ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

Under this project the potential annual gravel extraction rate (the total of all permits) exceeds historical extraction rates. If the potential rate were to occur each year regardless of replenishment, the impact would be to lower the average elevation of the bed of the river from the mouth of the Van Duzen River to Cock Robin Island bridge and upstream on the Van Duzen and Eel River to some undetermined length. The last high flow on the Eel River to move any amount of material occurred in February of 1986. Therefore, there has been a cumulative effect of five years of gravel removal through the 1991 season.

Fishery Habitat.

As mentioned earlier in the Environmental Setting, the Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California. Therefore, great care must be taken during the gravel extraction process to minimize potential impacts on the fishery habitat. Gravel extraction normally occurs from about May 1st through October 1st. In the past, extraction activities occurred as early as March or April in years where low flow occurred early in the season. By restricting extraction to the period May 1st through October 1st the potential for impacts on migrating fish is minimal.

The early season restriction is especially important when summer bridges are used. The young chinook salmon migration downstream, after they emerge from their gravel beds, begins in late February and March, peaks in April or May, and is completed by late July. Therefore, it is important that summer bridges be installed with great care and that water quality be maintained in the low flow channel during this period of time.

The construction of summer bridges requires minor approach fills that may encroach on the channel but must not intrude upon the low flow channel. Heavy equipment must sometimes enter the river during the bridge installation process. Early in the season this equipment could endanger the very small fingerlings that utilize the shore line to migrate downstream.

Most bridges consist of flat cars about 90 feet in length. As long as a flowing channel two feet or more in depth and 60 to 80 feet wide exists, an adequate migration route will be available for fish.

Gravel skimming operations stay clear of the low flow channels and should have no measurable impacts during the extraction period. Adverse effects such as channel braiding may result from widening and flattening of the low flow channels during skimming operations. This is the main reason for recommending a 3 percent slope away from the channel for skimming operations.

As mentioned earlier, trenching has been permitted on the assumption that it will not significantly degrade and may enhance fishery habitat. These trenches, up to 1,600 feet long in the project area and 15 feet deep parallel the existing channel on the inside of bars, and are assumed by the Department of Fish & Game, to have minor adverse impacts on fish.

Two fisheries concerns have been raised regarding trenching. The first was that during the trenching process much of the fine silt and clay drops out of the bucket as it is raised full of gravel from below water. Additional fines drain out of the wet gravel and sand when it is temporarily stockpiled next to the trench to allow the water to flow out. The concern is that there is a minor concentration of fines which would be picked up by the river when the pond berms are broken at the very start of a rise in flow of the river. This potential impact is more likely if the rise in the river is very minor, such that the normal low flow channel connected with the trench water in a manner that would destratify the pool and cause fine silts to rise up from the bottom and flow out into the low flow channel.

It takes a substantial rise in the river to break through the gravel berm separating the trench from the river. When there is a substantial rise in the flow of the Eel River the concurrent suspended sediment is so high that the fines found in and adjacent to the trench pools would have negligible effects. However, a proper monitoring program during small flow increases would provide evidence regarding this potential problem.

Another concern expressed about trenches is that when the river experiences a rise in flow the low-flow channel may become completely transferred to the trench. Then, as the river drops back down, the trench becomes the channel and the original low-flow channel gets left isolated and may ultimately dry out. Should this occur, the invertebrates that were living in the low-flow channel would be lost, and thus

would represent a loss of fishery habitat. This type of impact was observed on the Mad River. This type of potential impact is temporary as high flows carry invertebrates downstream and restock the existing habitat. The bed of the Eel River in the project area contains a high percentage of fine material filling the interstices of the larger cobbles. This tends to reduce the habitat for invertebrates and the potential for this impact on the Eel River.

It is known that summer showers such as those that occurred June 29th and 30th, 1992, can cause the lower Eel to rise and fall. The low-flow channel can become connected to the trench, thereby allowing fingerlings to get into the trench. As the river level drops, the fingerlings can become trapped in the trench. A special effort would have to be taken to remove them. The gravel operators and the DFG will be most familiar with what is happening in this regard. The River Management Program could include procedures, approved by the Department of Fish and Game, to be followed and implemented by the operator to avoid these problems.

