MINUTE ITEM
This Calendar Item No. C22
was approved as Minute Item
No. C22 by the State Lands
Commission by a vote of 2
to 0 at its 8-22-90
meeting.

CALENDAR ITEM
C 22

A 1
S 4

08/22/90
PRC 5482
Fong

PUBLIC AGENCY PERMIT

APPLICANT: California Department of Fish and Game
1416 Ninth Street
Sacramento, California 95814

AREA, TYPE LAND AND LOCATION:
Nine parcels of submerged lands in the bed of the Sacramento River located near Redding, Shasta County.

LAND USE: Placement of approximately 100,000 cubic yards of clean gravel for the rehabilitation and restoration of King Salmon and winter-run chinook salmon spawning grounds.

TERMS OF ORIGINAL PERMIT:
Initial period: Six years beginning May 1, 1983.

CONSIDERATION: The public benefit, with the State reserving the right at any time to set a monetary rental if the Commission finds such action to be in the State's best interest.

TERMS OF PROPOSED PERMIT:
Initial period: Ten years beginning August 9, 1990.

CONSIDERATION. The public benefit; with the State reserving the right at any time to set a monetary rental if the Commission finds such action to be in the State's best interest.

BASIS FOR CONSIDERATION:
Pursuant to 2 Cal. Code Regs. 2003.

PREREQUISITE CONDITIONS, FEES, AND EXPENSES:
Filing fee has been received.

STATUTORY AND OTHER REFERENCES:
A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.

B. Cal. Code Regs.: Title 2, Div. 3; Title 14, Div. 6.

AB 884: 12/02/90

OTHER PERTINENT INFORMATION:

1. The Department of Fish and Game is responsible for the protection and maintenance of spawning areas in California. Dam construction on the Sacramento River has contributed to the loss of anadromous fish spawning habitat. The winter-run chinook salmon were placed on the State endangered species list in 1989 and were recently placed on the federal threatened species list when the estimated population fell to 550 fish.

2. The State Lands Commission issued a Public Agency Permit to the Department of Fish and Game on May 31, 1978 for salmon spawning habitat rehabilitation projects within the Sacramento and San Joaquin River systems for five years from May 1, 1978. This permit was renewed by the Commission for an additional six-year period at the May 31, 1983 Commission meeting. The Department of Fish and Game wishes to renew the permit for an additional ten-year period to perform a spawning gravel rehabilitation project involving eight sites in the Sacramento River near the City of Redding, Shasta County. In 1988, the Commission authorized (PRC 7240) the placement of 16,000 cubic yards of gravel at the mouth of Salt Creek about one-and-one-half miles below Keswick Dam and the placement of 8,000 cubic yards just downstream of Keswick Dam on the west bank in 1989.

The additional placement of 1,000,000 cubic yards of spawning gravels in the Sacramento River is recommended as a high priority item in the January 1989 "Upper Sacramento River Fisheries and Riparian Habitat Management Plan" prepared pursuant to SB 1086 passed in 1986. This will increase spawning and rearing habitat to a level roughly equivalent to that existing prior to the construction of Shasta Dam. The most critical area of immediate need is between Keswick Dam and Clear Creek where gravel is most depleted and water temperatures are coolest. A disproportionately large number of fish try to spawn in this area because they are hindered from further upstream migration by the Anderson Cottonwood Irrigation District Dam and blocked by the Keswick Dam.

3. This project is the initial phase of a ten-year project to restore and rehabilitate spawning gravels in the upper Sacramento River. It is expected to take two years to complete and will involve the placement of 100,000 cubic yards of gravel on a 12-mile reach of the Sacramento River between Keswick Dam and Clear Creek in the vicinity of the City of Redding, Shasta County. Phase II, which will involve placement of up to 900,000 cubic yards of gravel on a longer reach of the river over the remainder of the ten-year period will require additional environmental review and will also require Commission authorization upon completion of the additional CEQA review.

4. The Applicant has requested the processing fee be waived in consideration of the public benefit to be gained from the rehabilitation of the spawning gravels.

5. A Negative Declaration was prepared and adopted for this project by the California Department of Water Resources. The State Lands Commission's staff has reviewed such document.

6. This activity involves lands identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

APPROVALS OBTAINED:

United States Army Corps of Engineers.

FURTHER APPROVALS REQUIRED:

Reclamation Board and Regional Water Quality Control Board.

EXHIBITS:

A. Land Description.
B. Location Map.
C. Local Approval Letter.
D. Negative Declaration.

IT IS RECOMMENDED THAT THE COMMISSION:

1 FIND THAT A NEGATIVE DECLARATION WAS PREPARED AND ADOPTED FOR THIS PROJECT BY THE CALIFORNIA DEPARTMENT OF WATER RESOURCES AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. DETERMINE THE THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

3. WAIVE THE PROCESSING FEE FOR THIS PROJECT BECAUSE OF THE STATEWIDE BENEFIT TO BE DERIVED FROM THIS PROJECT.

4 AUTHORIZE ISSUANCE TO THE CALIFORNIA DEPARTMENT OF FISH AND GAME OF A TEN-YEAR RENEWAL OF PUBLIC AGENCY PERMIT PRC 5482 BEGINNING AUGUST 9, 1990 FOR THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF; IN CONSIDERATION OF THE PUBLIC BENEFIT, WITH THE STATE RESERVING THE RIGHT AT ANY TIME TO SET A MONETARY RENTAL IF THE COMMISSION FINDS SUCH ACTION TO BE IN THE STATE'S BEST INTEREST.

EXHIBIT "A"

PRC 5482

LAND DESCRIPTION

Nine parcels (8 locations) of submerged land in the State owned bed of the Sacramento River, Shasta County, California, said parcels being shown on sheets 1 through 4, of the "Upper Sacramento River Spawning Gravel Restoration Project-Phase I- River Mile 290-302" dated May 1990, a copy of said sheets being on file in file PRC 5482 in the office of the State Lands Commission, Sacramento, California.

EXCEPTING THEREFROM any portion lying above the ordinary low water mark of the Sacramento River.

END OF DESCRIPTION

PREPARED JULY 17, 1990 BY LLB.

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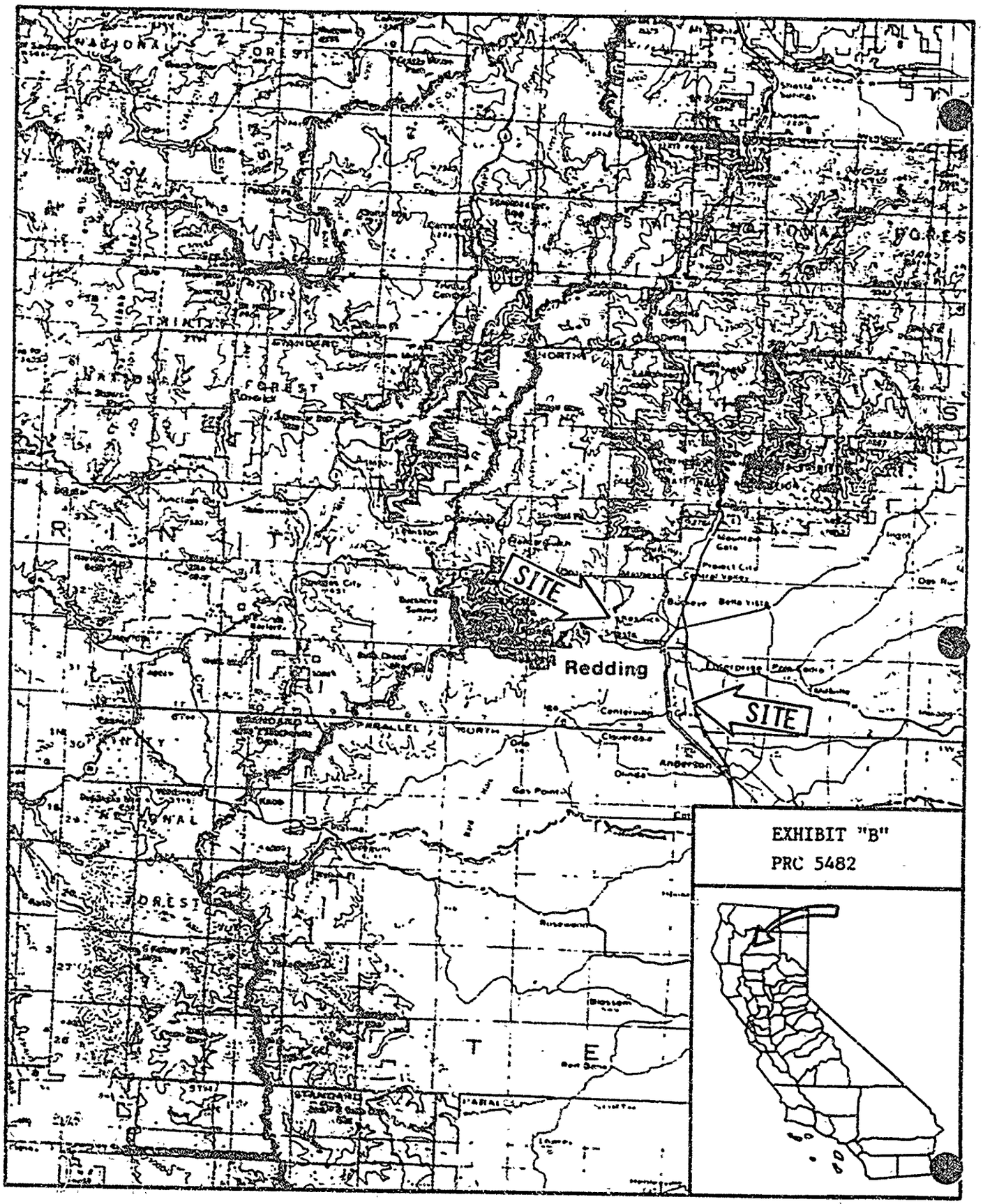


