environments as another indicator of whether fish in a watershed are in good condition. That is not included in the definition by Peter Moyle.

So there are other definitions of watersheds specific to a certain extent. We use the information from Peter and Jean's paper as a guideline, but it is not the absolute answer to that specific issue.

MR. CONANT: Thank you.

Last question to Mr. Young. Is the Bureau of

Reclamation in discussions with NOAA regarding movement of the measurement location at 154?

MR. YOUNG: Yes.

MR. CONANT: Thank you.

H.O. SILVA: Thank you.

City of Lompoc?

MR. MOONEY: No.

H.O. SILVA: Santa Barbara?

MR. SELTZER: No questionS.

H.O. SILVA: Fish and Game.

MR. BRANCH: Yes.

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RECROSS-EXAMINATION OF PANEL V

BY DEPARTMENT OF FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Going to avoid the subject at Lake Davis altogether.

Mr. Hansen, you talked on redirect about how a vehicle is in place to move into the future with some fishery studies along with Fish and Game and some other entities, correct?

DR. HANSEN: That is correct.

MR. BRANCH: Currently are there any mandatory deadlines to complete these studies?

DR. HANSEN: Let me refer to David. The

deadlines would be as part of the schedule that might be outlined in the Biological Opinion.

MR. YOUNG: Would you repeat the question again, please.

MR. BRANCH: Well, Mr. Hansen on redirect spoke about a vehicle being in place to move into the future with fisheries studies, and then I said are there currently any mandatory deadlines to complete those studies.

MR. YOUNG: There are --

MR. BRANCH: I am talking not only about the Biological Opinion, but about the Fish Management Plan and the Adaptive Management Committee, et cetera, as a whole.

MR. YOUNG: I am not aware of deadlines in the Fish Management Plan.

MR. BRANCH: Might it perhaps be useful to have an outside agency, like the State Water Resources Control Board, set deadlines to report back with data and determine the success of the Fish Management Plan, perhaps?

MR. YOUNG: I will refer that to Michael Jackson.

MR. JACKSON: Would you -- was your question, Mr. Branch, whether or not the State Board should put a term and condition on the permit for meeting a specific

deadline or schedule?

MR. BRANCH: To determine the success of the measures that are proposed to the Board. And Fish and Game is proposing those as well as a member of the committee to create the Fish Management Plan. We'd like to see if this succeeds.

MR. JACKSON: The complication with that, as I see it, is, one, the Bureau of Reclamation holds the permit. The steelhead was listed by the National Marine Fishery Service. We look to them a lot to provide information on the success and coming up with these definitions of recovery. So putting a term and condition on us, I don't know how that makes NMFS -- forces them to expedite their schedule.

MR. BRANCH: I suppose we will hear from them later on in this proceeding.

Mr. Wilkinson asked a question on redirect, and correct me if I am rephrasing this wrong. Basically saying, drawing an answer out of, I think it was, Ms. Baldridge, that a recovery plan by NOAA Fisheries would determine what a viable population size is and perhaps sets some measurable criteria for restoring steelhead?

MS. BALDRIDGE: Yes, I recall his question.

MR. BRANCH: Are you saying it is a good idea -- let me back up a second.

Is there a recovery plan currently in place?

MS. BALDRIDGE: There is not, but I understand NOAA Fisheries is in the process of developing one.

MR. BRANCH: Once they develop a recovery plan, to the best of your knowledge, based on your extensive background working on water issues and, I assume, the Endangered Species Act, are you aware of whether recovery plans are mandatory or not?

MS. BALDRIDGE: I am aware that recovery plans are not mandatory, but they are -- when Section 7 consultations are done, you need to comply with recovery plans.

MR. BRANCH: Perhaps in the meantime, before this goes into effect, it would be valuable to determine viable population size or measurable criteria as a goal in the interim?

MS. BALDRIDGE: I think it would be helpful to have a viable population size. That would probably be one of the first tasks the recovery team undertakes.

MR. BRANCH: Making a determination of what that is?

MS. BALDRIDGE: What the viable population is. It is important to look at the ESU perspective.

MR. BRANCH: Thank you very much.

H.O. SILVA: NOAA?

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RECROSS-EXAMINATION OF PANEL V

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Just a couple quick questions. Ms. Baldridge, can fish that are currently above Bradbury Dam pass downstream of Bradbury Dam?

MS. BALDRIDGE: They can in a spill event.

MR. KEIFER: They can in a spill event?

MS. BALDRIDGE: Right.

MR. KEIFER: In case of a spill event, when some fish that are already above Bradbury spill downstream, they are in the same environment and intermix with the listed steelhead that are below the dam?

MS. BALDRIDGE: That is correct.

MR. KEIFER: So fist passage would not allow something to happen that doesn't already happen?

MS. BALDRIDGE: I think it would depend on the degree. I agree it doesn't happen --

MR. KEIFER: That is fine. I understand this is a very complicated question, lots of degrees, but the question is: Fish passage isn't going to allow something to happen that doesn't already happen?

MS. BALDRIDGE: That is correct.