Because gravel extraction trenches are 10 to 15 feet deep, they may provide resting pools for fish migrating upstream. However trenches are rather sterile and do not create ideal habitat. Over the memorial day weekend in May 1992, Terry Roelofs and Ron LeValley snorkeled trenches on Mad River and observed no fish using the trenches and a one inch film of fine silt covering the bed of the trenches. Other fisheries professionals have also have snorkeled the trenches as well as the length of the lower Mad. Steelhead were observed holding in natural pools and not in the trenches. A green sturgeon was reported in the trench at the Emerson Bar on the Mad River during the summer of 1992.

The bed of this portion of the river contains a high percentage of silt and sand, ranging from 22% to 59%, thereby making most of it poor habitat for fish to spawn or to spend much time in. The majority of the anadromous fish of the Eel River use the project area as a migration route for getting up and down the river. The project area, in its present condition, is of little significance to the seven species of anadromous fish as a spawning area. It is important to these fish to have a quality migration route with proper depth and clean water. Photo No. 17 shows a riffle area near Site No. 4.

Portions of the project area contain braided low-flow channels. If gravel extraction and bed lowering resulted in a deeper, confined, low-flow channel the impact on fish could be favorable. Fish migration up and down the river would be enhanced in a single deeper channel.

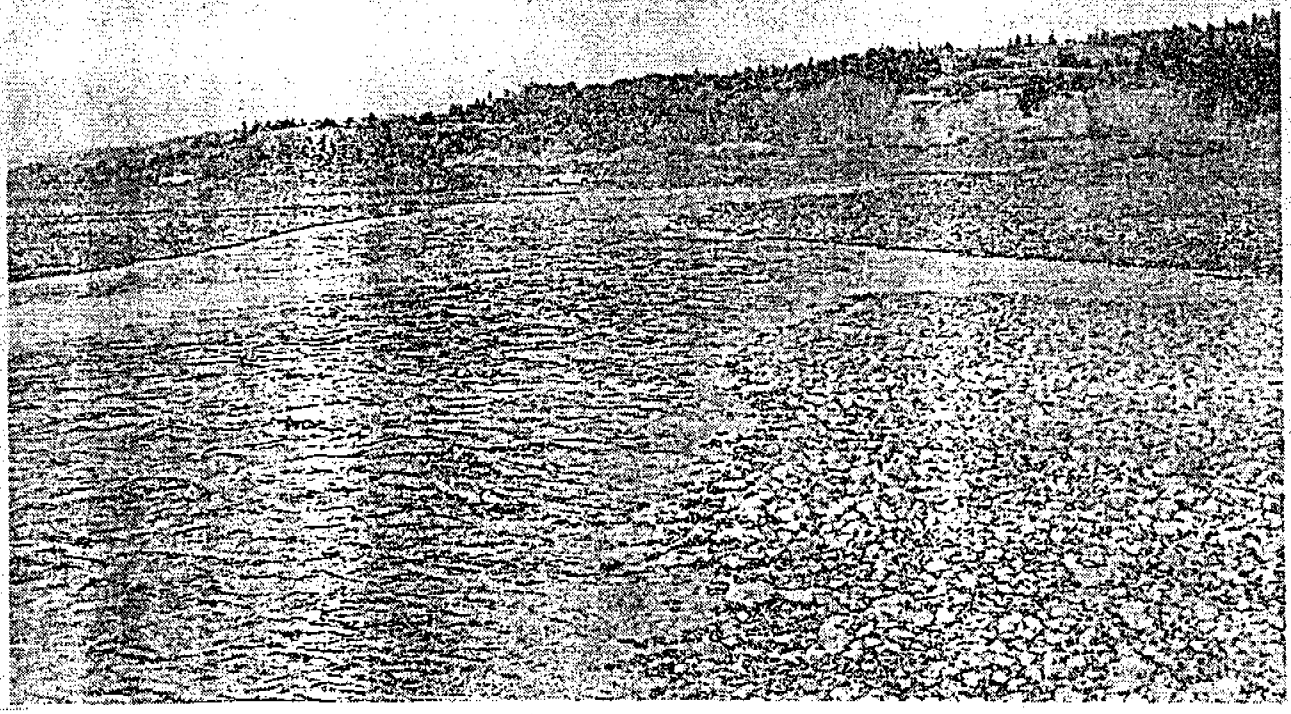

Photo #17 - View north of the low flow channel of the Eel River near site #4.

Deep pools are no longer found in the project area. It should be noted that back in 1951 Murphy & DeWitt found that steelhead remained in residence in pools and riffles below the Van Duzen River. That was in a time when some deep pools occurred below the Van Duzen River. They also observed schools of 50-100 chinook feeding in Singley and Dungan pools throughout the summer. Puckett, in 1977, found no chinook salmon in these areas after periods of downstream migration in early summer.

Green sturgeon were observed rolling in the Dungan pool in June and July by Murphy & DeWitt (1951). They also saw a few juveniles migrating downstream. The filling of this pool and others after the 1955 and 1964 floods limited the habitat available for green sturgeon in this river.

The few pools left in Lower Eel River must be maintained because salmon utilize the pools between the riffles as holding areas until there is sufficient flow from fall rains to permit passage upstream. There may be some opportunity for gravel extraction operations to create temporary pools in the project area that could benefit fisheries values.