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EXHIBIT "C" PRC 5482

ITEM NO 9 - 4(b)
MEETING DATE 7-3-90
APPROVED BY
DEPARTMENT DIRECTOR
CITY MANAGER

CITY OF REDDING

# REPORT TO CITY COUNCIL

DATE: June 26, 1990

CODE: W-030-550-700

FROM: Planning and Community Development

SUBJECT: Encroachment Permit for Gravel Enhancement in the Sacramento River

## BACKGROUND

At its regular meeting of June 19, 1990, the Council approved a request by the State to do gravel-enhancement work across five sites owned by the City of Redding. As the Council will recall, the primary issue was a condition which required Fish and Game and the City to enter into a Memorandum of Understanding (MOU) that would set the limits for new studies and mitigation measures resulting from the 10,000 cubic yards of new gravel proposed for placement in the River downstream of the ACID dam near Market Street Bridge. This gravel has the potential to be washed downstream and concentrate in the vicinity of the preferred alignment for the Auditorium Drive crossing of the River. Attached for your review are the approved conditions and the minutes of the previous Council meeting.

Since then, staff has been advised by the State that it intends to proceed with four of the five sites approved by the Council. At this time, the State does not intend to proceed with the Diestelhorst/ACID site, which requires the MOU. Accordingly, staff will issue encroachment permits only for the four other sites.

This is an information item only.

## ATTACHMENTS

Minutes
Conditions of Approval

TH:jh
STAF\GRAVEL.CC

CALENDAR PAGE 165
MINUTE PAGE 1966

STATE DEPARTMENT OF WATER RESOURCES - Request for Encroachment Permits for Gravel Enhancement
(W-030-550-700)
Senior Assistant Planner Hanson reported that the State Department of Water Resources submitted a letter requesting permission to encroach into City-owned land at five different sites to do gravel enhancement work in the Sacramento River. Mr. Hanson explained that the work project involves depositing 70,000 cubic yards of gravel at five sites affecting City-owned land during the first year. He reviewed the issues and implications of the project to the City. It is the recommendation of staff to approve the encroachment permits at all five sites subject to the conditions stated in the Report to City Council dated June 13, 1990, which is incorporated herein by reference.

Noting that a bridge crossing is proposed for somewhere behind the Convention Center area, Council Member Arness asked what will happen when gravel is placed at the ACID site and it becomes a great spawning area. Then the Department of Fish and Game may object to a bridge built there.

Dave Hoopaugh, State Department of Fish and Game, said there will have to be environmental studies for the bridge; however, any limitations imposed would be minimal with respect to the dollar cost of the project, and it may reduce the amount of study required. Water Resources will be monitoring the movement of gravel and that information may apply to the bridge studies.

Mr. Hoopaugh stated that if Condition 10, the Memorandum of Understanding (MOU) is required, the situation will be moot. He explained that there are two other agencies involved, and he cannot speak for them. Mr. Hoopaugh added that he does not believe that the placement of gravel will cause the City any problems.

Mayor Buffum noted that the bridge abutments may actually enhance trapping the gravel.

MOTION: Made by Council Member Fulton, seconded by Council Member Moss, to approve the encroachment permit for the Department of Water Resources for gravel enhancement at all five sites on the Sacramento River subject to the list of conditions. The Vote: Unanimous Ayes

Doug Denton, State Department of Water Resources, explained that the Department is trying to prepare a contract to work within a restricted time period. He explained that they plan to begin the project in September in order to have a positive impact on the winter run. Mr. Denton added that action must begin within the next two weeks, and by including Condition 10, it will preclude the Department from starting work until winter.

Council Member Moss conveyed that he does not have a problem with any area except where the bridge is proposed. He noted that there is no spawning area there now. He questioned why a policy on this one site could not be written. Council Member Moss added that Council is asking for assurance that the project will not cause mitigation problems.

Mr. Denton said he would be glad to have seven of the eight sites approved. He opined that Fish and Game will probably not agree to something that may or may not happen in the future.

Council Member Arness agreed that Condition 10 should be removed except for the ACID site.

MOTION: Made by Council Member Fulton, seconded by Council Member Moss, to amend the motion to state that the encroachment permits to the Department of Water Resources for gravel enhancement on the Sacramento River are approved subject to Conditions 1 through 9, except for the site by the ACID Canal, which shall be subject to Conditions 1 through 10. The Vote: Unanimous Ayes

June 19, 1990

Encroachment Permit to State of California to Cross City Lands
for Gravel Enhancement in the Sacramento River

DRAFT CONDITIONS

General

1. No additional encroachments shall be permitted until an EIR has been completed in compliance with CEQA.

2. The encroachment permit is being issued for the crossing of City-owned land and the stockpiling of clean spawning gravel on City-owned land at the following sites during the dates specified below and at the quantities specified below:

| | | |
|---|---|---|
| Salt Creek | 20,000 cu. yd. | Sep. 1 to Oct. 15, 1990 |
| Diestelhorst & ACID Site | 12,000 cu. yd. | Jan. 1 through March 31, 1991 |
| Redding Riffle | 10,000 cu. yd. | Jan. 1 through March 31, 1991 |
| Turtle Bay West | 10,000 cu. yd. | Jan. 1 through March 31, 1991 |
| Turtle Bay East | 5,000 cu. yd. | Jan. 1 through March 31, 1991 |

Variations to these quantities or time periods must be approved in advance.

3. Access and stockpiling of gravel is limited to that shown on the attached map exhibits (Sheets 1 through 5).

4. The State Department of Water Resources and State Department of Fish and Game shall sign an agreement prepared by the City Attorney that shall hold the City harmless from any and all liability and claims for damage resulting from the work associated with this permit. The State of California shall also agree to bear the cost of defending the City from any claim associated with this work. This agreement shall be executed prior to commencement of work.

5. The State shall be responsible for any damage to City-owned or lessee-owned fences, gates, waterlines, crops, improved parking areas, other facilities, or equipment caused by the State, its agents, or contractors. Repair or replacement of damaged facilities shall be completed within 20 working days.

6. The State Department of Water Resources shall obtain all necessary permits from the Regional Water Quality Control Board, the State Lands Commission, the Bureau of Reclamation, and the Army Corps of Engineers. The State is to hold the City of Redding harmless from mitigation measures or conditions of permits required by other agencies. The State shall cease dumping gravel at the request of the Public Works Director should increased turbidity be in evidence at the City of Redding domestic-water intake at Pump House No. 1. Trucking operations would continue as outlined in Condition No. 3.

7. The State of California is to be solely responsible for injury occasioned by this project or claims occurring from dumping of the gravel in the River.