MR. KEIFER: Thank you.

With respect to Section 7 consultations, the answer that you just gave to Mr. Branch, and I know you have a great deal of experience with the Endangered Species Act and Section 7 consultations, and I will understand if you decline to answer this question. You stated, if I am correct, that if there is a recovery plan out there that has been issued under Section 4 of the act, then during a Section 7 consultation, the action agency is required to comply or to implement that recovery plan.

Is that correct?

MS. BALDRIDGE: No. If that is what you understood, that is not what I said. If there is a recovery plan in place, then Section 7 consultation has to be consistent with a recovery plan.

MR. KEIFER: Do you understand that -- is it your understanding and with your experience on the Endangered Species Act, that during a Section 7 consultation there is one question that is answered, and that is the question is whether or not the proposed action by the federal action agency jeopardizes the continued existence of the listed species?

MS. BALDRIDGE: I understood that that is the question.

MR. KEIFER: Does --

MR. WILKINSON: I'm going to object to that. That was clearly not a finished answer. I would like to have the witness be allowed to finish her answer.

MR. KEIFER: That answer was fully to my question.

MR. WILKINSON: She was not finished with her answer. This has been a pattern I have noticed.

H.O. SILVA: I think -- if you are satisfied with the answer, I'm okay with it. Again, as I told the panel members, answer the question. If it is not enough, then the attorney can ask more questions. I am satisfied with the answer, too, so go ahead.

MR. KEIFER: So under Section 4 recovery plan, which you read a portion of Section 4 to the Board, does a Section 4 recovery plan address strictly the question of jeopardy or nonjeopardy?

MS. BALDRIDGE: I don't think the recovery plan addresses the jeopardy question.

MR. KEIFER: Fair enough.

Thank you.

H.O. SILVA: Cal Trout?

MS. KRAUS: No questions.

H.O. SILVA: No questions? Okay.

Five minutes here before 4:30.

Do you have a comment?

MR. WILKINSON: Just have one question on reredirect. It came up for the first time on recross and it was the question about whether or not the mandatory deadlines imposed by the Board is something that would encourage recovery.

MR. BRANCH: Mr. Silva, recross is the end of the line, as far as I know.

H.O. SILVA: I agree. I think we have covered enough ground on this already.

I'm sorry, you have rebuttal, too.

MR. WILKINSON: We will deal with it there.

H.O. SILVA: Let's take -- nobody move -- five minutes to change the panel, to get Lompoc. Lompoc is next, to get their panel up here and try to get --

While we are changing the panel, Mr. Wilkinson, can we get also any kind of evidence?

MR. WILKINSON: I would like to move that in. I guess we are done.

H.O. SILVA: Both the Bureau and Solvang? We have a lot of parties right now. We'll get that straightened out.

MR. WILKINSON: Mr. Silva, at this point Cachuma Member Units would move into evidence Exhibits 200 through 246.

H.O. SILVA: Santa Ynez.

MR. PALMER: Bureau of Reclamation would like to --

H.O. SILVA: Can I have everybody quiet. We are trying to listen to --

MR. PALMER: -- admit the exhibits. They were numbered -- DOI-1 through 4 were previously submitted in Phase 1. We referenced those here today. DOI-5 through 36, with the exception of -- Bureau of Reclamation is withdrawing Exhibit 23 because that's been submitted by CCRB and it would be a duplication. We are going to withdraw that. Other than that, we request -- we have added Exhibit 15 and I've included that as well. That is the Power Point of Mr. Young. We would like to have those admitted into evidence.

H.O. SILVA: Okay.

Santa Ynez.

MR. CONANT: Yes. For Santa Ynez Water Conservation District I would move SRWCSD Exhibits 1 through 4, and also on behalf of Solvang, since their attorney is present, I would move on behalf of Solvang Exhibit 1.

H.O. SILVA: Thank you.

MS. KRAUS: I just had one concern that did come up earlier about the record, the unpublished data, and the Member Units Exhibit 226. And it sounds that as

the record now stands that that unpublished data is not part of the record, and so I would object to including the portions of Exhibit 226 that rely on the unpublished data and ask that those statements be excluded pursuant to the supplement hearing notice enclosure one, Section 4D, which states that exhibits that rely on unpublished technical documents will be excluded unless the unpublished technical documents are admitted as exhibits.

H.O. SILVA: Mr. Wilkinson.

MR. WILKINSON: There are two references, which are the two?

MS. KRAUS: I will clarify the page numbers. Page 24 and Page 43 through 44.

MR. WILKINSON: Just a moment.

MS. KRAUS: Page 24 and Page 43 through 44 are the locations where the conclusions are made relying on the unpublished data.

MR. WILKINSON: My understanding, Mr. Silva, is that that data has already been provided to EDC by Mr. Engblom, and he testified to that. It was on a CD that was sent to them well before the hearing. It is not as though they have not had an opportunity to see the data. It is in their possession.

MS. KRAUS: Can I respond?

H.O. SILVA: Yes, please.