Higgins (1992) noted in his study of the Eel River estuary that the decrease in amount of deep water habitat probably decreased substantially the survival of out migrant juvenile chinook salmon. The decrease in the tidal prism decreased suitable subtidal habitat, especially in the sloughs. The filling in of the Eel estuary has lead to less habitat and a shorter rearing time for juvenile chinook before entering the ocean. It is critical for juvenile chinook to spend extended time rearing in the estuary to a size that will enable a better chance of survival in the ocean.

A major problem has recently been identified by studies under contract to the Eel River Conservation District. Particle sizes of sediments deposited in the Eel River estuary are larger in the most recent decades than they were in the preceding 2000 years. A possible explanation for this may be that in recent decades, the Eel River watershed has been dramatically de-vegetated by logging, road construction and burning, resulting in more rapid runoff and a higher energy river system capable of carrying larger sediment particles further into the estuary. The construction of levees and bank revetment projects also confines the flow and increases the energy available to transport coarser sediment into the lower Eel. Deposits of these larger particles within the Eel River estuary in the most recent decades resist transport out to the ocean by tidal action exacerbating a build up of sediment in the estuary and subsequent loss of tidal prism.

The quality of the estuary is also very important because the annual run of mature chinook salmon enter the estuary from the ocean in late August and September and spend their time in pools below Fernbridge until the first large storm causes the river to rise so they may migrate upstream.

Therefore, any gravel and sand removal that tends to reduce deposition in the estuary should enhance the habitat available for anadromous fish and invertebrates. If the Lower Eel River were mined for several years, the decrease in bed load material moving down to the estuary would increase the tidal prism and volume of the estuary. This would increase the amount of fishery habitat and invertebrate habitat.

Bridge Safety:
The potential critical impact associated with lowering the bed would be to the integrity of the bridge piers at Highway 101 on the Van Duzen, Highway 211 at Fernbridge, and possibly at the Cock Robin Island bridge. Other facilities that could be impacted include the railroad bridge over the Van Duzen River next to Highway 101 and the Sandy Prairie Levee and Grizzly Bluff Levee.

