

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?
- c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?
- d. Reduction in acreage of any agricultural crop?
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)?
- b. Reduction of the numbers of any unique, rare or endangered species of animals?
- c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?
- d. Reduction of, encroachment upon, or deterioration to existing fish or wildlife habitat?
6. Noise. Will the proposal result in substantial:
- a. Increases in noise levels?
- b. Exposure of people to severe noise levels?
7. Light and Glare. Will the proposal produce significant light or glare?
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?

- | | 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. <u>Natural Resources</u> . 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. <u>Risk of Upset</u> . 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. <u>Population</u> . 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. <u>Housing</u> . Will the proposal significantly affect existing housing, or create a demand for additional housing? | — | — | X |
| 13. <u>Transportation/Circulation</u> . 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. <u>Public Services.</u> 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. <u>Energy.</u> 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. <u>Utilities.</u> 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)?
 - b. Exposure of people to potential health hazards?
18. Solid Waste. Will the proposal result in any significant impacts associated with solid waste disposal or litter control?
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?
20. Recreation. Will the proposal result in an impact upon the quality or quantity of existing public recreation facilities?
21. Archeological/Historical. Will the proposal result in an alteration of a significant archeological or historical site, structure, object or building?

CALENDAR PAGE 197
MINUTE PAGE 1998

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 Thomas 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 Thomas 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.

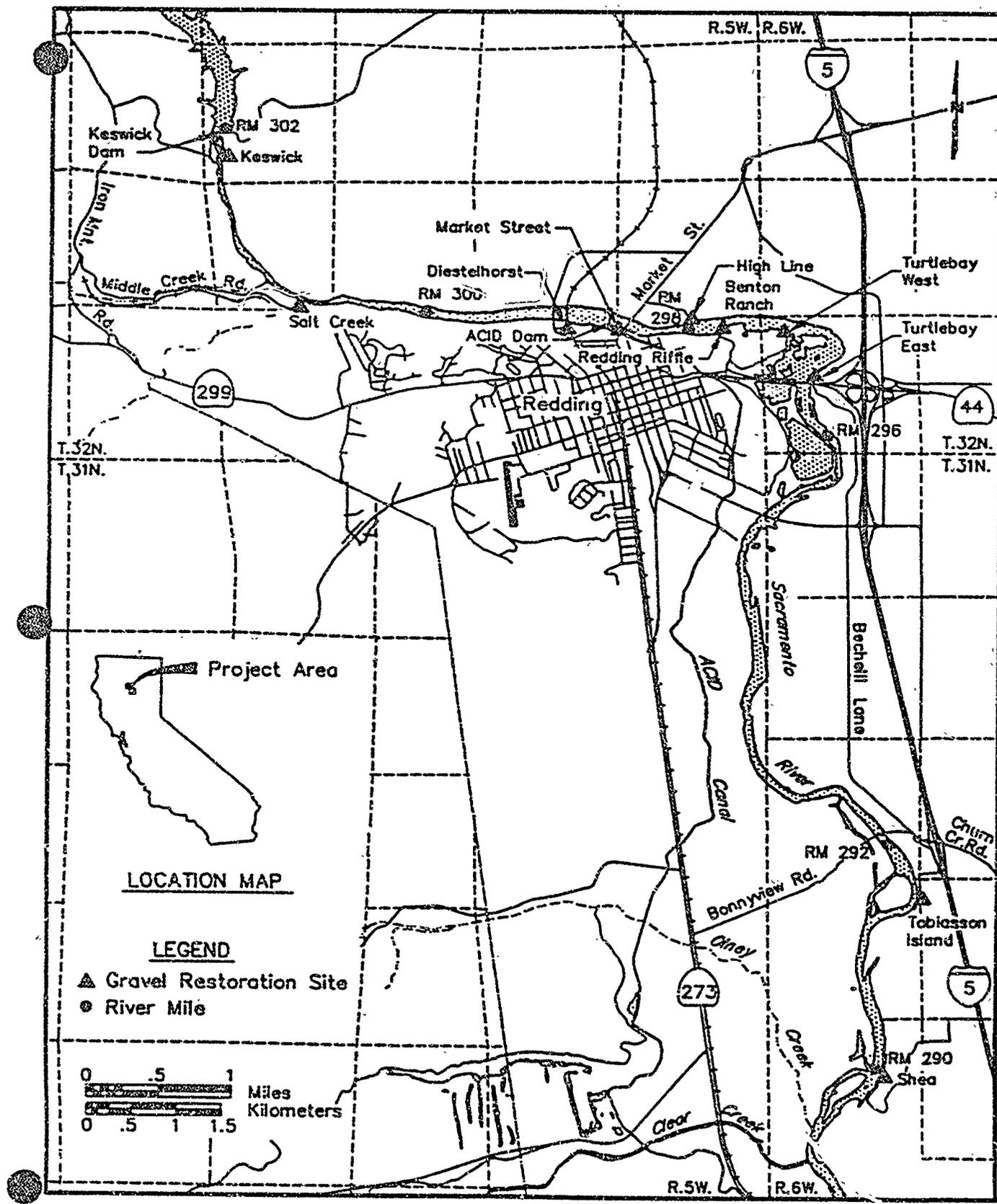
All cooperating and assisting agencies will spend time reviewing, permitting and/or monitoring this project. Money has been set aside for these services at the state and federal levels. At the county and city levels, these costs would not be paid for directly. However, the anticipated increases in salmon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

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.

CALENDAR PAGE	208
MINUTE PAGE	2009

Mr. Doug Denton

-2-

April 3, 1990

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. Toblason 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
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

File: IFD, Schuler-IFD, Chron

CALENDAR PAGE	209
MINUTE PAGE	2010