MS. KRAUS: I think it is not just a question of whether the parties have seen the information, but the Board decision is going to be based on a record. And as it stands right now, the record does not include those unpublished documents.

MR. WILKINSON: Mr. Silva, since the data is already on a CD-ROM, we can certainly provide it to the Board. I don't see that is going to be a problem.

H.O. SILVA: That is what I was thinking.

MS. DIFFERDING: This is the data that is in the compilation reports?

MR. WILKINSON: No. It is the data that Mr. Engblom has collected that has not yet been published, is my understanding.

MS. DIFFERDING: Didn't you say that that data was included in the compilation reports?

MR. WILKINSON: I guess the answer would be to have Mr. Engblom --

MR. ENGBLOM: From 2000, 2001, 2002 up to 2003 has been presented in report form to NMFS as parts of the annual reporting requirements. It was provided to EDC and it hasn't been synthesized into a published report yet.

MS. DIFFERDING: This is not data included in the SYRTAC compilation reports that are referenced in the Board Draft EIR, this is different?

MR. ENGBLOM: I believe so. Yeah, it's been provided to the folks, though.

MR. WILKINSON: Is it the most recent data collected, Scott?

MR. ENGBLOM: Yes.

MR. WILKINSON: That is why it is probably not in the compilation report at this point. If the Board feels that it needs it, we can provide it on a CD-ROM.

H.O. SILVA: Would you mind if we sleep on this and attack it first thing in the morning?

MR. WILKINSON: That would be fine.

H.O. SILVA: Great. Thank you.

Let's hold approval of the evidence till tomorrow. Submit everything but 226. Is that okay?

MR. WILKINSON: That is fine.

MS. KRAUS: Yes.

H.O. SILVA: All right. City of Lompoc.

MR. MOONEY: Good afternoon. My name is Donald Mooney, on behalf of the City of Lompoc. As a kind of housekeeping matter, Mr. Durbin was not here yesterday when the witnesses were sworn in, so I just wanted to make sure.

(Oath administered by H.O. Silva.)

MR. MOONEY: First, on behalf of the City I have a brief opening statement and then we will have

testimony from Gary Keefe and Timothy Durbin.

The City of Lompoc was an original participant to these proceedings when the Bureau of Reclamation first sought to appropriate water from the Santa Ynez River for the Cachuma Project. Lompoc's concern then, as well as now, was that the operation of Cachuma Project could have an impact on the groundwater basin and Lompoc's rights, Lompoc's water rights. In an effort to protect its downstream water rights, Lompoc has participated in State Board's proceedings regarding Decision 886, Water Rights Orders 73-37, 89-18 and 94-5. Each of these proceedings were for the purpose of developing an operating regime for the Cachuma Project that protected downstream water rights as required by State Board Decision 886.

The City of Lompoc's purpose and goal in these proceedings, as in previous proceedings in the Cachuma Project, has been to protect its downstream water rights as to quantity and quality. When Lompoc started this process many years ago, Lompoc's primary concern regarding the Cachuma Project was to potential impact to groundwater recharge and that the project would result in a reduction in groundwater level in the Lompoc region.

In the last ten years Lompoc, through its consulting groundwater hydrologists, Timothy Durbin and Jeffrey Lefkoff, conducted an extensive investigation of the

current and past operations of the Cachuma Project and project's relationship to the groundwater basin in the Lompoc Plain. At the request of the State Board staff, Lompoc provided a copy of the model to the State Board during the development of the draft impact report for these proceedings. As will be discussed in Gary Keefe's and Tim Durbin's testimony, Lompoc's groundwater model demonstrates the impact of the Cachuma Project on the groundwater basin and the Lompoc Plain and on Lompoc's groundwater wells.

Their testimony will discuss briefly the conclusion that under the current operating scenario of the project the Lompoc Plain is not in overdraft but that the Cachuma Project has resulted in an impact to the groundwater quality of the groundwater basin. The impact to the groundwater quality is the result of an increase in the dissolved solids in water that recharges the groundwater basin. Despite these conclusions regarding the project's historic impacts to groundwater quality, Lompoc's modeling include the current operating regime that includes downstream water releases under Water Right Order 89-18 and the commingling of water imported by the Central Coast Water Authority that the groundwater quality in the eastern portion of Lompoc basin will return to no project condition.

However, any change in the downstream release program under 1889, including a change in the commingling of the Central Coast Water Authority's imported water would result in the impact continuing for a number of years or indefinitely.

As a signatory to the Settlement Agreement, Lompoc's supports the modification to Reclamation's water rights permits in accordance with provisions in the Settlement Agreement, specifically Paragraphs 1.3 and 1.4, including Exhibits B and C. The Settlement Agreement that has been presented to the Board brings to closure a water rights dispute that has lasted for nearly 60 years.

As Lompoc has maintained throughout the long history of this project, Lompoc's sole objective is to ensure that the Cachuma Project not adversely impact Lompoc's water rights, neither the quality nor quantity. So the Settlement Agreement allows Lompoc to achieve its objective. Modification of Reclamation's water rights permits as provided in the Settlement Agreement will adequately protect Lompoc's senior downstream water rights and not adversely affect water quality.