Of interest, Dames & Moore calculated the so-called natural scour depth that would occur at cross-sections No. 12 and No. 13 during a flood with a flow of 1,250,000 cubic feet per second. The natural scour depth is the depth below the current bed at which active bedload movement occurs. Using the six methods mentioned in Table 12, originally developed by the U.S. Bureau of Reclamation in 1984, they calculated the scour depth was equal to 24.6 feet. This would lead one to conclude that flows of a slightly lesser magnitude would scour the bed down to the bottom of most of the current trenches which are about 15 feet deep. When high flows recede deposition of bedload occurs and may possibly result in little net change in bed elevation after the flood passes. Dames and Moore concluded that their gravel extraction scenario would not have an adverse effect on the safety of Fernbridge nor on the proposed ARCO pipe line crossing.

Bedload transport is difficult to predict or measure. In the absence of monitoring it is futile to attempt to measure or calculate the average amount of sediment moving into the project area. The only way to get a handle on what is happening to the river bed is to implement a monitoring program. This program will have to be funded by the gravel operators with their share being proportional to the amount of gravel they remove in a particular season.

TABLE 12
ESTIMATED NATURAL (NORMAL) SCOUR DEPTH

METHOD*	ESTIMATED SCOUR DEPTH BELOW BED (ft)
Abbot's Empirical Equation	11.7
Neill's Regime Equation	31.3 to 37.6
Lacey's Regime Equation	8 to 16
Blench's Regime Equation	31.9
Mean Velocity and Water Depth Approach	12 to 24
Competent Velocity Method	26.3
Average	24.6

*USBR, 1984. Source: Winzler & Kelly 1991

Following a few seasons of gathering monitoring data, the County Planning Department and the resource agencies with jurisdiction should be able to flexible site specific management guidelines to determine actual variable annual or periodic gravel extraction rates that can occur within the project area without damaging the integrity of the fishery habitat, other river resource values, and river morphology.

Wildlife

The main potential wildlife impacts result from the effects of gravel extraction activities on riparian vegetation and from high noise levels. There have been some past impacts on riparian vegetation from overflow of stockpiles into the vegetation. As mentioned earlier, most of the Eel River Delta (20,000 acres) was covered with trees in 1850. Following the removal of most of the trees, the actual acreage of riparian vegetation was limited to the banks of the Eel River and in some of the swales from old river meanders.

The cumulative impact over the years has resulted from the removal of portions of the riparian vegetation for some of the processing yards. The existing gravel operations do not require removal of any riparian vegetation in order to continue. All of the river access points are in place.

If the gravel extraction results in less braiding and a deeper, confined low-flow channel there could be some impacts on the riparian habitat which is so important for the wildlife of this region. The impacts on wildlife would be minor. If a narrower low flow channel became established, ephemeral riparian vegetation would grow closer to the flowing channel, thereby providing more cover for wildlife, especially when they are going for a drink.

Riparian vegetation along the current banks could be impacted. When the channel bed is lowered the adjacent groundwater table is likely to be lowered which could cause stress to adjacent riparian vegetation during the dry season. This effect could be mitigated as the riparian vegetation community expands towards the lower bed and as roots tend to follow the groundwater table.

The new operation at Site No. 12 (Arcata Readimix) may require some minor removal of riparian vegetation if turnouts need to be added along the haul road.

The new proposed operation at Site No. 13 at the mouth of the Van Duzen River would require removal of riparian vegetation only if the point of access off Highway 101 needs to be

changed or if a crushing area is to be created. These details will be covered in the supplemental EIR.

Impacts may occur to the Red Legged Frogs at Site No. 12 and the Yellow-legged Frogs at Sites No. 8 and No. 9. To assure that these candidate species are protected during future operations, the U.S. Fish & Wildlife Service Endangered Species Division recommends that the Conditional Use Permit, 1603 Streambed Alteration Agreement, Coastal Development Permit, State Lands Commission Permit and Section 404 contain a condition that the operations activities stay 150 to 200 feet clear of the ponds and embayments where these species were observed.

To protect the Western Pond Turtle, the Department of Fish & Game wardens would need to keep an eye out for habitat used by the turtle. For example, a small pond or backwater area may exist after winter flows recede. Special mitigation should be require the operator to keep 100 feet away from these types of habitat.