8. The State Departments of Water Resources and Fish and Game, the contractor and/or his key personnel shall meet with City staff prior to the start of work to clarify these conditions and their intent.

9. The Director of Public Works shall be notified within 24 hours of project completion at each site for a final inspection to assess possible damage to any City facilities.

Salt Creek Site

1. The amount of gravel deposited/truck activity is not to exceed 20,000 cubic yards or approximately 2,000 truck and pup loads.

2. The hours of gravel-truck operation are to be limited to daylight hours. The operation is to be limited to areas designated on Exhibit "A."

3. This permit is valid from September 1, 1990, to November 15, 1990. The contractor is to work continuously, five days a week for four consecutive weeks, in order to accomplish the trucking operation in as short a time period as possible.

4. The gates on the rail bed, providing access, are to remain closed and locked except during truck crossings.

5. The existing trail section designated for truck crossing is to be rebuilt with a nine-inch base and an eight-inch concrete section with ramps. Improvement drawings are to be submitted to the City of Redding for approval prior to commencement of work.

6. Should the trail be discolored or damaged as a result of the gravel operation, the damaged trail section shall be removed and replaced to the satisfaction of the City of Redding Department of Public Works.

7. During the period of gravel operations, the trail shall be signed for construction activity, including flashing warning lights during nondaylight hours. The contractor shall submit his plan showing the amount, type, and location of signs and flashing warning lights to the Department of Public Works for review and approval.

8. Flaggers shall be stationed at the truck crossing of the River trail to ensure that there is not a safety hazard to users of the trail. The flaggers shall also ensure that only authorized vehicles pass through the gates off the abandoned rail bed.

9. The State shall cause to have the gravel project and resulting trail-use disruption publicized through local media, i.e., newspaper articles, television, and radio announcements prior to and during truck activity.

10. The State shall water the dirt-access road and turnaround area to maintain them in a dust-free condition as necessary.

11. The trail area shall be cleaned of any gravel or debris throughout the day and immediately after the end of each day's operation.

Diestelhorst Site

1. The encroachment permit is issued for access through City of Redding lands utilized as a Community Garden and grazing lands leased to Harry Scott as designated on Exhibit "A." No equipment or vehicles shall drive across grazing land other than the designated access route.

2. The hours of equipment access across the access route are to be limited to daylight hours.

3. This permit is valid from January 1, 1991, to March 31, 1991.

4. Both the Community Garden and Scott gate shall be replaced with 20-foot-wide and 16-foot-wide gates, respectively, prior to commencement of gravel transport. The gate reconstruction is to be accomplished within one working day to protect the security of both parcels. Reconstruction shall be the sole responsibility of the State.

5. The State is to give the City, People of Progress (lessee), and Harry Scott (lessee) 24-hours' notice of equipment-access times. This requirement is particularly important when heavy equipment is mobilized because People of Progress may wish to shut off the water supply to its irrigation lines to minimize potential damage.

6. An encroachment permit from ACID is to be obtained prior to commencement of work.

7. The gate to the Scott Leasehold is to remain closed and locked except during equipment crossings. The gate to the Community Garden is to be locked at the end of the work day.

8. Prior to commencement of work, the State of California Department of Fish and Game and the City of Redding shall enter into a Memorandum of Understanding concerning the impact of gravel enhancement on bridges proposed by the City of Redding at Lake Redding Park and the Redding Convention Center/Rodeo Grounds. The memorandum shall primarily cover the limits of new studies and additional mitigation measures that may result from the additional gravel installed in the River with this project.

Redding Riffle

1. No vegetation shall be removed to access the River or stockpile the gravel.

2. The hours of gravel-truck operation are to be limited to daylight hours. The operation is to be limited to areas designed on Sheet No. 3.

3. During the period of gravel operations, the parking-lot/driveway areas shall be signed for construction activity. The paved road to the boat ramp shall remain open. The parking-lot/driveway areas shall be swept clean of loose gravel at the end of each day of operations.

4. The temporary stockpile area shall be maintained in a dust-free condition.

5. All barriers removed or modified to facilitate this project shall be replaced to prior-project condition.

6. The stockpiled gravel shall be completely removed by May 10, 1990, to allow use of the land for the annual Bedding Rodeo.

7. Construction equipment shall not be stored or operated in a manner that interferes with parking for Convention Center activities.

8. Gravel hauling shall not occur during peak-hour departures for major events occurring at the Convention Center. The Director of Community Services shall be consulted to coordinate hauling times and dates with major events.

Turtle Bay West

1. No vegetation shall be removed to access the River or stockpile the gravel.

2. The access gate shall be kept locked at all times including gravel-hauling times, or the gate shall be manned to prohibit all but authorized vehicles.

3. The dirt access roads and temporary stockpile areas shall be maintained in a dust-free condition.

4. Construction equipment shall not be stored or operated in a manner that interferes with parking for Convention Center activities.

5. Gravel hauling shall not occur during peak-hour departures for major events occurring at the Convention Center. The Director of Community Services shall be consulted to coordinate hauling times and dates with major events.

Turtle Bay East

1. Gravel hauling shall be completed no later than October 15, 1990. Should heavy rains occur prior to that date, gravel hauling shall be immediately suspended to protect the integrity of the North Bechelli Lane structural section.

2. Quantities of gravel shall not exceed 5,000 cubic yards or 250 truck and pup loads.

3. Hours of hauling operation shall be limited to 8 a.m. to 11:30 a.m. and 1:30 p.m. to 4 p.m., Monday through Friday; and 8 a.m. to 5:30 p.m. on Saturdays. No hauling shall occur on Sundays.

4. NOTE: Loaded trucks in subsequent years will not be allowed on Bechelli Lane. Any subsequent-year-encroachment permits will be subject to Caltrans' approval to allow loaded trucks to enter the area via the Highway 44 off ramp to Interstate 5.

5. The State shall construct a "big foot" gate and suitable barrier near the undercrossing of Highway 44. The barriers shall be adequate (as determined by the Department of Public Works) to deter vehicle access under the freeway.

6. The removal of riparian habitat to gain access to the River's edge for gravel work shall be limited to three 20-foot-wide openings in the riparian habitat as shown on Sheet 3. In conjunction with the Shasta Audubon Society and the City of Redding, a riparian-habitat-restoration plan shall be prepared by the State prior to commencement of work. That plan shall specify the location and type of restoration work and timing for completion.

7. Dirt access roads and the temporary stockpile area shall be maintained in a dust-free condition.

Exhibit "L"

RESOURCES AGENCY
NOTICE OF DETERMINATION

TO: ( ) Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

FROM: Department of Water Resources
2440 Main Street
P. O. Box 607
Red Bluff, CA 96080

( ) County Clerk
County of Shasta County

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

PROJECT TITLE: Upper Sacramento River Gravel Restoration Project

STATE CLEARINGHOUSE NUMBER: 90030390

CONTACT PERSON: Douglas Denton TELEPHONE NUMBER: (916) 527-6530

PROJECT LOCATION: Shasta County, near Redding, California. Nine spawning gravel replacement sites are located in a 12 mile reach of the Sacramento River between Keswick Dam and Clear Creek.

PROJECT DESCRIPTION: Dam construction on the Sacramento River has contributed to the loss of anadromous fish spawning habitat. Up to 100,000 cubic yards of spawning gravel will be placed in the river between Keswick Dam and Clear Creek. Work will begin September 1, 1990 and end March 31, 1991.

This is to advise that the California Department of Water Resources (Lead Agency or Responsible Agency) has approved the above described project and has made the following determinations regarding the above described project:

1. The project ( ) will (X) will not have a significant effect on the environment.

2. ( ) An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
(X) A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
The EIR or Negative Declaration and record of project approval may be examined at: _____

3. Mitigation measures ( ) were, (X) were not, made a condition of the approval of the project.

4. A statement of Overriding Considerations ( ) was, (X) was not, adopted for this project.

Date Received for Filing _____

Douglas Denton
Signature
Sr. Engl. W.R.
Title

CALENDAR PAGE 173
MINUTE PAGE 1974

# DRAFT NEGATIVE DECLARATION

## Upper Sacramento River Spawning Gravel Restoration Project

### Description

The Departments of Water Resources and Fish and Game propose to place spawning gravel in the Sacramento River between Keswick Dam and Clear Creek. This work was recommended in the "Upper Sacramento River Fisheries and Riparian Habitat Management Plan" published in January 1989 by the California Resources Agency. Federal legislation (H.R. 3613 and S. 1857) has been introduced to authorize and fund this management plan. State support for the program was expressed in Senate Current Resolution 62 (1989), and initial funding requests for the program are contained in next year's budget.