Mr. Keefe will also testify to another important aspect of the Settlement Agreement, which is the Member Units support of Reclamation's modified storm operations for the project. While modified storm operations have

already been implemented and do not require the Board's approval, the Settlement Agreement ensures the Member Units' continued support of the modified storm operations. The winter storms in February 1998 demonstrated the importance of having procedures in place ahead of time to protect life and property downstream.

In a series of large -- as a series of large winter storms approach the South Coast and with the Cachuma Reservoir full, there is a great deal of uncertainty as to whether Reclamation could, would release water from the Cachuma Reservoir before the arrival of the storms. These prereleases were key in order to provide capacity in the reservoir to allow capacity to capture a portion of the flood flows from these storms.

The County of Lompoc and parent district encourage Reclamation to make releases in order to provide capacity in the reservoir to capture the imminent flood flows. Needless to say, there were some tense moments while these parties attempted to determine when the prereleases would be made. The modified storm operations now provide a process for making important decisions in a timely and orderly manner. The decision making process takes into account protection of downstream interests and protection of the Member Units' water supply. These operations provide residents of Lompoc and other downstream residents

important flood protection.

Now we will have the testimony from Mr. Keefe and Mr. Durbin.

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DIRECT EXAMINATION OF THE CITY OF LOMPOC

BY MR. MOONEY

MR. MOONEY: Mr. Keefe, is Lompoc Exhibit 1 a true and correct copy of your testimony?

MR. KEEFE: Yes, it is.

MR. MOONEY: Is Lompoc Exhibit 2 a true and correct copy of your statement of qualifications?

MR. KEEFE: Yes, it is.

MR. MOONEY: Could you please summarize your testimony.

MR. KEEFE: Good afternoon, Mr. Silva, ladies and gentlemen. I am the City Administrator of the City of Lompoc. I have served in position since August of 2002. This month marks my 27th anniversary with the City of Lompoc. I started out in their wastewater operation. I served as the City's Utilities Director from 1994 until my appointment as City Administrator in 2002. Before that I was the City of Lompoc Water Resources Manager from 1983 to 1994.

Throughout my tenure as Utilities Director and Power Resources Manager, I served as the City's

primary contact in activities that related to our water resources, and I have become familiar with Lompoc's groundwater pumping system, the history of Lompoc's dispute over the operation of the Cachuma Project and impacts that the Cachuma Project has on the Lompoc groundwater basin. I have also been involved in the negotiations and settlement discussions that resolved Lompoc's protest to Reclamation's operation of the Cachuma Project and as a party to the December 2002 Settlement Agreement between the City and other interested parties.

As noted, Lompoc's been involved in trying to protect our water rights and water quality for well over 50 years. Lompoc's concern is that the operation could impact our water quantity as well as our water quality. We have established a strong record on that fact, going back before WR 73-37 was issued and along every step of the way. All based on our understanding of State Board Decision 886.

On December 17th, 2002, Lompoc's City Council approved the Settlement Agreement between Cachuma Conservation Release Board, the Santa Ynez River Water Conservation District and ID No. 1 and the City relating to the operation of the Cachuma Project. We've been referring to all that as the Settlement Agreement here. And this agreement meets Lompoc's long-term objective that

the operation of the Cachuma Project does not adversely affect Lompoc's groundwater rights.

Additionally, the Settlement Agreement provides for the settling parties' support of Reclamation's adoption and continued use of the modified winter storm operations as described in the USBR technical memorandum that's identified in my exhibit. The importance of this added protection to Lompoc and its residents cannot be overstated. As our attorney noted, there was a very tense event during the last event, the last potential flooding that we had there, and that's been a long-term occurrence on Lompoc, and this part of the Settlement Agreement means a lot to the people of the City of Lompoc.

In an August 13th letter from the State Water Resources Control Board the Board identified three key issues that concern the City of Lompoc and its downstream groundwater rights. I would like to address and respond to those key issues now.

The response to Key Issue No. 4 is that for nearly the last ten years Lompoc has asserted that the historic operation of the Cachuma Project injured the City of Lompoc in changes in water quality resulting from the operation of the project, and the quantity as well in a manner because the project was operated in a manner that impairs senior downstream water rights.

As for what permit terms should be included in Reclamation's water rights permits to protect Lompoc downstream water rights, the modification of Reclamation's water rights permits is consistent with the Settlement Agreement, specifically Paragraph 1.3 and 1.4, Exhibit B, and the technical amendments in Exhibit C, along with the other provisions of the Settlement Agreement will protect Lompoc's downstream senior water rights from injury due to changes in water quality.

Our response to Key Issue 5 is that based upon the investigation, modeling and analysis completed by Lompoc's consultant Tim J. Durbin and Dr. Jeff Lefkoff, the current operation of the Cachuma Project under Water Rights Order No. 89-18 has not reduced the quantity of water available to Lompoc, a senior downstream water right holder.