The other effects relate to noise levels and dust generated by heavy equipment passing to and from the river through the riparian zone to the processing yards, and the crusher and batch plants. Field observations by staff of the County Public Works Department noted that large hawks were utilizing trees in the riparian vegetation zone within a few hundred feet of a batch plant and crusher in full operation while there were much other quieter riparian areas available to them along the river.

The Prairie Falcon, if it were to use the project area, would normally be there between October 1st and May 1st and gravel extraction does not normally occur during this time period.

According to an observation made by J. Sterling the Snowy Plover, an uncommon local migrant and winter visitor, might rarely utilize the gravel bars on the Lower Eel River below Fernbridge. Their normal habitat is the ocean sand beaches where they breed, nest, and forage.

Concern was expressed that gravel and sand removal from the Eel River could lead to depletion of the beaches north and south of the Eel River mouth which would decrease the habitat of the plover. Historically there has been an over abundance of sand moving down to the mouth area as evidenced by the filling in of the estuary. The beach width is not showing any trend towards decreasing.

Osprey which are a common summer resident have been seen along the Eel River. They normally do not nest along this stretch of the Eel River. Nesting colonies have been observed in the

upper parts of Elk River and Freshwater Creek. it is not known for sure what the impact of gravel extraction would be on an osprey. The County crew that operates the crusher had the experience of an osprey nest within 700 feet of the crusher on a gravel bar at Orleans. This particular osprey insisted on fishing right next to the crushing operation.

The Cooper's Hawk is an uncommon resident normally seen in the winter time. It has been recorded in all types of woodlands. There have been no recorded sites of them breeding and nesting in and along the narrow riparian corridor along the east side of the Eel River in the project area.

The Sharp-shinned Hawk is a common migrant and winter visitor, which means it would potentially be in the area when the gravel extraction activities on the bed do not occur.

The Northern Harrier is also a common migrant and winter visitor, and prefers open habitat such as lowland pastures or marsh lands of the coastal plain. since it is a winter visitor, it would be potentially be in the project area when there is no gravel extraction occurring. As mentioned earlier, some crusher operations and batch plants run throughout the season. This has occurred mostly at Site No. 2, No. 3, No. 4, No. 5, No. 8 and No. 9. It would seem reasonable that a constant noise generated by these plants would tend to keep birds from breeding and nesting nearby.

The Golden Eagle is a rare to uncommon resident and breeder in the County and has been seen soaring over open woodlands, forests and grasslands in the inland higher ridges. Some have been observed in the coastal low lands between September and May. They have not been recorded as nesting in the riparian area in the project region. Because Highway 101 traverses along the east edge of the project area and gravel processing plants at Sites No. 2, No. 3, No. 4, No. 5, No. 8 and No. 9 tend to run year-round, it is improbable that Golden Eagles would construct a nest and breed in this area.

The Merlin is an uncommon migrant and winter visitor, but has been seen along the Eel River by Stan Harris. For the reasons mentioned previously, it is doubtful that they would select the thin riparian edge along the east bank of the Eel River in the project area.

The Common Loon is a common migrant and winter visitor. Main migrations occur in early September/October when they arrive and April through May when they leave. Fortunately gravel extraction would not normally be occurring on the river bed during most of the time that the Loon could potentially utilize pools in the Lower Eel River.

The Short-eared Owl is an uncommon to common migrant and winter visitor. They normally arrive in October and leave by early May, which means they would not normally be in the project area during the time when gravel is being extracted. Due to noise from gravel processing and batch plants during the winter season, it is probable that they would not select the riparian vegetation near these processing centers for nesting and breeding.

The Yellow-breasted Chat tends to use well developed riparian cover along streams in the summer. They could be attracted to the riparian zone on both sides of the river through the project area. It is probable that they would not select a nesting site near the processing plants because of the noise.

The Yellow Warbler is a common summer resident and breeder associated with alder, cottonwood, and willow stands in riparian areas. It is probable that they utilize the riparian areas along the west side of the project area where there is very little human activity.