The DWR-DFG Delta Pumping Plant Fish Protection Agreement Advisory Committee has agreed to fund placement of 100,000 cubic yards of spawning gravel in the upper river. Placement of gravel in this segment of the river would improve spawning conditions for the endangered winter run chinook salmon, other chinook races and steelhead trout. Gravel would be placed at nine sites along a twelve-mile reach from Keswick Dam to Clear Creek. This project would be started in the summer of 1990 and is scheduled to be completed within two years at a cost of $1,650,000.

Factors that would help prevent or mitigate any significant negative environmental impacts resulting from this project are:

1. Gravel would be obtained from commercial suppliers, so no new pits would be opened,

2. Existing river access would be used at all sites, and

3. Some gravel would be placed along eroding streambanks to act as temporary protection.

Gravel restoration activities have been coordinated with the U. S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), U.S. Army Corps of Engineers (COE), U.S. Bureau of Reclamation (USBR), Federal Emergency Management Agency (FEMA) State Water Quality Control Board (SWQCB), State Reclamation Board (SRB), City of Redding and Shasta County. DWR has consulted with NMFS, DFG and USFWS about resident and anadromous fish species to avoid impacts on winter run eggs.

Determination

The attached initial study examines the potential environmental effects of the proposed project. This study determined that restoring spawning gravel to the upper reach of the river would not have a significant adverse effect on the environment.

This initial study and negative declaration has been prepared by the California Department of Water Resources, Northern District. Copies are available at the DWR Office at 2440 Main Street, P.O. Box 607, Red Bluff, CA 96080. The contact person is Doug [illegible]ton, Senior Engineer, Environmental Engineering Section at (916) 527-6530. Copies are also available at the DFG Office at 601 Locust Street, Redding, CA 96001.

# INITIAL STUDY

## I. INTRODUCTION

The Sacramento River between Keswick Dam and Cottonwood Creek has been one of the most prolific producers of salmon and steelhead trout in California. However, this extremely productive spawning and rearing habitat has experienced large-scale degradation in the past 45 years, due partly to the blockage of stream gravel migration by Shasta and Keswick Dams and reduced stream bank erosion corresponding to a reduction in peak flows. Gravel mining, bank protection and levee construction have also contributed to a reduction in streambed gravel. High flows since dam construction have moved spawning-sized gravels downstream at an average rate of about one-half mile per year. This has left the upper 30 miles below Keswick Dam either deficient in spawning gravels or with large-sized gravels of marginal spawning quality.

This continuous and unreplenished downstream gravel movement has contributed to the decline of all anadromous fish using this area. The fall and late fall chinook salmon runs have dropped to around 50 percent of their historic levels, the winter run to less than one percent, and the once predominant spring run to only a few hundred. The steelhead population has declined to about a tenth of 1966 levels.

Winter run chinook salmon were placed on the State endangered species list in 1989 and were recently placed on the federal threatened species list on an emergency basis. Most winter run spawning occurs in the upper river near Redding, where presently the quantity of suitable spawning gravels is insufficient and the quality marginal.

The few areas that contain suitable gravel and water velocity are overused. The spawning redds (nests) of one race are frequently dug up by the subsequent spawning run.

## II. FISHERY RESTORATION PLANNING WORK

The recently published "Upper Sacramento River Fisheries and Riparian Habitat Management Plan" (Resources Agency, January 1989) addresses 22 anadromous fishery problems. The estimated cost of the overall Fisheries Restoration Plan is approximately $185,000,000. The recommended solution to gravel degradation is to place additional spawning gravels in the river at several suitable locations. This was the third highest priority action recommended. The overall plan is to place 1,000,000 cubic yards of spawning gravels in the river over a ten year period, at an estimated cost of $12,000,000.

The Departments of DWR and DFG have agreed to begin the urgently needed spawning gravel restoration work using funds available from the Delta Pumping Plant Fish Protection Agreement. This agreement was formulated to provide a means of offsetting the

impacts of constructing additional water intake pumps in the southern delta. The Delta Pumping Plant Fish Protection Advisory Committee was formed to direct this fishery mitigation work.

The Advisory Committee has recommended and the Departments have approved placing 100,000 cubic yards of spawning gravel in the upper river between Keswick Dam and Cow Creek. This project, which is considered to be Phase I of the total gravel restoration effort, would be started in the summer of 1990 and completed within two years. The estimated cost is $1,650,000.

This initial study and negative declaration covers only the planning and construction activities related to placing the initial 100,000 cubic yards of gravel in the river. Based on the results gained from this prototype project, a management plan would be prepared for placement of up to 1,000,000 cubic yards of spawning gravels over a 10-year period in a longer reach of the upper river.

The Departments (DWR and DFG) are being aided by a subgroup consisting of USFWS, USBR, SRB and the Central Valley Region Water Quality Control Board (RWQCB). DWR was selected as the lead agency in conducting this project. Thirty-four potential sites were initially identified based on the following criteria: (1) proximity to Keswick Dam, (2) existing access, (3) location above and close to present, successful spawning riffles, and (4) low flood risk (i.e., areas that have high banks or good

development setbacks, or are unpopulated). These original 34 sites have been reduced to nine for final planning purposes.

DWR consulted with NMFS, USFWS and DFG at potential restoration sites on March 9, 1990, and decided on instream work windows (timeframes) for gravel placement. The windows are September 15 to October 15 at the Salt Creek site and September 1 to October 15 at the Tobiasson and Shea Sand and Gravel sites. Gravel at these sites would be placed against banks where it would wash in at moderate to high flows. Gravel would be spread in the main channel at the remaining six sites during the months of January, February and March. There are specific criteria that must be met for individual sites, but none that would add substantially to the cost of the project. The April 3, 1990 follow-up letter on the winter run consultation is included as Attachment 1.

## III. Past Restoration Work

Two small gravel restoration projects have been completed downstream of Keswick Dam within the last year and a half. In 1988, DFG placed 16,000 cubic yards at the mouth of Salt Creek about one and one-half miles below Keswick Dam and 8,000 cubic yards downstream of Keswick Dam on the south bank in 1989. USBR funded both of these projects, which cost $250,000 and $200,000, respectively. The Salt Creek gravel has been monitored by USFWS. Spawning gravel placed at this location has moved one-half mile downstream and all the way across the river bottom. It has

provided a large area of good quality spawning habitat which fish are using. The gravel at Keswick Dam has not moved because flows have been unusually low since its placement. However, when it moves it will be easy to monitor because it contains 25 percent white tracer rock.

## IV. Continuation of Restoration Work - Initial Year

The main elements of the current gravel restoration planning work are placement site identification, right-of-way acquisition, site surveying, flood risk determination, analysis of environmental impacts, acquisition of required permits, and contract preparation.

Nine sites between Keswick Dam and Clear Creek have been selected for restoration work during 1990 and 1991. Surveying at these sites has been completed to determine the gravel volumes that can be placed at each site and to insure that gravel will be placed at an elevation lower than the water level at normal low flows. This surveying will be the basis of future monitoring efforts to detect gravel movement and use. Copies of the USFWS monitoring proposal are available.

## V. Description of Initial Project Sites

During the period from September 1990 to April 1992, 100,000 cubic yards of spawning gravels would be distributed among nine sites in the Sacramento River between Keswick Dam and Clear Creek. These sites named in downstream order are:

1. Salt Creek below Keswick Dam. Sixteen-thousand cubic yards of gravel were placed here on the south bank of the river DFG in 1989. In the proposed project, 10,000 to 20,000 cubic yards of gravel will be placed here using dump trucks and a rubber-tired tractor. The work window is between September 15 and October 15.