Our response to Key Issue No. 6. As a signatory to the Settlement Agreement, Lompoc supports the modification of Reclamation's water rights permits in accordance with provisions of the Settlement Agreement, specifically Paragraphs 1.3 and 1.4, including Exhibits B and C.

The City of Lompoc was an original participant in these proceedings in the 1950s when the Bureau of Reclamation first sought to appropriate water from the Santa Ynez River for the Cachuma Project. During the original water rights permitting process for the Cachuma

Project, Lompoc and others filed protest to Reclamation's application, expressing concern over harm to downstream users.

In a response Reclamation committed not to export water that will interfere with the natural percolation of water below the Cachuma Project, and based on this commitment the State Water Board imposed a condition that the Cachuma Project not reduce natural recharge of groundwater from the Santa Ynez River. This is contained in Decision 886. Lompoc's concern then as well as now is that we not be impacted by the operation of Cachuma. In an effort to protect its downstream water rights Lompoc has continued to participate in State Board's subsequent proceedings that resulted in Water Rights Order WR 73-37, 89-18 and 94-5. Each of these proceedings was for the purpose of developing an operating regime for the Cachuma Project that would protect its downstream water rights as required in State Board Decision 886.

Lompoc owns and operates nine domestic water supply wells that are all located within the boundaries of the City of Lompoc. The wells are of varying capacity and they vary between 250 and 2,000 gallons per minute. This groundwater from the wells is Lompoc's sole source of water. Lompoc's domestic water supply system also includes a water treatment plant and facilities for the

delivery of potable water supplies to residents. Lompoc provides water to approximately 39,000 people. Lompoc wells withdraw groundwater from the main zone of the upper aquifer in the eastern Lompoc Plain.

All of the water produced by Lompoc's domestic water supply wells is used within Lompoc's water service area. Lompoc water service area is wholly within the Santa Ynez River Watershed. Lompoc does not export, transport or remove any water pumped from its domestic water supply wells in the Santa Ynez River watershed.

Lompoc's water use has averaged approximately 5,700 acre-feet of water per year since 1989. Despite the fact that we had a continuing increase in population these last 14 years, Lompoc's water use has remained relatively stable due to the implementation of conservation measures and public awareness. Lompoc has metered water since 1925. At that time we also banned agricultural use within the Lompoc water system. That kind of began our efforts at water conservation. We have what we believe to be a very low per capita water consumption before the drought that ended in 1991. Our average water consumption was about 124 to 128 gallons per person per day. The biggest reason for that is that we have a very mild climate in Lompoc and we've had very, very expensive water.

Why is Lompoc water expensive? It is expensive

because we were forced in 1963 to build a rather exotic treatment system because our groundwater has such a high mineral content. We partially demineralize and partially soften the water that we deliver to our customers, and we have been doing that since '63 because we had to do that to comply with state health standards. So it's true, the CCRB manager, Kate Rees, yesterday talked about how price has quite a bit to do with how much water people use. Our conservation efforts before that were mostly driven by price.

Since 1991, however, we have managed to stabilize our water use because we have established what we call a zero impact toilet retrofit program. In order to build something in Lompoc now you must contribute or retrofit existing water use that is in the city to completely offset your water use. So today if you were to come to the city of Lompoc and build a house, you would either retrofit six existing houses or pay to have those six houses retrofitted. It does offset the water use, and I think that our water supply data proves that that function works.

In addition to that, we have various waste ordinances. We established a drought tolerant garden. We also provide recharge for our regional wastewater treatment plant, and most of the water that the city

delivers to our customers is recharged back into the Santa Ynez River.

Lompoc, as I said before, the purpose and goal in this proceeding as in previous proceedings is to protect our quantity and quality and our downstream water rights. Since Lompoc initiated this process many years ago, Lompoc's primary concern regarding the project was the potential impact to our recharge that results in reduction of our groundwater levels in the Lompoc region.

Over the last ten years Lompoc, through its consultant groundwater hydrologists Timothy Durbin and Dr. Jeff Lefkoff, has conducted an intensive investigation of the current and past operation of the Cachuma Project and the project's relationship with the groundwater basin in Lompoc. Lompoc consultants have prepared a detail groundwater model that demonstrates the Cachuma Project's historic impact on groundwater basin in the Lompoc Plain and on Lompoc's groundwater wells. Lompoc has spent in excess of one and a million dollars for this investigation and modeling, and a copy of the disk that used to run this model has been provided to State Board.

Through Mr. Durbin's and Dr. Lefkoff's investigation and modeling, Lompoc determined that under the historic operating scenario of the project, the Lompoc Plain is not in overdraft, but that Cachuma Project has resulted in an

adverse impact to the groundwater quality of groundwater basins. The modeling showed that historically the operation of the Cachuma project significantly reduced the quality of groundwater in the eastern Lompoc Plain and groundwater basin and significantly reduced the quantity of the water recharged to the basin from the Santa Ynez River. The dissolved solids and salinity concentrations of recharge water in the Lompoc Plain are determined primarily by the dissolved solid and salinity concentrations of the water entering the river -- valley at the Lompoc narrows.