The Peregrine Falcon has been observed many times on the Eel River Delta. They feed on shore birds and other water birds. They are an uncommon migrant and winter visitor. They would not nest in the riparian vegetation adjacent to the project area.

The official Spotted Owl inventory of the Department of Fish & Game was reviewed and it shows that no spotted owls have been observed in the project area on either the Eel River or Van Duzen River. If, in the future, nests or activity centers are discovered within 1/4 mile of a project site, the owls would be impacted by the noise of gravel extraction and processing equipment during the last month of their breeding season. The breeding season is March through July.

Site No. 11 operated by Tom Bess is fully permitted. Site No. 10 is a gravel extraction project proposed by Jack Noble. The U.S. Fish & Wildlife Service requires a spotted owl survey be conducted in this area in addition to any done by Pacific Lumber Company and the Department of Fish & Game. The survey can only be done February through April by a qualified biologist, following the March 1992 protocol of the U.S. Fish & Wildlife Service. This survey could be done during preparation of the supplemental environmental document for Site No. 10.

There is no historical data on populations of the 13 birds mentioned above along this portion of the Eel River. No statement can be made as to whether the gravel extraction activity has affected their numbers over time (Stan Harris, pers. comm. 1992).

Impacts on the species of mammals that have been observed in the riparian corridor through the project area would be related to noise, ground vibration and dust.

Most of the riparian area in the Lower Eel River project area is opposite Sites No. 4, No. 5 and No. 6 with the nearest point being 1,800 feet. Young riparian vegetation exists on islands in the braided section between Sites No. 3 and No. 5. The lowest quality riparian vegetation occurs along the east side of the river along Sites No. 2, No. 3 and No. 9. A small fringe of riparian vegetation occurs at Sites No. 10 and No. 11. Because of the small amount of riparian vegetation adjacent to existing operations and the amount of habitat removed from use due to noise, it was determined that impacts on wildlife from the existing projects is insignificant. Impacts on wildlife from the proposed processing plant on the west side of the river for Site No. 6 would create significant adverse effects on wildlife. However, if the west side site is used only for storage, then the impact of noise on wildlife will be much less.

Viewshed

Most of the traveling public sees a portion of the Eel River while passing over the river on Fernbridge. Because the bridge is narrow drivers must pay fairly close attention and therefore passengers are the only ones allowed a long look up and down the river. Prior to 1969 the Singley Bar operation had many stockpiles and equipment across from Site No. 1. Site No. 2, after 1969, was involved with extraction off the bar. These areas would have been most visible to those utilizing Fernbridge.

Sites No. 2, No. 3 and No. 4 are visible from the southbound lanes of Highway 101. Sites No. 2 and No. 3 have had gravel processing yards and equipment in existence for over 20 years. The processing yard at Site No. 4 is relatively new. The large stockpiles at Site No. 4 are a new visual item seen from Highway 101.

As mentioned earlier, the natural condition of the gravel bars is changed by skimming and trenching. Viewshed impacts would be experienced by those that use the river for recreation and sports fishing. The processing areas and stockpiles of Sites No. 2, No. 3, No. 4, No. 5, No. 8 and No. 9 are visible from certain parts of the river bed. The proposed processing plant for Site No. 6 next to the levee would be visible both from the river bed and Sandy Prairie Road. The stockpiles at Site No. 9 are visible from Highway 101, but they are not a prominent feature.

Operations at Sites No. 10 and No. 11 on the Van Duzen River are only visible to users of the river bed. Very little of

Site No. 11 is visible from State Highway 36. The processing plant and stockpiles only cover a couple of acres.

The most visible features of gravel extraction from the river bed are the temporary stockpiles related to the trenching operation and summer bridge. The impact of these features on sports fishermen and recreationists is difficult to assess. Regarding the Wild and Scenic Rivers Act, it is reasonable to assume that this particular stretch os the Eel River does not possess extraordinary scenic views. However, fall views are quite scenic when viewed from Fernbridge and from the top of the east bank of the river.