   Access would be by Highway 299W, Iron Mountain Road, the USBR railroad grade that runs parallel to Middle Creek Road, across the Redding Pedestrian Trail and down a dirt road to the site. Between 500 and 1,000 truck loads of gravel would come to the site at a maximum rate of eight per hour. The trucks would begin arriving about September 1. They would not travel through any residential areas. Up to 5,000 cubic yards of gravel would be stockpiled at this site.

2. Diestelhorst site just downstream of the railroad trestle. This south bank site would receive up to 2,000 cubic yards. The gravel would be graded under the low-flow water surface elevation corresponding to about 3,000 cfs. The work window is between January 1 and March 31.

Access would be by Highway 44, Market Street and Riverside Avenue. One hundred truckloads of gravel would be required at a rate of 30 per day for four days (one week). Trucks would travel through the City of Redding and a mixed residential/business neighborhood along Riverside Drive. CalTrans trucks already travel this route, so residents are accustomed to truck traffic.

3. Market Street site at the Market Street bridge. Between 5,000 and 10,000 cubic yards of gravel would be placed on the south bank just upstream and downstream of the bridge, in the same way and at the same time as at Diestelhorst.

Access would be along the same route as for Diestelhorst. Between 250 and 500 truckloads of gravel would be brought to the site at the rate of thirty trucks per day.

4. Highline site at the sewer line crossing. This north bank site would take up to 10,000 cubic yards of gravel. Access would be along Highway 44, Market Street and Park Drive. Five hundred truckloads of gravel would arrive at the site, at the maximum rate of 30 trucks per day, during one month. Trucks would pass a trailer park here, but the City of Redding already uses this road to bring equipment in. A sign warning trailer park residents of truck traffic would be placed at the entrance to the park, and residents would be notified of the project. Up to 5,000 cubic yards of gravel would be stockpiled at this site.

5. Redding Riffle site near the Posse Grounds. Up to 10,000 cubic yards of gravel would be placed at this south bank site from January through March. Access would be by Highway 44 and Auditorium Drive. Five hundred truckloads of gravel would arrive at the site, at a rate of 30 trucks per day, during one month. Trucks would travel through a parking lot next to the Civic Auditorium. Traffic to the nearby boat ramp may be temporarily detoured through the Posse Grounds. Approximately 5,000 cubic yards of gravel will be stockpiled at this site on the north edge of the unpaved Posse Grounds parking lot.

6. Turtlebay West site upstream of the entrance to the spawning channel. This south bank site would accommodate as much as 10,000 cubic yards of gravel in the same window and manner as at Diestelhorst. Access would be the same as for the Redding Riffle site. Five hundred truckloads of gravel would arrive at the site, at a rate of thirty trucks per day, during one month. Three thousand cubic yards may be temporarily stockpiled at this site.

7. Turtlebay East site around the Highway 44 bridge abutment. This east bank site would take as much as 10,000 cubic yards of gravel in the same window and manner as at Diestelhorst. Access would be along Cypress Avenue and Rechelli Lane. This route runs through a long residential neighborhood. Five hundred trucks would arrive at this site at the much-reduced maximum rate of one every hour, totalling ten trucks per day.

Therefore, 50 working days, or two and one half months including weekends would be required. Trucks would come to the site throughout most of the January through March work window. Five thousand cubic yards would be stockpiled at this site.

8. Tobiasson Island site just downstream of the Bonnyview bridge. This site, on an east bank terrace, is at the edge of a field presently planted in strawberries. Up to 20,000 cubic yards of gravel may be dumped over the bank here in a strip 25 feet wide, 20 feet deep and about 1,000 feet long. The work window for this site is September 1 to October 15.

Access would be by Interstate 5 and Sunnyhill Road. Up to 1,000 truckloads of gravel would come to the site, at the rate of thirty trucks per day, throughout the forty-five day work timeframe.

9. Shea levee site upstream of the mouth of Clear Creek. This east bank levee site would take up to 20,000 cubic yards of gravel in a strip 30 feet wide, fifteen feet deep and about 1,000 feet long. The work window is January 1 to March 31. Access is by Churn Creek Road and Smith Road. About thirty trucks per day would arrive at this site throughout the work window. Trucks would pass through a rural residential area, but Shea Sand & Gravel trucks already travel this route continuously.

The Salt Creek, Tobiasson and Shea sites require only dumping gravel over the bank where high flows would distribute it. The remaining sites would require grading the gravels under the low-flow water surface elevation with a loader or dozer. The maximum placement elevation will be set so that after spawning is completed the redds won't be exposed if the flow is reduced to the near-minimum level of about 3,200 cubic feet per second (cfs).

Some gravel would need to be temporarily stockpiled near placement sites, but out of the floodway prior to the gravel placement window. This stockpiled gravel could then be quickly placed at the nearby sites while additional gravel is hauled simultaneously. This would spread the hauling over a longer period and reduce the traffic intensity and any accompanying negative impacts. Suitable stockpile areas are located around the Salt Creek, Highline, Redding Riffle, Turtlebay West and Turtlebay East sites. Agreement must be reached with property owners and the SRB before stockpiling of gravel could begin.

Following is a summary table of site gravel quantities, construction methods and times:

**Table 1. Summary of Site Statistics**

| Sites | Quantity of Gravel Placed (cubic yards) | Quantity of Stockpiled Gravel | Method of Gravel Placement | Work Window for Placement | Truck Travel Frequency (maximum) |
|---|---|---|---|---|---|
| Salt Creek | 10,000 - 20,000 | 5,000 | Bank Dumping | Sept. 15 - Oct. 15 | 8/hour |
| Diestelhorst | 2,000 | --0-- | Spreading | Jan. 1 - Mar. 31 | 4/hour |
| Market Street | 5,000 - 10,000 | --0-- | Spreading | Jan. 1 - Mar. 31. | 4/hour |
| Highline | 10,000 | 5,000 | Spreading | Jan. 1 - Mar. 31 | 4/hour |
| Redding Riffle | 10,000 | 5,000 | Spreading | Jan. 1 - Mar. 31 | 6/hour |
| Turtlebay West | 10,000 | 3,000 | Spreading | Jan. 1 - Mar. 31 | 6/hour |
| Turtlebay East | 10,000 | 5,000 | Spreading | Jan. 1 - Mar. 31 | 1/hour |
| Tobiasson | 20,000 | --0-- | Bank Dumping | Sept. 1 - Oct. 15 | 4/hour |
| Shea | 20,000 | --0-- | Bank Dumping | Sept. 1 - Oct. 15 | 8/hour |

## VI. Flood Potential Analysis

One of the issues that must be addressed before performing this work is how the addition of gravel to the river would affect the 100-year flood elevations. There are several reasons to believe that any change in flood elevations will be small:

1. Prior to construction of Shasta Dam, the river carried an estimated gravel bedload of 60,000 cubic yards per year. After dam construction, the bedload from Keswick Dam to Clear Creek was essentially reduced to zero. Restoring bedload in this degraveled reach to a level equal to the present bedload transport capability of the river should not result in a significant increase in historic river flood levels. The planned placement of 100,000 cubic yards of gravel would be less than five percent of the estimated 2,000,000 cubic yards of bedload blocked from transport since dam construction.

2. The normal stream channel bedload of spawning size gravel (1/2" to 4") does not act as an impediment to flood flows because this material is readily moved from high carrying-capacity river reaches by flood flow velocities and deposited in shallower, slower velocity areas.

3. The potential gravel restoration sites are located in relatively unpopulated reaches of the river with low flood damage potential. No occupied dwellings are located near enough to the river in the proposed gravel placement reach to be subject to flooding.

4. In the upper reach of the river, the river bottom has degraded as spawning-sized gravels moved downstream. Thus, gravel restoration would tend to elevate the channel bed back to past elevations.

To determine the expected change in the 100-year flood elevations due to gravel placement, we re-ran the COE "Hydrologic Engineering Center-2 (HEC-2) water surface profile model using modified 1980 river cross-sections to represent the proposed gravel placements. The results indicated a maximum rise in the 100-year flood elevations of 0.28 feet after gravel restoration work.

This analysis was sent to William Medigovich, the Chief of the San Francisco FEMA field office. DWR anticipates that FEMA will grant an exception from the "no increase in flood elevation" clause of Redding's floodplain ordinance to allow fishery restoration work on the Sacramento River.