The historical operations of the Cachuma Project increased the salinity of the Santa Ynez River stream flows up the Narrows in two significant ways. One, the water that was held behind the reservoir evaporated in the reservoir, which increased the dissolved solid concentration in the outflow. And two, diversions to the South Coast through Tecolote Tunnel and diversions to ID 1 through the dams outlet works decreased the average outflow from the reservoir which increased the relative contributions of tributary inflows between Bradbury Dam and the Narrows to the total flow at the Narrows. These tributary inflows have a higher average dissolved solids of salt concentration at inflows above Bradbury Dam.

As a result, these two factors, the operation of the

Cachuma Project contributes to the salinization of the groundwater in the Lompoc groundwater basin that the city of Lompoc extracts.

The excessive salinity in Lompoc's water supply causes infrastructural water supply problems. Even after expensive treatment, Lompoc's water supply is relative high in salinity. The groundwater salinity resulting from the operation of the Cachuma Project taxes our water supply system and our treatment capabilities. The state of California requires drinking water supplies have dissolved solid concentrations below 1,000 milligrams per liter. All Lompoc's wells exceed the state limit for drinking water for concentrations of dissolved solids, making costly treatment necessary in order to comply with state standards. Excessive groundwater salinity partially is a result of the operation of the Cachuma Project causes infrastructural and water supply problems that impair our water supply and treatment processes.

Due to the operation of the Cachuma Project, Lompoc has incurred an incremental increase in the cost of its water supply treatment. An increase in the salinity of the groundwater pumped to the water plant results in an increased cost to treatment. This additional cost is directly related to the consumption of additional chemicals used to reduce the salinity of the treated water

below that required by the State of California and acceptable to customers of Lompoc's water supply system.

Our wastewater treatment plant has a discharge requirement imposed by the State Board for total dissolved solids of less than 1,100 milligrams per liter. That is a better quality than any of our domestic water supply wells. Our very best well provides water that is approximately 1,200 milligrams per liter, and my worst well 2,200 milligrams per liter. So the treatment trend that Lompoc employs actually reduces the salt in the water supply, and what we end up discharging improves water quality in the vicinity of the discharge.

The current operating regime for Cachuma Project does not negatively impact the Lompoc groundwater plain and the Lompoc senior downstream water rights. The modeling conducted by our consultants have concluded that under the current operating regime that includes the downstream water rights releases as required under WR 89-18 and the commingling of water from the State Water Project imported by the Central Coastal Water Authority shows that it will return to the groundwater basin to a no-project condition in terms of water quality within the foreseeable future. However, any change in the downstream release program under Water Rights Order WR 89-18 or a change in the commingling of CCWA's imported water will

result in an adverse water quality impact that may continue for a number of years or indefinitely. Thus, the continuation of the current operating regime under WR 89-18, including commingling of water from the State Water Project should ensure that the Cachuma Project does not impair Lompoc's senior groundwater rights.

Over the last ten years, Lompoc and other interested parties have engaged in several efforts to resolve the dispute over the impacts to the Lompoc groundwater basin caused by the operation of the Cachuma Project. The City of Lompoc and the Cachuma Project authority entered in 1993 into an agreement to establish for a process for negotiating a resolution of our long-standing dispute. After a number of meetings, discussions and efforts the parties were unable to reach an agreement. Because there had been no progress in 1995, Lompoc did renew the agreement. As continuing efforts to bring about a mutual resolution of water issues in '97, Lompoc and Santa Ynez River Water Conservation District and the Cachuma Member Units hired an independent third party to evaluate various models for the Santa Ynez River. We had intended to achieve a consensus opinion through that process. Unfortunately, we were not able to reach a consensus as to those conclusions. I guess we did reach a conclusion that that process wouldn't work and we moved on.

In 1999 the interested parties formed an ad hoc committee group that consisted of two elected officials from each of our agencies. City of Lompoc, Santa Ynez River Water Conservation District, Improvement District No. 1 and Cachuma Conservation Release Board. The ad hoc committee also included the general manager from all four of our entities, and the group met many times between 1999 and 2002 to discuss and explore each other's position. The efforts resulted in the execution of the Settlement Agreement that is before you now and is the subject of Key Issue No. 6. In December 2002, the City Council of the City of Lompoc approved the Settlement Agreement after many years of observing negotiations, evaluations and several lawsuits. Lompoc and other interested parties agreed to support the current operating regime, Order WR 89-18.

As Lompoc has maintained throughout our long history of the project, our sole objective is to ensure the Cachuma Project not adversely impact Lompoc's groundwater rights in either quantity or quality. Lompoc concluded that the historic operation of the Cachuma Project impacted the quality and recharge of the Lompoc groundwater basin. However, under the current operating regime, which consists of downstream water rights releases pursuant to WR 89-18 and CCWA's commingling of water from

the State Water Project in the reservoir, Lompoc has concluded that a modification of Reclamation's water rights permits, as provided in the Settlement Agreement and the other provisions in the Settlement Agreement, will adequately protect Lompoc's senior downstream water rights and will not significantly adversely affect water quality in Lompoc Plain groundwater basin.