Archaeological Resources

Of the eight archaeological sites that were originally in the project area in the 1850's, as determined by Loud during his study in 1913, none exist today. Massive changes in river channel location have occurred along with changes in river bank. Many of the original sites were located on the bank of the original 1850 channel. Most were wiped out in the 1861/62 flood which was similar to the discharge which occurred in 1964. Therefore, the gravel removal and processing operations will not impact archaeological resources.

Flood Control

The removal of approximately 1,480,00 cubic yards per year from the project area could assist in flood control if the bed were lowered to allow the channel to carry more water before it overflowed its banks. The potential negative effect would be if the channel morphology were changed such that the river attempted to scour one bank or the other. The current approach of trenching on the inside of bars and curves may maintain the current channel in its present location for a longer period of time.

The concept of providing flood control through gravel removal should be approached carefully. It is very difficult to decide which portions of the river bed can be removed to achieve flood control without creating a multitude of significant adverse effects. For example, if it were decided to dredge a new floodway channel on the west side of the river channel opposite Site No. 3, No. 4, and No. 5, the river may, during the next large flood, following completion of the new floodway, be induced to change course and flow around the west side of the bridge at Fernbridge, adopting its pre 1861/62 channel.

The incremental benefit of flood control would be very small. A study by the Corps of Engineers in 1971 showed that levees would have to be built from the Van Duzen River to the mouth of the Eel River and a channel created by removing 40 million

cubic yards of material to provide a significant amount of flood control.

Groundwater Recharge and Water Supplies
The community of Fortuna has wells approximately 3,000 feet inland from the Eel River bed. The water levels in these wells tend to fluctuate with the change in water level of the Eel River. The current and proposed gravel extraction operation should have negligible effect on groundwater recharge and water supplies.

Traffic
The current operations generate a wide range in traffic. The Arcata Readimix operation at Site No. 12 could generate a maximum of 166 truckloads per day hauling 1660 cubic yards in 10 yard trucks. Operating from June 1st through October 1st, 5 days per week, would provide about 90 days to remove 150,000 cubic yards.The truck trips per day would equal 332. Operating from 8:00 AM to 6:00 PM would result in 33 movements per hour at the intersection of Waddington Road and Highway 211. This means a truck would leave or enter this intersection every two minutes.

Sight distance is very good at this intersection. Passenger cars would need a sight distance of at least 520 feet on Highway 211. A semi-trailer needs 700-800 feet sight distance on Highway 211. These are distances required for the truck driver turning left onto Waddington Road from Highway 211.

Highway 211 carries a traffic volume of about 4,800 vehicles per day in this vicinity and a maximum hourly volume of 670-690 vehicles per hour. The 33 truck movements per hour would effect this intersection to a minor degree and cause drivers on Highway 211 to experience a service level between A and B.

The traffic generated by Trutalli at Site No. 1 is too minor to be of any significance. His haul road is the same as that used by Arcata Readimix.

If the future contractor operating Site No. 2 chooses to move gravel out of the County by rail, the proposed removal of 200,000 yards per year from Site No. 2 by rail would generate one train per day of 30 cars each running south. If they choose to remove the gravel by barge, it would result in one train per day of 30 cars moving north to Fields Landing and off-loading the gravel with conveyor belts onto barges which would generate a few barge loads of gravel moving out of Humboldt Bay. The railroad and Humboldt Bay can easily handle the increased traffic that would be generated from Site No. 2.

Traffic from Site No. 3 would be high if the gravel went out by truck. However, most of it goes out by rail. Wes Nally

estimated about three trucks per day leave the site during construction season. Highway 101 is used as their main haul route.

Site No. 4 can generate up to 50 trucks per day. These trucks utilize Highway 101 as a haul route both north and south and enter Highway 101 at the 12th Street interchange. This interchange can easily handle this traffic load.