## VII. Gravel Sources

One hundred thousand cubic yards of gravel sized between 1/2 and four inches (1/2" to 4") would be required for the project. Suitable sources of spawning gravel are available from westside tributaries such as Thomes, Cottonwood and Clear Creeks. Red Bluff Rock, at Thomes Creek, supplied most of the 24,000 cubic yards placed below Keswick Dam during the last one and a half years. This gravel was purchased through a competitive bidding

process. Based on that work and recent discussions with aggregate suppliers, the cost of gravel delivered to restoration sites is estimated to be about $17.00/cubic yard, if the source is Thomes Creek. Thomes Creek contains a large source of gravel, has the full range of required gravel sizes and does not support an anadromous fish run.

The $17.00/cubic yard ($11.65/ton) cost includes about $9.50/cubic yard to mine, screen and mix the gravel and $7.50/cubic yard to haul it. The hauling cost is approximately $0.10/cubic yard-mile. Washing the gravel is a routine and integral part of screening, and no savings would occur if the gravel were not washed. If white quartz tracer rock were added to increase underwater visibility for monitoring, the cost would be around $27.00/cubic yard for the tracer mixture.

The dredging discharge stockpile at the Glenn-Colusa Irrigation District (GCID) pumps has been suggested as a possible gravel source. However, sieve analysis of this material indicates that only about one third of this is large enough to meet spawning specifications. The extra costs of portable screening, settlement pond construction and hauling an extra thirty miles would increase the price of this gravel to over $21/cubic yard. Because of this high cost, GCID is not being considered as a gravel source for this project.

A separate contract for around $100,000 would probably be awarded to wash, transport and stockpile from 5,000 to 10,000 cubic yards

of gravel located at Cottonwood Creek. This gravel is available to DFG through negotiated gravel mining agreements with two aggregate plants on Cottonwood Creek. It would probably cost around $12.00/cubic yard because of the shorter haul distance and the lack of royalty, or ownership, charge.

## VIII. Permits

Before gravel restoration work can begin, permits must be obtained from DFG, COE, SWQCB, SRB and the State Lands Commission. Agreements for right-of-ways must be reached with the City of Redding, Shasta County, and private property owners. Based on early contacts and internal consultation, it is anticipated that all required permits can be obtained.

DFG is currently working on their own 1601 agreement. SWQCB is planning to issue DWR a "Waiver of Discharge Requirements". DFG has previously been issued a regional COE permit for gravel restoration work in the Sacramento-San Joaquin Basin, and DWR expects to work under this permit. DFG expects to renew an area-wide State Lands Commission permit under which DWR can carry out the restoration work. DWR is preparing SRB permit applications for each site.

## IX. ENVIRONMENTAL IMPACTS CHECKLIST

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

| | YES | MAYBE | NO |
|---|---|---|---|
| 1. Earth. Will the proposal result in significant: | | | |
| a. Unstable earth conditions or in changes in geologic substructures? | | | X |
| b. Disruptions, displacements, compaction or overcovering of the soil? | | X | |
| c. Change in topography or ground surface relief features or removal of topsoil? | | X | |
| d. Destruction, covering or modification of any unique geologic or physical features? | | | X |
| e. Increase in wind or water erosion of soils, either on or off the site? | | | X |
| f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake? | | X | |
| g. Loss of prime agriculturally productive soils outside designated urban areas? | | | X |
| h. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? | | | X |
| 2. Air. Will the proposal result in: | | | |
| a. Substantial deterioration of ambient or local air quality? | | | X |
| b. The creation of objectionable odors, smoke or fumes? | | | X |
| c. Significant alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? | | | X |

| | YES | MAYBE | NO |
|---|---|---|---|
| 3. Water. Will the proposal result in substantial: | | | |
| a. Changes in currents, or the course or direction of water movements? | ___ | ___ | X |
| b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff? | ___ | ___ | X |
| c. Need for off-site surface drainage improvements, including vegetation removal, channelization or culvert installation? | ___ | ___ | X |
| d. Alterations to the course or flow of flood waters? | ___ | X | ___ |
| e. Change in the amount of surface water in any water body? | ___ | ___ | X |
| f. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? | ___ | X | ___ |
| g. Alteration of the direction or rate of flow of ground waters? | ___ | ___ | X |
| h. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? | ___ | ___ | X |
| i. Reduction in the amount of water otherwise available for public water supplies? | ___ | X | ___ |
| j. Exposure of people or property to water related hazards such as flooding? | ___ | ___ | X |
| 4. Plant Life. Will the proposal result in substantial: | | | |
| a. Loss of vegetation or change in the diversity of species or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)? | ___ | ___ | X |

| | YES | MAYBE | NO |
|---|---|---|---|
| b. Reduction of the numbers of any unique, rare or endangered species of plants? | ___ | ___ | X |
| c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species? | ___ | ___ | X |
| d. Reduction in acreage of any agricultural crop? | ___ | ___ | X |
| 5. Animal Life. Will the proposal result in substantial: | | | |
| a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)? | ___ | ___ | X |
| b. Reduction of the numbers of any unique, rare or endangered species of animals? | ___ | ___ | X |
| c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals? | ___ | ___ | X |
| d. Reduction of, encroachment upon, or deterioration to existing fish or wildlife habitat? | ___ | X | ___ |
| 6. Noise. Will the proposal result in substantial: | | | |
| a. Increases in noise levels? | ___ | X | ___ |
| b. Exposure of people to severe noise levels? | ___ | ___ | X |
| 7. Light and Glare. Will the proposal produce significant light or glare? | ___ | ___ | X |
| 8. Land Use. Will the proposal result in a significant: | | | |
| a. Alteration of the planned land use of an area, or establish a trend which will demonstrably lead to such alteration? | ___ | ___ | X |

| | YES | MAYBE | NO |
|---|---|---|---|
| b. Conflict with uses on adjoining properties, or conflict with established recreational, educational, religious or scientific uses of an area? | ___ | ___ | X |
| 9. Natural Resources. Will the proposal result in substantial: | | | |
| a. Demand for, or increase in the rate of use of any natural resources? | X | ___ | ___ |
| b. Depletion of any nonrenewable natural resource? | ___ | ___ | X |
| 10. Risk of Upset. Does the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions? | ___ | X | ___ |
| 11. Population. Will the proposal significantly alter the location, distribution, density, or growth rate of the human population of an area or physically divide an established community? | ___ | ___ | X |
| 12. Housing. Will the proposal significantly affect existing housing, or create a demand for additional housing? | ___ | ___ | X |
| 13. Transportation/Circulation. Will the proposal result in: | | | |
| a. Generation of substantial additional vehicular movement? | X | ___ | ___ |
| b. Significant effects on existing parking facilities, or demand for new parking? | ___ | ___ | X |
| c. Substantial impact upon existing transportation systems? | ___ | X | ___ |
| d. Significant alterations to present patterns of circulation or movement of people and/or goods? | ___ | ___ | X |
| e. Alterations to waterborne, rail or air traffic? | ___ | X | ___ |

| | YES | MAYBE | NO |
|---|---|---|---|
| f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians? | — | X | — |
| 14. Public Services. Will the proposal have an effect upon, or result in a substantial need for new or altered governmental service in any of the following areas: | | | |
| a. Fire Protection? | — | — | X |
| b. Police Protection? | — | — | X |
| c. Schools? | — | — | X |
| d. Parks or other recreational facilities? | — | — | X |
| e. Maintenance of public facilities, including roads? | — | X | — |
| f. Other governmental services? | — | X | — |
| 15. Energy. Will the proposal result in: | | | |
| a. Use of substantial amounts of fuel or energy? | — | — | X |
| b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy? | — | — | X |
| 16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: | | | |
| a. Power or natural gas? | — | — | X |
| b. Communications systems? | — | — | X |
| c. Water? | — | — | X |
| d. Sewer (will trunk line be extended, providing capacity to serve new development)? | — | — | X |
| e. Storm water drainage? | — | — | X |

| | YES | MAYBE | NO |
|---|---|---|---|
| 17. Human Health. Will the proposal result in: | | | |
| a. Creation of any health hazard or potential health hazard (excluding mental health)? | ___ | ___ | X |
| b. Exposure of people to potential health hazards? | ___ | ___ | X |
| 18. Solid Waste. Will the proposal result in any significant impacts associated with solid waste disposal or litter control? | ___ | ___ | X |
| 19. Aesthetics. Will the proposal result in the obstruction of any public designated or recognized scenic vista open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view? | ___ | X | ___ |
| 20. Recreation. Will the proposal result in an impact upon the quality or quantity of existing public recreation facilities? | ___ | ___ | X |
| 21. Archeological/Historical. Will the proposal result in an alteration of a significant archeological or historical site, structure, object or building? | ___ | ___ | X |

## X. DISCUSSION OF ENVIRONMENTAL CHECKLIST EVALUATION

All of the items on the checklist marked "yes" or "maybe" are discussed in detail below.