Of critical importance to Lompoc is the modified storm operations that are an aspect contained in the Settlement Agreement. In the past Reclamation staff has asserted that the Cachuma Project is a water supply project, and not an authorized flood control project. As such, Reclamation's historic operation of its project has been to maximize water supply and storage of water without much planning for providing downstream flood protection.

In 1998 this issue became critical, and because of Reclamation's actions and our involvement in prereleases that were made, the City of Lompoc was spared some flooding. And that I think proved to all of us that the prereleases that are considered in the storm operations agreement worked very well.

Reclamation has agreed at this point to continue on making those, that type of an operation. And clearly to us if Reclamation had failed to provide immediate prereleases during that storm event, we would have

incurred severe property damage and/or loss of life.

The State Water Resource Control Board Draft EIR for these water rights hearings identifies two alternatives in an effort to address Cachuma Project's impact to water quality and Lompoc groundwater basin, specifically Alternatives 4A and 4B, which require Lompoc to accept water from the State Water Project. As such, neither alternative is acceptable to Lompoc. Alternatives 4A and 4B in the Draft EIR provide for the delivery of water from the State Water Project to the City of Lompoc.

Both versions of Alternative 4 would require the City of Lompoc to approve and accept State Water Project water as part of its domestic water supply. Both of these alternatives constitute an effort to impose a new water supply on Lompoc even though Lompoc's voters have twice rejected the delivery of State Water Project water. Lompoc voters first rejected State Water Project in 1979 when they voted not to participate in the extension of the pipeline to Santa Barbara County. In 1991 Lompoc voters again rejected water from the State Water Project when they voted not to participate in the construction of the Coastal Branch Aqueduct.

The Draft EIR states that the implementation of either Alternative 4A or 4B would require cooperation of all involved agencies, completion of the project specific

environmental review and permitting is secured and we have to secure funding and operational agreement. As noted in the Draft EIR on Pages 3 through 11 and in a letter dated June 18, 1999m from Lompoc's counsel, Donald Mooney, to James Canady, the City of Lompoc has on two separate occasions rejected State Water Project as the substitute for its water supply. That continues to be the position of City Council and the voters. Therefore, Lompoc would not be agreeable to participating in the implementation of funding or operational agreement for either Alternatives 4A or 4B.

Lompoc supports the State Water Resources Control Board adoption of Alternative 3C. Alternative 3C, identified in the State Water Resource Control Board Draft Environmental Impact Report provides for a three-foot surcharge on Bradbury Dam to assist in providing downstream fish flows. To the extent that Alternative 3C also increases the reservoir's capacity, thus providing some additional flood control protection to downstream interests, the City of Lompoc supports the adoption of Alternative 3C.

Conclusion. On behalf of the City of Lompoc I encourage State Water Resources Control Board to modify Reclamation's water rights permits consistent with Paragraphs 1.3 and 1.4 and Exhibits B and C of the

Settlement Agreement. The State Water Resources Control Board's modification of these permits consistent with the Settlement Agreement will bring to close a dispute over the operation of the Cachuma Project that has lasted for 50 years.

That concludes my testimony, Mr. Silva.

H.O. SILVA: Real quick. I know we said no later than five, but I would like to, if you don't mind, complete Lompoc today.

MR. MOONEY: Mr. Silva, I think it will just take a few minutes.

H.O. SILVA: That is fine. Don't worry about it.

MR. MOONEY: I planned to take a few minutes, regardless of the time.

H.O. SILVA: No, it's nothing. I am saying, making a note to the people here that we will go a little longer.

MR. MOONEY: The next -- Lompoc's next witness is Timothy Durbin.

And, Mr. Durbin, is Lompoc Exhibit 3 a true and correct copy of your testimony?

MR. DURBIN: It is.

MR. MOONEY: And is Lompoc Exhibit 4 a true and correct copy of your statement of qualifications?

MR. DURBIN: It is.

MR. MOONEY: Would you please summarize your testimony.

MR. DURBIN: Yes. With respect to my testimony, it will be fairly short. Just wanted to take a moment to describe a little bit about the technical work that we did for the City of Lompoc and the conclusions that were derived from that work and then finally to emphasize a couple points that Gary just made.

But I will start first with a little brief background on myself. I am a hydrologist. My early career was with the United States Geological Survey. When I left that agency, I was the director of all its water resources activities within California except for some research activities in the Menlo Park office. About 20 years ago left that agency to start a consulting firm and ten years ago I started working with the City of Lompoc with respect to their concerns.

The principal work that I have done during this last ten-year period is the construction of hydrologic models for the Santa Ynez River Basin. They consist of both groundwater flow and stream flow and also groundwater salinity and stream flow salinity. The models cover the area starting at Lake Cachuma and represent the stream flow and riparian groundwater basin from Cachuma to the

Narrows. And also there is another set of models that represent stream flow and groundwater from the Narrows to the ocean.