The Mercer-Fraser operation (site No. 5) will generate an average of 52 trucks per day and a maximum of 100 trucks per day. They are busiest from June to mid October and average some 75 trucks per day during that period. They use Highway 101 north and south. The freeway intersection is capable of handling this load of 75 trucks per day plus the 50 trucks per day from Site No. 4.

Site No. 6 (Land) is a proposed operation at the south end of Sandy Prairie Road. This is a proposed project still under review by the Humboldt County Planning Department. Traffic details are not clear, so an estimate must be made of the average number of trucks per day that would use the Sandy Prairie Road to the freeway interchange. Based on traffic generated from existing operations of similar size, it is predicted that an average of 75 trucks per day would result from this operation. This load must be added to that of Sites No. 4 and No. 5. The total average number of trucks per day from Sites No. 4, No. 5, and No. 6 equal 200. This would be 20 trucks per hour in a 10 hour day or about one truck every three minutes. The freeway intersection on Highway 101 at Sandy Prairie Road is capable of handling this total load, as is Highway 101. A service level A should still occur on Highway 101 because of the existing acceleration lanes for trucks entering Highway 101.

The operation at Site No. 7 uses Drake Hill Road and Highway 101 as a haul route. Dick Ehrhardt, the operator, estimated he generates an average of 8-10 trucks per day and a maximum of 40 trucks per day for short periods. His annual volume is 5,000 cubic yards. The maximum traffic load of 40 trucks per day in a 10 hour work period would produce 4 trucks per hour or 1 truck every 15 minutes. Sight distance required is about 500 feet for passenger vehicles and 700-800 feet for semi-trailers to avoid having a problem with a loaded gravel truck entering Highway 101 off Drake Hill Road. These site distances exist at this intersection. For trucks turning left(north), there is an acceleration lane. Slow moving trucks have an adverse effect on vehicles on Highway 101 moving along at 55-65 mph. The effect is to lower the service level to a level between A & B, which is not a significant adverse effect.

Charlie Hansen's operation at Site No. 8 uses a private graveled road from the processing yard to Highway 101. The intersection consists of Sandy Prairie Road, the private graveled road, the entrance to the restaurant and truck shop, and Highway 101. With an annual volume of 75,000 cubic yards, it is estimated that the average traffic load is about 75 trucks per day during the busy season (June to mid October). Staff of the traffic division at Caltrans are familiar with this intersection and do not currently have any serious concerns. Most of the traffic is associated with the restaurant and truck service center.

Site No. 9, Eureka Sand & Gravel, uses Fowler Lane (private road) as the haul route to Highway 101. State Highway 36 is directly opposite Fowler Lane. Rob McLaughlin of Eureka Sand & Gravel stated his operation generates 30 to 35 trucks per day on the average. In addition, the operation can include 15-20 concrete trucks per day.

Their haul routes consist of Highway 36 and 101. Caltrans' traffic division has concerns with this intersection. The aforementioned sight distances of 500 feet and 800 feet are required for passenger vehicles and semi-trailers and these sight distances do exist at this intersection. A new interchange is planned at this intersection which would alleviate present concerns. However, the new intersection is not in the 1992 State Transportation Improvement Plan. The new interchange would contain a frontage road along the west side of Highway 101 from Hansen's Truck Stop south to the Van Duzen River. All of the truck traffic from Hansen's gravel operation, restaurant, and truck stop would use this interchange.

The new proposed gravel operation by Mercer-Fraser, designated Site No. 13 in this EIR, could generate 80-90 truck per day during the busy season. The proposed haul route will be Highway 101.

Traffic generated by Jack Noble's operation is estimated to be about 30 trucks per day. The haul route would have to be either Fisher Road or River Bar Road. Both of these roads are narrow (16-18 feet) County roads that pass through agricultural lands.

The intersection of Fisher Road with Highway 36 lacks proper sight distances as does River Bar Road. The average daily traffic volume on Highway 36 at River Bar Road is about 2650. At Fisher Road it is 2000. These two intersections do not contain acceleration lanes. Further details and mitigation will be covered in a supplemental EIR to be submitted by Jack Noble.