Item 1b. Disruptions, displacements, compaction or overcovering of the soil.

Disruptions and displacements will occur, but only at the existing sites of commercial gravel operations and under the restrictions of their current permits. Temporary overcovering would occur where stockpiled gravel is stored at four sites. After the gravel is moved the land would be graded to its original contours.

Item 1c. Changes in topography or unique geological features.

Changes in topography would occur at the Salt Creek, Tobiasson and Shea sites as up to 20,000 cubic yards of gravel per site would be dumped over the bank in storage areas about 25 feet wide, 20 feet deep and 1,000 feet long. To give an indication of scale, this volume of material would cover an acre to a depth of twelve feet. No removal of topsoil is planned.

Temporary gravel stockpile areas containing as much as 5,000 cubic yards of gravel would be created at the Salt Creek, Highline, Redding Riffle, Turtlebay West and Turtlebay East sites. These stockpiles would be used for no more than six months, and when they are removed the terrain would be graded to the original contours. Where vegetation is removed to make room

for the stockpiles, DWR will revegetate or reseed the affected area.

Item 1f. Changes in deposition or erosion...of a river or stream.

It is not possible to accurately predict the changes in erosion and deposition due to gravel placement. However, the addition of these gravels would provide a missing component of the bedload historically carried by the river. Therefore, the river should not make large adjustments to this new gravel.

Item 3d. Alterations to the course or flow of flood waters.

There will be a small increase in the 100-year flood elevation at all sites due to gravel placement. The reach of the Sacramento River between the I-5 bridge near Anderson and one mile below Keswick Dam was modelled using the "Hydrologic Engineering Center - 2" (HEC-2) methodology and microcomputer program. The maximum rise in water surface elevation predicted at any cross-section was 0.28 feet at the Highline site, and the smallest rise was 0.04 feet at the Tobiasson site.

No increase in the 100-year water surface elevation is allowed by FEMA floodplain ordinances. Therefore, DWR has requested that FEMA obtain an exception to the ordinance through their Washington D.C. office. This process should take between 90 and 180 days.

Item 3f. Discharge into surface waters...turbidity.

There would be no effect upon either dissolved oxygen or temperature caused by gravel placement. There would be some increase in turbidity. To minimize this, all placed gravel will be thoroughly washed. The RWQCB is in the process of reviewing the project and may grant DWR a "Waiver of Discharge Requirements", which would still require DWR to perform all mandated RWQCB testing and attempt to meet all normal discharge criteria.

Item 3i. Reduction in...public water supplies.

If the increase in turbidity above the Bella Vista Pumping Plant (above which are five placement sites) were greater than the level which they can normally filter out, the plant would have to increase the amount of back-flushing of their screens or use groundwater. This should not cause an actual reduction in water supply, but it could increase the cost. It is not expected that turbidity levels would exceed 15 N.T.U.'s. This level would not cause significant filtration problems.

The City of Redding has a water intake plant downstream of the Salt Creek site. Their Public Works Department monitored turbidity during DFG's gravel placement at Salt Creek in 1989 and reported a maximum increase of 5 N.T.U., which is well within the RWQCB requirements of a 15 N.T.U. short-term increase.

Item 5d. Reduction of...existing fish or wildlife habitat.

There would be some unavoidable, short-term reduction in egg

survivability if gravel were placed over existing redds. There are living redds with developing eggs in the Sacramento River nearly every month of the year. Juveniles could also be impacted if they attempt to use the new gravels for cover during placement. These problems would be minimized by working in the "optimum" placement windows selected by DFG, USFWS and NMFS. The windows selected are (1) September 15 to October 15 for Salt Creek, (2) September 1 to October 15 for the Tobiasson and Shea sites, and (3) January through March for the remaining six sites where gravel would be graded underwater. The windows were chosen to minimize impacts on any lifestage of salmon or steelhead, especially winter run chinook. The long-term benefits (increased spawning areas and increased salmon and steelhead populations) greatly outweigh the short-term detriments.

Item 6a. Increases in noise levels.

Truck traffic in residential and public areas near the river would temporarily increase noise levels. However, truck routes through the City of Redding would be approved by the City.

Item 9a. Demand for, or increase in the rate of use of any natural resources.

Around 100,000 cubic yards of spawning gravel would be required during the next two years' work on the gravel restoration project. This gravel must be stream-rounded rock. The three most likely sources for this gravel are (1) the Clear Creek terrace where there are several million cubic yards of dredger tailings, (2) at Cottonwood Creek, in either the stream channel

or terrace and (3) The Thomes Creek stream channel. There are presently large-scale commercial operations at these locations. The project would add to the overall local demand for gravel, but it should not result in any increase in the total quantity of gravel removed from any of these sources. Instead, this demand may slightly shorten their useful life. This means that other, more expensive sources of gravel such as upland quarries will have to be developed somewhat sooner.

A point-by-point discussion of this item follows:

(1) Under natural conditions, gravel from Thomes and Cottonwood Creeks would flow into the river and become available for fishery habitat. Now, however, commercial gravel-mining activities are so intense on these streams that little gravel is recruited by the river except at extremely high flows.

(2) All gravel that is legally available to the commercial operators will eventually be removed from these creeks, regardless of annual fluctuations in demand.

(3) This project will increase the overall demand for gravel, and the result will be a small reduction in the useful life of existing gravel sources.

(4) The spawning gravel restoration work would not increase the ultimate amount of gravel removed from the creek sources.

but it would increase the portion of the total removed which is used for fishery restoration purposes rather than for general construction purposes.

(5) The impact would occur later as gravel from these streams is depleted rapidly. New gravel sources would have to be located sooner. Additional, future sources of gravel are available in the Redding area, but the cost of their development would be more expensive than existing sources.

Item 10. Risk of Upset.

To minimize these risks, project specifications would require clean and leak-free construction equipment. Inspectors would observe operating equipment and require contractors to remove and repair any leaking equipment. Fuel storage tanks and equipment maintenance areas would be located above the floodplain and away from the river. Contractors would be required to adhere to safe construction practices.

Item 13a. Generation of substantial additional vehicular movement.

Most of the noticeable increased traffic would be through the City of Redding. It is not anticipated that the gravel truck traffic would slow traffic on major highways and arterials. The most heavily impacted areas would be three residential areas: North Bechelli Lane, Riverside Avenue and Park Drive. All truck routes, tonnages and frequencies of travel would be approved by the Redding and Shasta County Public Works Departments. Most of

the gravel hauling will occur outside of the heavy tourist traffic period from June through August.

As an example of the traffic frequency generated by the project, a site that accommodates 20,000 cubic yards of gravel would require 1,000 truckloads of gravel. Trucks would arrive at a maximum of one every 7-1/2 minutes at the Salt Creek and Shea sites, one every ten minutes at the Redding Riffle and Turtlebay West sites and one every fifteen minutes at the Diestelhorst, Market Street and Highline sites. The frequency would be reduced to one per hour at the Turtlebay East site, to reduce the traffic impact on North Bechelli Lane where many homes and apartments are located.

Item 13c. Substantial impact upon existing transportation systems.

The potential impact to transportation systems would be damage to road and street surfaces in residential areas. Physical degradation of streets is not expected, but if it occurs repairs would be made using fishery restoration project funds. Some dirt roads may require the addition of a gravel base, which would be placed during the trucking phase, as needed.

Item 13e. Alterations to waterborne...traffic.

There is recreational fishing and boating throughout the project area. There would be tractors spreading gravel in the river at six of the nine sites, but the tractors would generally be in shallow water that boaters avoid. Warning signs would be posted

upstream and downstream of all sites and at all public boat ramps when equipment is working in the river.