These models were used to simulate various conditions. One of those conditions, of course, was the historical baseline condition. And it started in -- I think started simulations that we started in 1947, so we are talking about just after or just about the time that Bradbury Dam was constructed. And so we used the model to in a sense recreate what happened in groundwater and surface water for 1947 through 1996. Then the models were reused to look at or to answer -- try to answer the questions of has Cachuma Reservoir had an impact on the groundwater in the Lompoc Basin, and more particularly has it had an impact that was adverse to the City of Lompoc. And those simulations had a no and a yes to them.

Prior to or contrary to prior belief, the modeling indicated that the city was not or that the Cachuma Reservoir has not caused groundwater overdraft within the Lompoc Plain area from which the City draws its groundwater, but that the historical operation of Cachuma Reservoir has adversely impacted groundwater salinity, and the magnitude of that depends on which wells are being examined, but it's in general on the order of about 40 milligrams per liter in total dissolved solids. That is

the increase in dissolved solids that is the result of the historical operation of the reservoir.

We then looked at the future with the model simulations and came to the conclusion that if the Cachuma Reservoir is operated according to 89-18 and if the State Water Project water is mixed or blended into the stream flow below Bradbury Dam so this release before ever entering Lake Cachuma that that will mitigate all the past impacts on groundwater quality. And depending upon what the actual releases are of State Water Project water into the river below the dam, we can expect that to return to the sort of no Cachuma condition within the next five or ten years. So that we will be back to where we would have been had there never been a Lake Cachuma.

One of the points that I wanted to emphasize that Gary already stated, and that is that the blending of State Water Project water into the river, as described in the Settlement Agreement, is essential to making the City whole with regard to its groundwater quality. And that the other point has to do with the basic operation of the reservoir under 89-18. So that if there were some fundamental change in the way that the releases were operated from what they would be anticipated to be under 89-18, there may be or could be adverse water quality impacts on the City.

That concludes my testimony.

MR. MOONEY: If I may, just one follow-up question.

Mr. Durbin, have you reviewed the Draft EIR?

MR. DURBIN: Yes, I have.

MR. MOONEY: Based upon the review, can you determine whether the model you have been referring to, the HCI model or the Durbin, was used in the Draft EIR analysis in Section 4.6, which is entitled Lompoc Groundwater Basin Conditions?

MR. DURBIN: Yes. I mentioned earlier that there were these actually four models that were developed, a group above the Narrows and two models below the Narrows. And the models representing the below Narrows stream flow and groundwater were used in the analysis of impacts in the EIR.

MR. MOONEY: That concludes Lompoc's testimony. If I may, as kind of a housekeeping matter, determine whether or not there are parties that wish to cross-examine, and, if not, then maybe our witnesses won't have to come back tomorrow.

H.O. SILVA: I want to get the cross done right now.

Bureau?

MR. PALMER: No questions.

H.O. SILVA: CCRB, ID No. 2.

MR. WILKINSON: No questions.

H.O. SILVA: Sounds like you may get off. Santa Ynez Water?

MR. CONANT: No questions.

H.O. SILVA: Santa Barbara?

MR. SELTZER: No questions.

H.O. SILVA: Fish and Game?

MR. BRANCH: No questions.

H.O. SILVA: NOAA?

MR. KEIFER: No questions.

H.O. SILVA: Cal Trout.

MS. KRAUS: No questions.

H.O. SILVA: See, you got off.

MR. MOONEY: Thank you. We move to introduce Lompoc's Exhibits 1, 2, 3 and 4.

H.O. SILVA: Any objections? If not, the County goes tomorrow first. Is that okay?

MR. SELTZER: Mr. Silva, we have spoken and been approached by both the Bureau and CCRB regarding postponing the County's testimony to the November hearings. We agree that it might be a good opportunity for us to deal with some of the issues. We said we are

looking for agreement and would like that opportunity.

H.O. SILVA: We have two full days. I personally don't mind.

Cal Trout, you still want to go in November?

MS. KRAUS: We've been planning for it.

H.O. SILVA: That is no problem.

Fish and Game, can you start tomorrow morning?

MR. BRANCH: Yes.

H.O. SILVA: NOAA, you would go after Fish and Game tomorrow; is that acceptable?

MR. KEIFER: I believe that is acceptable.

H.O. SILVA: Great. Hopefully tomorrow we will get done. I am sure we will get done with Fish and Game and NOAA, and the last day will be on the 12th. We have two days available. So if somebody had preference, but right now let's just say the 12th and we will finish up with Cal Trout and the County.

MR. SELTZER: Thank you.

H.O. SILVA: See you tomorrow at 9:00.

(Hearing adjourned at 5:10 p. m.)

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REPORTER'S CERTIFICATE

STATE OF CALIFORNIA )
) ss.
COUNTY OF SACRAMENTO )

I, ESTHER F. SCHWARTZ, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to printed format, and the pages numbered 230 through 492 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 16th day of November, 2003.

_____
ESTHER F. SCHWARTZ
CSR NO. 1564