Item 13f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians.

There would be no increased risk for automobiles, but gravel trucks must cross the Redding Bicycle Path to gain access to the Salt Creek site. A flagman would be posted at the trail crossing to stop pedestrian traffic when trucks cross, and warning signs would be posted on the trail. DWR is coordinating with the City of Redding Planning Department to assure public safety on the trail.

Item 14e. Maintenance of public facilities, including roads.

A section of the bike trail at the access road to Salt Creek would have to be reinforced to provide long-term truck access without damaging the asphalt path. This rebuilding would probably be done by the City of Redding and paid for by DWR. A future addition to the bicycle path system on the north bank near the Highline site would also require a truck crossing section.

Item 14f. Other governmental services.

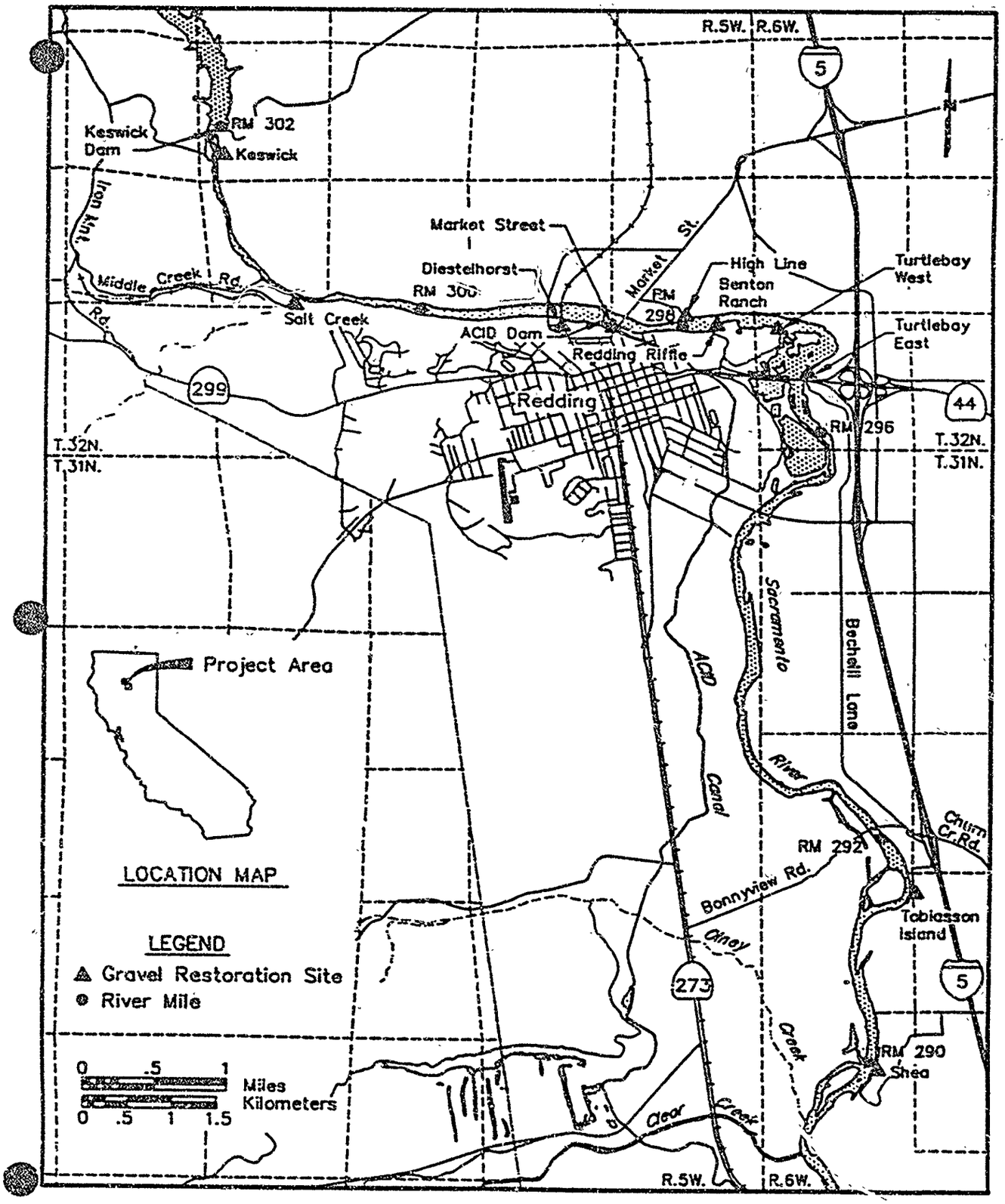
All cooperating and assisting agencies will spend time reviewing, permitting and/or monitoring this project. Money has been set aside for these services at the state and federal levels. At the county and city levels, these costs would not be paid for directly. However, the anticipated increases in salmon and steelhead populations due to the project should augment local

tourism, thus increasing tax revenues to both the City and County.

Item 19. Aesthetics.

During gravel placement in the City of Redding, some negative short-term aesthetic changes will occur. Gravel will be stockpiled at some sites and will be visible for several months prior to placement. Loaders and/or dozers will be working at sites for up to 90 days, placing gravel in the river. The visual impacts of these activities would be localized and relatively short-term. Judging from similar work in other areas, people will react favorably if they are aware of the long-term environmental benefits resulting from the work.

Figure 1




Upper Sacramento River Gravel Restoration Sites

CALENDAR PAGE 207
MINUTE PAGE 2008

State of California

The Resources Agency

# Memorandum

To : Mr. Doug Denton
Department of Water Resources
Northern District

Date : April 3, 1990

From : Department of Fish and Game

Subject: Winter Run Consultation for the Upper Sacramento River Gravel Project

This is to confirm the results of the March 9, 1990 field inspection for the proposed gravel placement sites on the upper Sacramento River. Representatives of the DFG, DWR, USFWS and NMFS were in attendance. The purpose of the inspection was to arrive at a consensus of how and when to place gravel in the river without impacting winter-run chinook salmon and with the minimum amount of interference with the other runs of salmon.

The following describes the consensus for avoiding impacts to winter-run chinook at each site.

1. Salt Creek
   Ten to twenty thousand cubic yards of gravel will be stockpiled during the summer months. The gravel will be added to the river by bulldozer or front end loader between September 15 and October 15.

2. Diestelhorst Site
   Between January 1 and March 31, a maximum of ten thousand cubic yards of gravel will be spread on the exposed terrace above the low water line present at that time.

3. Highline Site
   Between January 1 and March 31 a maximum of ten thousand cubic yards of gravel will be spread into the river channel beyond the waterline present at that time.

4. Redding Riffle Site
   Approximately ten thousand cubic yards of gravel will be spread into the channel about two thirds of the distance across the channel. Because of the potential for some late-fall run salmon spawning in this area, a site inspection will be made at late December. If there is no significant spawning activity in that time, work can start January 1. If significant late-fall spawning has occurred, work may be delayed until February or March.

5. Turtlebay West Site
   Between January 1 and March 31 up to ten thousand cubic yards will be spread into the channel below the waterline. Work will be confined to the area downstream of the zone of riparian vegetation.

6. Turtlebay East Site
Between January 1 and March 31 up to ten thousand cubic yards of gravel will be spread into the channel below the water line. Minimum disturbance to riparian vegetation will be allowed.

7. Tobiasson Site
Between September 1 and October 15 up to twenty thousand cubic yards will be dumped along an eroding bank for distribution by higher flow events.

8. Shea Site
Between September 1 and October 15 up to twenty thousand cubic yards will be dumped along the eroding east bank levee separating the river from Shea Sand and Gravel. Gravel will be distributed by higher flow events.

All other provisions for gravel placement activities such as gravel sources, gravel washing, etc., should follow previous practice for gravel placement. Measures will be implemented to minimize disturbances to riparian vegetation at all sites.

Thanks again for all year efforts in putting this project together. Feel free to call me if you have any questions.

Jim Schuler
Fishery Management Supervisor

cc: Mr. Roger Wolcott-NMFS

Mr. Dave Vogel-USFWS

Mr. John Hayes-Region 1

Mr. Phil Warner-Region 1

Mr. Gary Stacey-Region 1

Mr. Dick Painter-IFD, Red Bluff

SCHULER:dc

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